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North Carolina State University

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MESSAGE FROM THE CONFERENCE/PROGRAM CHAIR

On behalf of the organizing committee, we would like to welcome you to Atlantic City and to the Second International Conference of the American Institute of Higher Education (AmHighEd). The theme of this conference is to enhance our understanding of the impact of information technology on business and education. The conference will provide an opportunity for all participants to share their ideas and research in the fields of business, economics, accounting and education.

Our First International Conference in Orlando, FL, was a great success with more than seventy participants from all over the world. As indicated in the program, our Second International Conference will build on the success of the previous conference. Besides paper presentations, the grant writing workshop is back by popular demand. We have also added two more workshops: one on quality in education and the other on online courses and instructional design.

We at AmHighEd believe that research is a cooperative enterprise among scholars and practitioners. That is why we are committed to providing a collaborative environment that fosters free flow of ideas and constructive feedback among researchers, practitioners, and students. We would like to thank all the attendees whose contributions and participation are very important for a stimulating environment at the conference.

Again, welcome to our Second International Conference. We hope that you will find the conference productive, informative, and enjoyable. We also wish you a pleasant stay in Atlantic City.

Sincerely,

Arben Asllani
Conference Chair
University of Tennessee at Chattanooga

Dothang Truong
Program Chair
Fayetteville State University



2008 CONFERENCE OFFICERS AND COMMITTEE

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BEST PAPER AWARD WINNERS

Best Education Paper:

How to Improve Your Teaching Evaluations Using Information Available on the Internet: From Average to Off the Chart in One Semester

Blaine Walgren, California State University at Fullerton

9:20 a.m. – 10:40 a.m. (Friday)

Carousel D

Best Business Paper:

Empirical Investigation of the 'Halo' Effect of Financial Performance on the Relationships between Corporate Reputation and CEO Compensation

Jooh Lee, Rowan University

Ernest Hall, Jr., University of Southern Indiana

11:00 a.m. – 12:20 p.m. (Thursday)

Carousel A

TABLE OF CONTENTS

MESSAGE FROM THE CONFERENCE/PROGRAM CHAIR.....	2
2008 CONFERENCE OFFICERS AND COMMITTEE.....	3
BEST PAPER AWARD WINNERS.....	4
THE ROLE OF PERCEIVED USEFULNESS AND PERCEIVED EASE OF USE IN STUDENTS' MATHEMATICS SUCCESS	9
WORLD 2.0	11
EFFECT OF EDUCATION QUALIFICATION IN INFORMATION TECHNOLOGY INDUSTRY: A CASE STUDY OF INDIA ...	19
THE TECHNOLOGICAL TRANSFORMATION OF AN ORGANIZATION: AN STSM PERSPECTIVE	25
TEACHER CANDIDATES' PERCEPTIONS AND PERFORMANCE ABILITIES IN BASIC COMPUTER SKILLS USING SELECTED NATIONAL EDUCATIONAL TECHNOLOGY STANDARDS.....	27
EDUCATION IN RURAL MISSISSIPPI SCHOOL DISTRICTS	32
AN EXPLORATORY STUDY OF RIGOR AND TEACHING STRATEGIES IN HIGH SCHOOLS	35
A METHOD FOR MAMMOGRAPHIC DATA ANALYSIS BASED ON BAYESIAN NETWORKS	40
THE INTEGRATION OF ETHICS INTO THE STUDY OF SUPPLY CHAIN MANAGEMENT.....	45
INFORMATION TECHNOLOGY FOR UNDERREPRESENTED STUDENT POPULATIONS: WHAT CAN 21 ST CENTURY HBCUS LEARN FROM 20 TH CENTURY EXAMPLES?	49
CHALLENGES AND OPPORTUNITIES OF PEER REVIEW IN HIGHER EDUCATION	58
A COMPARISON OF ONLINE AND IN-CLASS TEACHING EVALUATIONS USING MULTIPLE REGRESSION ANALYSIS .	62
VALUES-BASED TEACHING EXPECTATIONS AND EVALUATIONS	72
ACCOUNTING AS A DISCIPLINE: AACSB ACCOUNTING AND ELITISM	75
SUCCESSFUL READING STRATEGIES FOR CONTENT AREAS.....	79
USING AN INTEGRATED FINANCIAL AID MODEL TO ACCOMPLISH STRATEGIC OBJECTIVES	82
TEACHER EDUCATION: WHY CULTURAL COMPETENCE SHOULD BE TAUGHT.....	88
EMPIRICAL INVESTIGATION OF THE 'HALO' EFFECT OF FINANCIAL PERFORMANCE ON THE RELATIONSHIPS BETWEEN CORPORATE REPUTATION AND CEO COMPENSATION	96
A CONTENT ANALYSIS OF CULTURAL LANGUAGE IN THREE CURRICULUM MODELS: EXCLUSION, INCLUSION AND EMPOWERMENT OF THE LEARNER	102
K-12 OUTREACH: ATTITUDES TOWARDS GAMING EDUCATION	111
HOLLYBUSH ACADEMY: A CASE STUDY IN SELECTED NOT-FOR-PROFIT.....	117
U.S. REGULATORS' RESPONSES TO THE FINANCIAL REPORTING NEEDS OF GLOBAL INVESTORS.....	128
ENTERPRISE RESOURCE PLANNING (ERP) SYSTEMS & ACCOUNTING INFORMATION SYSTEMS (AIS): DO THESE BUSINESS SYSTEMS HAVE THE POWER TO CHALLENGE ACCOUNTING CURRICULUMS TO MORE PEDAGOGICAL RELEVANCY?.....	133
INAPPROPRIATE REVENUE RECOGNITION AND THE MISSTATEMENT OF REPORTED EARNINGS	146
A COMPARISON OF TWO STANDARDS OF QUALITY FOR EDUCATION: AACSB-INTERNATIONAL AND ISO9001....	154



TEACHING THE SECOND COURSE IN BUSINESS STATISTIC: STUDENT KNOWLEDGE, USE OF STATISTICAL SOFTWARE, AND STUDENT SATISFACTION	158
ENGAGING STUDENTS WITH WEB 2.0 TECHNOLOGIES	163
THE EU-US TRADE RELATIONS: ISSUES, CONFLICTS AND SOLUTION.....	169
INSTRUCTING AND MENTORING THE AFRICAN AMERICAN: NOTES FROM THE FIELD.....	177
ARE STUDENT EVALUATIONS MEANINGFUL? A STUDY OF THE OPINIONS OF ACCOUNTING STUDENTS COMPARED TO BUSINESS PROFESSORS	185
THE NATURE OF ARGUMENT AMONG FRESHMEN COLLEGE STUDENTS, SCIENCE TEACHERS, AND PRACTICING SCIENTISTS.....	193
GREEN MARKETING: RISKS AND OPPORTUNITIES	199
NCLB PART II: WHEN ADMINISTRATION INTERVENES:	207
EFFECTS OF BLOGFOLIOS ON STUDENTS' PERCEPTIONS ON INTERACTION AND LEARNING	208
INFLUENCES ON FEMALE INTEREST IN PURSUIT OF STEM FIELDS IN HIGHER EDUCATION	213
ASSESSING HUMAN RESOURCE MANAGEMENT-SPECIFIC KNOWLEDGE VIA AN E-MAIL IN-BASKET EXERCISE....	223
DOWNSTREAM RETENTION OF CONTENT AND COGNITIVE CONSTRUCTS AS MEASURED BY THE TEST OF UNDERSTANDING OF COLLEGE ECONOMICS – MACROECONOMICS	228
THE GLOBAL VILLAGE FORTY YEARS LATER:HOW HAS TECHNOLOGY CHANGED THE WAY WE THINK, LEARN, AND TEACH?	234
THE IMPACT OF A FRESHMAN SEMINAR ON RETENTION AND ACADEMIC PERFORMANCE OF BUSINESS MAJORS AT A HISTORICALLY BLACK UNIVERSITY	239
ASSESSMENT MAPPING: A TECHNOLOGICAL TOOL TO SUPPORT DATA-DRIVEN DECISION-MAKING	247
TOWARDS AN UNDERSTANDING OF HAITIAN IMMIGRANTS IN THE NEW YORK, NEW JERSEY AND CONNECTICUT TRI-STATE REGION	252
HBCUS AND SHARED GOVERNANCE	257
1890 INSTITUTIONS: RESPONDING TO THE NEEDS OF URBAN COMMUNITIES	261
THE "M" FACTOR: EXPLORING THE IMPACT OF FORMAL AND INFORMAL MENTORING ON THE LIFE AND CAREER OF AFRICAN AMERICAN MALE COMMUNITY COLLEGE PRESIDENTS OF SOUTHEASTERN STATES	264
AFRICAN AMERICAN MALE TEACHERS EXAMINE THE EDUCATION EXPERIENCES OF IMMIGRANT CHILDREN IN GERMAN SCHOOLS	266
USING SERVICE LEARNING AND INFORMATION TECHNOLOGY IN THE AREA OF FINANCIAL LITERACY FOR HIGH SCHOOL AND COLLEGE STUDENTS.....	269
TERTIARY EDUCATION IN GHANA: EXPANSION AND THE ROLE OF INFORMATION COMMUNICATIONS TECHNOLOGY.....	272
AN EXCEL BASED SOLUTION MODEL FOR THE MACHINIST'S SEQUENCING PROBLEM	281
HOW TO IMPROVE YOUR TEACHING EVALUATIONSUSING INFORMATION AVAILABLE ON THE INTERNET: FROM AVERAGE TO OFF THE CHART IN ONE SEMESTER	285
EXAMINING DIFFERENCES IN COMPUTER SELF-EFFICACY	288
SOCIALIZING INTERNATIONAL STUDENTS INTO AMERICAN HIGHER EDUCATION CULTURE: STRATEGIES AND CHALLENGES	292



VOCATIONAL BELIEFS AS THE CONSTRUCTS OF STUDENTS' PERCEPTION OF THE ACCOUNTING PROFESSION: A COMPARATIVE STUDY.....	298
TEACHING TEAMWORK AND TECHNOLOGY SKILLS TO NAVIGATE A FLAT WORLD	308
FARM BUSINESS DIVERSIFICATION: A LOGIT ANALYSIS	314
PEOPLE'S REPUBLIC OF CHINA (PRC) AND COUNTERFEITING: SHOULD GLOBAL BRAND OWNERS CARE?.....	319
USING BLOOM'S TAXONOMY TO INFORM COURSE DESIGN: TEACHING AND ASSESSING BASIC CONCEPTS TO ADVANCED APPLICATIONS IN AN ONLINE ENVIRONMENT.....	324
THE ATTITUDES OF BLACK MALES TOWARDS BECOMING EDUCATORS AND CHILD CARE CAREGIVERS IN EARLY CHILDHOOD SETTINGS	330
USING MULTIMEDIA TO CONVEY PROCEDURAL KNOWLEDGE: STUDENT AND FACULTY PERCEPTIONS	332
CELL PHONE USE AND EGO STRENGTH AMONG COLLEGE STUDENTS: A PRELIMINARY STUDY	339
A SERVICE LEARNING MODEL: APPLICATION OF A STRATEGIC MARKETING COURSE TO THE EXPLORATION OF COMMUNITY INITIATIVES	344
A STRATEGY TO ADDRESS CONTENT LITERACY: A CONCEPTUAL PAPER	351
READING TO LEARN ON THE INTERNET: CHALLENGES, SOLUTIONS, AND IMPLICATIONS	355
TO STOP SKIMMING THE SURFACE: USING THE INTERNET IN ELEMENTARY SOCIAL STUDIES INSTRUCTION	359
INSTITUTIONAL AND ADMINISTRATIVE IMPEDIMENTS TO DEVELOPING AN ONLINE MBA PROGRAM – A CASE STUDY.....	366
SPIRITUALITY, LEADERSHIP, AND CULTURAL DIFFERENCES AT WORK.....	373
UTILIZATION OF AN ENGINEERING CAMP TO ATTRACT AND STIMULATE INTEREST IN RURAL HIGH SCHOOL STUDENTS IN STEM CAREERS	378
ACCOUNTING SYSTEM CHANGE DURING INCREASING COMPETITION: AN APPLICATION OF DISCRIMINANT ANALYSIS.....	387
WHAT LEVEL OF BUDGETARY GOAL DIFFICULTY ELICITS MAXIMUM EFFORT?	396
TIME BANDITS: A REJOINDER	402
THE CORRELATION OF DIVERGENCE AND COLLEGE SUCCESS.....	407
ACCOUNTING FACULTY UTILIZATION OF WEB-BASED RESOURCES TO ENHANCE IN-CLASS INSTRUCTION.....	409
ORGANIZATIONAL CORRELATES OF EMPOWERMENT: AN EXPLORATORY STUDY	411
WIRELESS SECURITY AWARENESS IN EDUCATION	415
NEW PRODUCT DEVELOPMENT GUIDELINES FOR AN ENTREPRENEUR.....	419
PREFERENCE AGGREGATION FOR CONCEPT EVALUATION IN NEW PRODUCT DEVELOPMENT	425
HOW CAN WEB 2.0 HELP ENTREPRENEURS IN STARTING A NEW BUSINESS?	429
THE EFFICIENCY OF PRIVATE UNIVERSITIES AS MEASURED BY GRADUATION RATES.....	430
DIALOGICAL NARRATIVE: A MODEL FOR LEARNING, LEADING, AND CHANGE IN HIGHER EDUCATION	431
SALARY DIFFERENCES AMONG PROFESSIONAL BASEBALL PLAYERS: AGENCY, TOURNAMENT AND EQUITY THEORIES.....	432
A WORK OF A.R.T.ACCOUNTABILITY, RESPONSIBILITY, AND TEAMWORK A CROSS-CULTURAL MODEL FOR INDIVIDUALIZING INSTRUCTION.....	433



CHAOS IN THE CLASSROOM.....	434
LOVE OF MONEY, MACHIAVELLIANISM AND UNETHICAL BEHAVIOR: DIFFERENCES BETWEEN INTRINSIC AND EXTRINSIC RELIGIOSITY STUDENTS	435
EXAMINING DIFFERENTIATED INSTRUCTION FOR NOVICES: TEACHERS RESPOND	436
AN ACADEMIC AND COMMUNITY APPROACH TOWARD CULTURAL DIVERSITY FOR THE PREPARATION OF TEACHER CANDIDATES AT A PRIVATE WOMEN'S COLLEGE.....	437
PROGRAM ASSESSMENT:WHAT CAN BE LEARNED FROM SENIOR AND ALUMNI SATISFACTION SURVEYS?	438
MANUFACTURING PLANNING AND CONTROL.....	439
EDUCATORS WHO CARE: THE ROLE OF POLITICAL CLARITY IN EDUCATOR – STUDENT RELATIONSHIPS AND PRACTICES	440
INSTRUCTORS' GENERAL PERCEPTIONS ON STUDENTS' SELF-AWARENESS	441
TECHNOLOGY FUNDING IN EDUCATION: DO WE REALLY MEAN BUSINESS?.....	442
TECHNOLOGY POLICY AND DATA-DRIVEN DECISION MAKING IN HIGHER EDUCATION	443

THE ROLE OF PERCEIVED USEFULNESS AND PERCEIVED EASE OF USE IN STUDENTS' MATHEMATICS SUCCESS

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INTRODUCTION

Meta-analytic reviews of media research have produced evidence that exhibit positive learning benefits with various media, particularly computers (Clark, 1985a, 1985b). These analyses reported an approximate 20 percent increase in final exam scores following computer-based instruction (CBI) when it is compared to traditional forms of instruction. The importance of using technology in classroom for teaching mathematics has “increased dramatically” over the course of the last several years (Lappan, 2000, p.319).

The Technology Acceptance Model (Davis, Bagozzi, & Warshaw, 1989) suggests that perception or attitude towards its use directly influence intentions to use the computer and ultimately actual computer use and the computer usage behavior. An individual's initial attitude regarding a computer's ease of use and computer's usefulness influence attitudes towards use and that training significantly improved the computer self-efficacy for both males and females (Torkzadeh, Pflughoeft & Hall, 1999).

A significant and growing body of subsequent research has confirmed the usefulness of the Technology Acceptance Model (TAM) – and various extensions and revisions – as a tool for investigating user information technology acceptance (Chau, 1996; Geffen and Straub, 1997; Szajna, 1996; Taylor & Todd, 1995). The TAM by Davis was developed to explain computer-usage behavior.

Adapted from the theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM) by Davis (1989) identified two distinct constructs, perceived usefulness and perceived ease of use which directly affect the attitude towards target system use and indirectly affect actual system use. TAM has proved that the perceived ease of use and perceived usefulness can predict attitude towards technology that then can predict the usage of that technology. The Technology Acceptance Model is used in this study to analyze students' attitude regarding technology that moderates the effect of supplemental computerized instruction on the development of mathematical skills.

REVIEW OF LITERATURE

A research study in Victoria, Australia examined the Computer Algebra Systems (CAS) in mathematics courses (Leigh-Lancaster, 2000), and several studies in USA has investigated the use of CAS within college mathematics curriculums. The students using CAS in studying college algebra course were again able to outperform non-users both conceptually and computationally. The TAM was formulated to trace the impact of external factors on internal beliefs, attitude and intentions.

According to the TAM, perceived usefulness and perceived ease of use have a significant impact of a user's attitude towards using the system. The TAM expanded it by incorporating the sets of constructs: a) Perceived usefulness (PU) and Perceived Ease of Use (PEU), (b) User's Attitude (AT), and ultimately the Actual Use (AU) of the system. Davis (1986) introduced the TAM to account for the psychological factors that affect computer acceptance. Each of the factors of TAM is defined as follows:

- Perceived usefulness: The degree to which the individual believes that use of target system could enhance the job performance (Davis, 1993, p.477).
- Perceived ease of use: The degree to which the individual believes that using the target system would be free of mental and physical efforts (Davis, 1993, p. 477).

A causal relationship between attitude towards mathematics (ATM) and achievement in mathematics (AIM) has long been assumed to exist. That is, a more positive ATM contributes to a higher level of AIM (Suydam & Weaver, 1975). According to this study there was a reciprocal relationship between attitudinal measures and achievement in mathematics which implied that making to learn mathematical content in different set up, either computer software or any other method will improve the performance in mathematics.

Davis (1993) suggested that the perceived usefulness and perceived ease of use are both effective predictors of attitude towards system use. The success of an information system can be measured by two indicators: frequency

and intensity (Davis, 1993). According to Davis, frequency of use and amount of time spent using a system are typical of usage metrics. The TAM is based on the assumption that when end users perceived the target system as one that is easy to use and nearly free of mental effort, then they may have a favorable attitude towards using the system as implied by a research study by Pan, Sivo, and Brophy (2003). When the end users have a positive attitude towards the use, then the frequency and duration of system use would prove successful. According to Fu, Farn and Chao (2006), the perceived usefulness of TAM has a strong influence in their study of acceptance of electronic tax filing.

METHODOLOGY

According to Davis (1989), the perceived ease of use and perceived usefulness both exert a causal influence and affect users' attitudes toward new technology use. Each of the scales adapted from Davis' (1989) research asked students to respond the questionnaire based on their perception about the use of computer towards their mathematics performance. The Attitude instrument is adapted from Ajzen and Fishbein's (1980) attitude scales. The system use instrument measure frequency and duration of students' use of the computer component of the class. Davis (1993) argued, "Frequency of use and amount of time spent using a target system are typical usage metrics employed in MIS research" (P. 480). To measure the frequency and duration of students' use of computer, students were asked to select one of the five options that best matched their use of the computer. The questionnaire was administered to the students three times (TAM1, TAM2 and TAM3) in the longitudinal study, which contained perceived usefulness, perceived ease of use, and students' attitude towards computer use that ultimately affected the students' course grade.

RESULTS

The results at TAM1, suggested that the students' perception of math software's usefulness (PU) did a better job of explaining students' perception of how easy the software were to use (.605). The perceived usefulness explained the variation in students' attitude (.320) but the perceived ease of use contributed only (.099). The frequency (.025) and duration of actual use (.045) supported little to the attitude data in TAM1. In TAM2, the perceived usefulness supported perceived-ease-of use (.558). The perceived usefulness supported the attitude in a considerable amount (.531), but it showed that the perceived-ease-use did not support the attitude (-.037). The Final grade was supported by the duration of actual use (.131). The duration of actual use along with the variable of frequency of actual use had increased contribution in TAM2 when compared to TAM1. In TAM3, the perceived usefulness supported perceived ease of use the most (.510) which indicated that students' perception about the software use was good towards their math performance. The perceived usefulness impacted the attitude in a considerable amount (.424) that suggested that their attitude was improved a lot towards using the math software which was influenced by their perception of computer usefulness. But somehow, the data of perceived ease of use did not quite support the attitude (.062), indicating that the students realized at the end that the computer only will not ease their work. The Final grade was supported by the duration of actual use (.292) and then the contribution was also from the frequency of actual use (.165).

CONCLUSION

Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use a technology. The model suggested that when users are presented with a new software package, a number of factors influence their decision about how and when they will use the system. The perceived usefulness and perceived ease of use are notably two important factors played a major role in this study.

The analysis of this study showed a profound impact of perceived usefulness on students' mind to use the computer technology to improving their mathematics score. The students' attitude to use the computer technology was strongly influenced by the perceived usefulness that affected their final exam scores and showed the success. It was also found that the perceived ease of use did not have a positive effect on student's mind to study mathematics. The findings of the study will assist the schools and universities using computers for mathematics success.

WORLD 2.0

James A. Sena

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ABSTRACT

The current generation of web-based social networking applications and services is designed around an architecture of participation and communal collaboration. Web 2.0 authoring tools enable users to collaboratively create, share and recreate knowledge from multiple sources, leverage collective intelligence and organize action. These authoring tools and applications, such as Wikis, blogs, and multimedia sharing services, exploit and extend the building blocks of existing web-based technologies providing businesses with a very different kind of learning space. This paper explores the world encompassed by a wide range of 2.0 communities of practice by first focusing on defining and exploring the Web 2.0. Following this discussion several variants of World 2.0 are discussed and implications are drawn.

INTRODUCTION

The worldwide web no longer represents a distinctly delineated cyber space, separated from the rest of the world of people's everyday life, work and learning. The ability to communicate has proliferated our professional and social lives. Our work and personal activities can be reported, researched, shared and learned through social networks largely unbounded by space and time (Eijkman, 2008). Businesses have intensified the identification and engagement of its staff through participation in professional networks and multiple interest groups. This bundle of relatively new social networking tools commonly referred to as "Web 2.0" makes network centric possible. Eijkman drew on Boyd (2005), O'Reilly (2005), Freeman (2006), Hihchcliff (2006) and Anderson (2007) to describe Web 2.0 broadly as -- The current generation of web-based social networking applications and services designed around an architecture of participation and communal collaboration. Web 2.0 authoring tools enable users to collaboratively create, share and recreate knowledge from multiple sources, leverage collective intelligence and organize action.

These authoring tools and applications, such as Wikis, blogs, and multimedia sharing services, exploit and extend the building blocks of existing web-based technologies providing businesses with a very different kind of learning space. Social networking and collaborative knowledge construction is enabled through easy, extensive, in-depth access to a range of networked communities of practice (Freedman, 2006). There are a number of Web 2.0 correlates such as Classroom 2.0 (for educators), Law 2.0 (for lawyers), Business 2.0 (this is actually a publication as well as a name for a variation of Web 2.0). Collectively all of these correlates delineate a cyber space that for want of a better word we describe as World 2.0. This paper explores this world by first focusing on defining and exploring the Web 2.0. Following this discussion several variants of World 2.0 are discussed and implications are drawn.

WEB 2.0: ITS BEGINNINGS

This business revolution in the computer industry was caused by the move to the internet as platform, and an attempt to understand the rules for success on that new platform. The dynamic nature of current network systems promotes a constant innovation of computer products. Where some see the term Web 2.0 as merely a generic buzzword, the computer industry views it as the beginning milestone to an ever evolving inter-net that will continue to foster inter-human connectivity.

Profit, the bottom line in business, is inevitably the driving force behind many strategies and decisions in the workplace. Many business visionaries have capitalized on the shift to online transactions and web sites to compliment brick and mortar business buildings. Upon connecting to the internet, the average knowledge worker is already equipped with the skills to retrieve information, navigate through material, and even contribute to web pages. They do not need instruction when faced with an unfamiliar homepage. Much has been made about Web 2.0 and what exactly this paradigm shift actually means (Wyld, 2008). It has been described by researchers for the Pew Internet and American Life Project as a "catch-all buzzword" (Madden and Fox, 2006). Boutin (2006) observed that Web 2.0 is a term that currently encompasses "a mishmash of tools and sites that foster collaboration and

participation”. Nail (2006) characterizes this phenomenon as “participatory theater”, where “the principles and technologies of Web 2.0 evolve the user experience from hunting and gathering to creation and social connections”.

The idea of capitalizing on bringing people together online is not entirely new (Enders, 2008). Prior literature has identified various motivations for bricks-and-mortar companies to integrate virtual communities (VCs) into their existing business models. For instance, they can be installed to serve communication, information, entertainment or transaction purposes (Armstrong and Hagel, 1996), to support a company’s physical products (Walden, 2000) or to create a single point of access for information within a company (Williams and Cothrel, 2000).

Wyld (2008) noted that in 2003, the word “blog” first appeared in the Oxford English Dictionary (Lyons, 2005) and a year later, blog was named Merriam-Webster’s “word of the year” for 2004. A blog can be defined simply as “an easy-to-use content management tool. When you “blog”, you are instantly adding new content to your site via a Web interface. No technical or programming skills are necessary” (Weil, 2004). Concisely, a blog can be differentiated from a website because it is easier to create and update. From a definitional perspective, a blog refers to an online journal that can be updated regularly with entries typically displayed in chronological order.

This new architecture of participation invites a radical reframing of our approach to knowledge and learning from a foundational to a non-foundational epistemological perspective. Knowledge acquisition, whether formal or informal, is an inherent social process. Learning is about the collaborative acculturation of persons into a community or network of practices and its knowledge systems. More companies are offering some type of Web 2.0 as corporate applications to their employees. Blogs, wikis and social networking tools used for internal communication, collaboration and knowledge management are being deployed to communicate and collaborate with customers and partners.

The online world largely mimics the offline world. E-mails replace letters, websites make publishing speedier and more effective; data are stored on the user’s computer. A collection of programs, paid-for or pirated, are the essential tools for getting going. Web 2.0 has overtaken all of this using the interactivity brought about by wikis (pages that anyone can edit) and blogs (on which anyone can comment). Data are accessed through the internet; programs are opened in browser windows rather than loaded from the hard disc; instant messages, often attached to social-networking sites such as Facebook, replace e-mail. Web 2.0 also means free video-sharing on sites such as YouTube and free phone calls between computers such as Skype. These developments allow information to be shared far more effectively, at almost no cost.

Like many important concepts, Web 2.0 doesn’t have a hard boundary, but rather, a gravitational core. O’Reilly (2008) envisions Web 2.0 as a set of principles and practices that tie together a veritable solar system of sites that demonstrate some or all of those principles, at a varying distance from that core.

Mass peer review has proven useful from disciplines ranging from psychology to economics and currently serves as the invisible hand monitoring the accuracy, legality, and safety of all content. For the knowledge worker the advent of hypertext has allowed instant referencing of all related material. Kevin Kelly (2005) noted in an article published in *wired magazine* the importance of hypertext and other underlying principles of Web 2.0 -- “At its heart was a new kind of participation that has since developed into an emerging culture based on sharing. And the ways of participating unleashed by hyperlinks are creating a new type of thinking - part human and part machine - found nowhere else on the planet or in history.”

Web 2.0 in the Workplace

The possibilities for using social networking, blogs, wikis, etc. for communication, sharing best practices, building communities and direct or indirect business activities such as recruiting and employment branding appear to be just getting started (HR Focus, 2008). Companies can tap emerging global marketplaces to discover and develop new products and services faster and much more efficiently than they have in the past. Social networking numbers among the Web 2.0 technologies that can help a company foster communication and collaboration (Roberts, 2008). Using any public site as the corporate social network may be a cultural stretch. What should not be a stretch is the use of social networking software controlled within the corporate firewall. Adopters have become convinced that it will bring dispersed workers closer together.

Facebook and MySpace are the leading public social networking web sites. Users can upload personal information, including photos and videos, to share with friends. Both sites allow interest groups and companies to set up restricted areas for invited users only. They also allow the use of outside applications. Many organizations, including the CIA, use Facebook to post job openings. Yet many of these same organizations block access to Facebook from the corporate intranet.

As companies grapple with whether, and how, to offer a social-networking platform for their workers, some are realizing that if they don’t act quickly their workers will go ahead and do it anyway. And that can mean forfeiting

control over what content gets posted where, and who can see it. Among the issues is whether to build its social-networking platform on an established site like Facebook, or whether to set up an independent site with the firm's own brand (Niccolai, 2008).

Science and technology now evolve at such a great speed that even the largest companies can no longer research all the disciplines that contribute to their products. Nor can they control an end-to-end production process or seek to retain the most talented people inside their boundaries. Meanwhile acquisitions, alliances, joint ventures and selective outsourcing are simply too rigid, and scalable, to drive growth and innovation at a level that will make companies truly competitive (Tapscott & Williams, 2007). Smart companies will treat the world as their R&D departments and use the ideas, inventions and scientific expertise that are out there in the cyberspace to seek out ideas, innovations and uniquely qualified minds on a global basis.

The kinds of skills needed for learning professionals today are not so much specific Web 2.0 tools, but rather changes in attitudes and perspective (Jarche, 2008). Today, active involvement in informal learning, particularly through Web-based communities, is key to remaining professional and creative in a field. Look at the advancements that community-developed open source software has made in the past few years. People with larger and more diverse networks have an advantage as learning professionals and in dealing with change. Professionals immersed in communities of practice, or those continuously pushing their informal learning opportunities, may have a larger zone of proximal development (the gap between a learner's current development level and the learner's potential level of development). They are more open to learning and to expanding their knowledge. (Jarche, 2008)

The 2.0 phenomena are affecting many professions and industries, including those related to business research. Web 2.0, Library 2.0, Enterprise 2.0, Management 2.0, CRM 2.0, Strategy 2.0, Banking 2.0, Politics 2.0, Entertainment 2.0, and even Starbucks 2.0 -- all of these seriously impact the ability of information professionals to provide solid research projects and answers to their clients, customers, and patrons. The underlying premises of Web 2.0 identifies the web as platform, encourages user content creation, and empowers workplace collaboration, and, requires a radical rethinking of how information professionals approach business research.

Politics 2.0

The 2008 primary was the first presidential primary of the new digital age. The \$73 million estimated spent online -- across all races in both primary and general elections-is significantly less than the \$210 million estimated spent on national TV in the presidential primary. (Ira Teinowitz , 2008) Ad spending may not be a common metric. Those involved with online campaigning suggest it understates the marketing changes taking place—the reason being it doesn't come close to tracking social-networking tools-or the return on investment on online fundraising.

Entertainment 2.0

Schwartz (2008) in reflecting on the growing influence of Web 2.0 on b-to-b (business-to-business) markets noted that *Variety* in March, 2008 launched The Biz, a social network that lets entertainment and media professionals network, pitch products, exchange ideas and search for jobs. The site, developed in association with Jobster, which builds online career networks, provides a venue for employers to recruit talent and target candidates by specific interests and skills. The Biz is an outgrowth of Variety Careers, which was launched in 2005. The intent is to put [users] in touch with HR execs at the studios, headhunters or personnel at the independent film companies. Advertisements that previously ran on Variety Careers are now running on The Biz, including messaging from Discovery Network, Fox and Nickelodeon. As the Web site develops and more specific demographics become available, marketers will be able to better pinpoint their ads.

Library 2.0

Leveraging the approaches typified by Web 2.0's principles and technology offers libraries many opportunities to serve their existing audiences *better*, and to reach out beyond the walls and Web sites of the institution to reach potential beneficiaries where they happen to be, and in association with the task that they happen to be undertaking (Miller, 2005). Libraries were once the guardians of knowledge, and the point at which those seeking existing knowledge would engage with it. With the rise of Google, Amazon, Wikipedia and more, there is fear that users will bypass processes and institutions perceived to be slow, unresponsive, unappealing or irrelevant for a direct approach to services offered that just might be 'good enough' for what they need to do.

Maness (2006) defines "Library 2.0" as "the application of interactive, collaborative, and multi-media web-based technologies to web-based library services and collections," and suggests this definition be adopted by the

library science community. Limiting the definition to web-based services, and not library services, avoids potential confusion and allows the term to be researched, further theorized, and renders it useful in professional discourse.

Banking 2.0

Price (2008) noted that in the fast-evolving world of web-based services, the realm of online banking remains conspicuously static. Since its inception more than a decade ago, the functionality of the online bank has struggled to keep pace with web-based innovations. It has yet to fully embrace the majority of Web 2.0 tools and services, the key features of which are user interaction, collaboration, visual and intuitive ease of use. Ensuring a unique customer experience, driven by innovation in the underlying online banking technology capability itself, is one way in which the banks can attempt to develop "a kind of connection to the customer".

US-based online brokerage and bank, E*Trade Financial, is exploring and has developed prototypes of mashups and widgets (new tools and services created with content from multiple sources) that uses data from customers' portfolios and accounts. These tools allow customers to make a seamless comparison of data from their own portfolio against streams of live data provided by other websites, so they can monitor their portfolio's performance more effectively.

Marketing 2.0

Charlene Li, an analyst for Forrester Research, believes that Web 2.0 reflects the essence of a new generation of marketing where technology is viewed as empowering communities, not institutions (Cooley, 2007). It is clear that recent advances in technology have changed the relationship between the firm and the customer where the customer occupies a central role, and technology contributes to brand building by creating and sustaining a long-term relationship with the customer who has become an active participant in the process (Nardini, 2005).

CRM 2.0

The emergence, proliferation, and ubiquity of the Internet have not only transformed businesses, but also altered the relationship between businesses and the customer (Singh, 2008). Recent advances in technology have helped to change this relationship to an interactive level where technology contributes to brand building by creating and sustaining a long-term relationship with the customer. Media fragmentation and customer indifference to traditional marketing tools are forcing marketers to seek new opportunities so the marketing message not only captures customers' attention, but also tries to engage them with the company. Research suggests that customers value a unique, more personalized message, and marketers continue to seek opportunities that will deliver that message in innovative and interesting ways. Blogs offer firms the ability to connect with customers in a unique and personalized manner where everything from brand promotions to new product ideas can be effectively communicated.

Management 2.0

Management expert Tom Peters (2001) advocated that all executives practice MBWA – or “Managing by Wandering Around” as a key to unlocking leadership excellence. When this idea was proposed in the 1980s, wandering meant being somewhere physically – in a factory, store or office. Today as anyone wanders around the local coffee houses, universities, parks, streets or their company's offices, it is evident that more of their lives are being spent online. Thus, to be an effective leader in this environment, the business person too must wander online (Wyld, 2008). A virtual roam around a company or organization is possible with the advent of a host of technological advances – we no longer are just “surfing the web”, we engage it by creating and controlling our personal content through user-generated media technologies, while doing this without sophisticated knowledge of computer programming.

What is important in terms of corporate adoption is to stop thinking about blogs as a technology in itself, but instead as tactics to empower company workers. Through the aggregation process, they have the ability to deliver the right content at the right time and in the right context (in McNamara, 2005). As communication between workers is shifted from email to blogs, the resulting work is more easily accessible and searchable, resulting in a more permanent and user-friendly communications medium. In essence, blogs become a way for individuals to narrate their work and communicate more effectively within their company (Manjoo, 2002). Today, a blog receives more attention than email (Weil, 2004).

Through entering into the blogosphere with their own corporate blogs, companies are finding that blogging gives a voice to their company in this new medium (Evans & Stroll, 2005). Blogging promotes a new sense of openness with all stakeholders – employees, customers, the public and the media included. Such an environment of openness is especially valuable in an era of intense scrutiny and an age of mistrust of large institutions (Vara, 2006). The ability of executives and the managers of companies to communicate effectively in the freewheeling environment of a blog are questionable. For blogging executives, the activity requires them to be spontaneous and controversial -- characteristics not typically associated with corporate success.

Starbucks 2.0

At its 2008 annual meeting, Starbucks announced the launch of My Starbucks Idea, a social network where consumers can post ideas for how the company can improve its service and products or comment and vote on others' ideas. Voting will be tallied online, with each idea assigned a point value. Consumers are kept up to speed on what Starbucks is doing with the proposed suggestions on a new blog, Ideas in Action (Bush, 2008). This move has already raised concerns from observers of the company, and is likely to reignite debate over whether brand created blogs or social networks are a smart attempt to empower consumers or a cynical attempt to advocate for the company.

Intranet 2.0

Goetz Boué (2008) suggests that many firms existing intranets may be the best place to start experimenting with blogs and wikis and offers ways in which the integration of such technologies can assist an organization in reaching its business objectives. In the past not all intranets have lived up to expectations. Some organization have found themselves with an intranet that is owned by the IT department, or perhaps marketing, with little involvement or buy-in from other parts of the business. It might be very static and be updated with new information as infrequently as once a month..

Any company online site that doesn't keep pace with the demands of users will fail. Tredinnick (2008) explored the application of Web 2.0 technologies to business intranets, and their potential use in managing and developing business information and knowledge assets. He notes that Web 2.0 approaches on the public web are subtly reshaping the relationship between users and information-- and argues that Web 2.0 is not just a technological innovation, but a change in the understanding of the status of information, knowledge and the role of the user in information applications. As information proliferates, control is being gradually ceded to users, opening up the possibility of a new, more democratic, and evaluative phase in the exploitation of information within organizations.

Strategy 2.0

Strategy-based blogs, as a true interactive vehicle, are driven by senior management and reach across the organizational boundaries. These companies use blogs for internal communication, external communication and feedback, to conduct market research, initiate customer communication, gather competitive intelligence, generate new product ideas, and supplement promotional efforts. The true value of blogs as a business tool is evident. Companies need to recognize that insights gained through these tools provide valuable information on customers, markets, competition, and trends. All these exercises are geared toward building brand loyalty and customer connectedness. General Motors, Boeing, Microsoft, Southwest Airlines, and Garmin are some of the companies using blogs in this manner (Singh, 2008).

Enterprise 2.0

One key success factor with introducing collaborative services in the enterprise is a well-understood usage policy. Employees and partners must know what behavior and content is accepted, what is not, and be aware of the potential consequences of noncompliance. As users become comfortable with new services they may even become the system's own watchdogs.

Security technology plays a critical role in managing Web 2.0 services. Unlike consumer services, security must be managed by the employer, typically using a combination of common user authentication and content encryption methods. For many organizations this means investing greater resources in directory service

FINAL CONSIDERATIONS AND IMPLICATIONS

Allen (2008) noted that in a recent book, 'The Wisdom of Crowds' (2004), author James Surowiecki examines the ongoing woes of the world's financial markets and draws a revealing parallel with sociologist Charles Perrow's analysis of disasters such as the Challenger explosion. According to Perrow, Challenger was a 'normal accident' – the sort of disaster that, while not foreseeable, is, in a sense inevitable because of the complex and interconnected systems involved. Systems with lots of moving parts are bound to go wrong, and when the parts are tightly linked to one another – as they are in the global financial system – then a failure in one component can cascade through the system. As Surowiecki puts it, 'the more complicated and intertwined the system is, the smaller the margin of safety'.

There is, too, an ongoing debate around which tools might win the day. It is an environment in which many enterprises are taking up social software applications that were originally designed for the social activities of teenagers and which can, therefore, fall into and out of favor pretty rapidly. The blogosphere resounds to debate about which tool is most useful. In many ways the battle of which social networking site is flavor of the month is less interesting than the underlying behaviors starting to develop, the ways in which people interact and to what end. At the same time, for those who populate multiple networks, managing one's online identity can be a job in itself.

As information turns digital, so organizations and departments are starting to come out of their silos Braun (2008). Attitudes are changing, too. The managerial style of the 1990s is facing a challenge from newer ideas and what may look like a waste of time within one organizational culture is real work when looked at within another. At the moment it looks as though share and trust are winning the battle against security and privacy. There is a danger of hyping the vision of a Web 2.0 world beyond what is safe for security and privacy. It may even be that personal privacy is already impossible and that governments, corporations and other organizations are going to have to live with a lot less of it in future

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EFFECT OF EDUCATION QUALIFICATION IN INFORMATION TECHNOLOGY INDUSTRY: A CASE STUDY OF INDIA

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ABSTRACT

Indian IT professionals have made their mark throughout the world. The IT sector is primarily a knowledge based sector, where knowledge is the main input. Hence education qualifications are expected to play a significant role in this sector and have significant impact on one's career mobility. How does education affect one's career patterns? This paper looks into these issues. Based on primary data collected from 2 cities in India, Delhi and Jamshedpur, the paper examines the effect of education on career movements in IT sector. A total of 252 respondents, consisting half of women, are surveyed. It is seen that education impacts career patterns in a significant way. It plays an important role at entry level. For women, education qualifications become more significant at entry level. Apart from education, women are also affected by lifecycle factors.

INTRODUCTION

The IT industry has gained the status of the fastest growing industry all over the world. In India too, the IT sector has come to occupy a prominent position. The contribution of ICT is significant in terms of income and earnings, growth and employment generation (Nasscom 2008). An abundant pool of skilled manpower has facilitated the rapid growth of IT industry in India. In India, the software and services exports are expected to cross \$40 billion, and the domestic market is expected to touch \$23 billion in 2008. The number of IT-BPO professionals employed in India grew from less than 200,000 people in 1998 to over 1.6 million in 2007 (Nasscom). Indian knowledge workers have been highly rated in India and abroad for their quality. The presence of world class educational institutions as IITs helped India become a leader in software exports. India currently has around 347 institutes of higher education and 16,885 colleges with a total enrollment of over 9.9 million. These produce around 495,000 technical graduates, nearly 2.3 million other graduates and over 300,000 post-graduates every year. IT companies are located mainly in cities as Bangalore, Poona and Chennai. Many computer firms are located in Delhi, Hyderabad and Mumbai.

The IT sector is primarily a knowledge based sector, where knowledge is the main input. Hence education qualifications are expected to play a significant role in this sector and have significant impact on one's career mobility. How does education affect one's career patterns? This paper looks into these issues. Based on primary data collected from 2 cities in India, Delhi and Jamshedpur, the paper examines the effect of education on career movements in IT sector. A total of 252 respondents, consisting half of women, in 10 different IT industries are surveyed. The main objectives of the paper are first to find out the education background of IT employees. Secondly, it tries to find out the effect of education on career mobility patterns of men and women. Third, the paper attempts to examine if education background of family members affect career patterns of men and women. There is brief survey of the existing literature, followed by data and methodology; operational definitions of term used. It is followed analysis of the data and summary and conclusions.

LITERATURE SURVEY

Education plays a significant role in job performance. The effect of education on job performance has been studied in detail. Individual performance on the job is affected by many factors. One factor that significantly affects individual performance and career movements, is 'human capital variable' (Spilerman, 1977; Sicherman, 1990; Sicherman & Galor, 1990). Human capital is one of the most important variables in determining one's productivity and /or one's perception of productivity (Rosenfeld, 1980; Sicherman & Galor, 1990). Acquisition of human capital is in form of education, continuity of experience and on- the- job training (Becker, 1975; Shultz, 1961; Mincer, 1974). At the entry level, the productivity of an individual is judged by level of educational qualifications. Education acts as a signal to employers about the productivity of job applicants (Arrow, 1973; Spence, 1973). Education acts as

a 'credential' or 'signal' to the employers. Employers feel that that education credentials are indicators of low training costs, as higher education levels lead to lower education costs. Hence, employers hire people with higher education levels. The quality of education, the area of specialization and the highest qualifications attained has a direct bearing on one's productivity. Thus, at the entry level, education plays a significant role in indicating one's productivity. One's family background also has a direct bearing on an individual's productivity. The socioeconomic status of an individual is measured in terms of education, income and professional status of family members. The socioeconomic background of an individual interacts as human capital variables (Rosenfeld, 1980).

Very few micro level studies have been conducted regarding Education employment Linkages in IT industry in India. Studies by Jayanthi and Madhavan (1985), TCS (1991), IAMR(1997), STEM (1999) highlight employment patterns in IT industry. They however deal with particular issues dealing in a specific firm. There is a gap in literature regarding education unemployment linkages. This research paper highlights education employment linkages in 10 different firms in India.

METHODOLOGY

This study is an empirical study. The information for the study has been collected from primary sources. There is a random sample of 252 respondents working in 10 different IT companies in Jamshedpur and Delhi. The total sample consists of 125 females and 127 males. The information regarding the respondents was collected by interviewing them personally by using a pretested questionnaire. Descriptive statistics and chi-square test have been used.

OPERATIONAL DEFINITIONS OF THE STUDY

Career mobility: For this study, career movements are measured in terms of time taken to move from one rank to another. On the basis of actual time required to move from one rank to another viz the expected time for a change in job rank, employees are classified as slow, normal and fast. Job rank or job status is measured in terms of job ranking in the organisational hierarchy. In a firm, an employee may be promoted to higher grades in terms of organisational structure. Also, employees may shift from one organisation to another, which they may consider better in terms of career opportunities. Nature of job: The work structure in the IT sector has been categorised into five levels of functions. The five categories of jobs are 1. Programmer (coding/testing) 2. Project Coordinator (Designer) 3. Project leader (Analysis) 4. Project Manager (Project Management) 5. Consultant/group head. **Education:** The educational qualifications are measured in terms of the highest qualifications acquired by an individual, either from the formal or non formal sector of computer education. **Training:** is measured in terms of number of training programmes attended. It may refer to training programmes conducted outside the firm as well as on-the-job training provided in the firm itself.

SURVEY RESULTS

a. Firm of Employment

The respondents are working in 10 different companies – TCS, NIIT, Compunnel, IDC, Cyber Media, Modi Xerox, HCL Tech. Ltd., TISCO, TTIL, Tata Timken. The first seven companies are located in Delhi while the remaining three are located in Jamshedpur. Of the total sample, the single largest group is working at NIIT - 27 percent, followed by TCS - 18 percent. 14 percent respondents are employed in TISCO i.e., these four companies constitute 70 percent of respondents which is more than half the sample. Modi Xerox has 12 percent of respondents whereas 8 percent are in Compunnel, 9 percent in Cyber Group, 4 percent in HCL Technology, 7 percent in TTIL and 1 percent in Tata Timken.

b. Socio-economic Status of Respondents

i. Caste and religion

The database consists of 252 respondents, consisting of 125 women and 127 men. 51 percent of the respondents are men while 49 percent of them are women. of the total sample, 228 are Hindus, 5 Muslims, 4 Christians and 15 Sikhs, i.e., 91 percent of the sample are Hindus, 2 percent Muslims, 2 percent Christians and 6 percent Sikhs as shown in Table 2a . Out of 252 respondents, 251 respondents belong to the OBC category, i.e., 99.6 percent respondents belong to the general category. All respondents belong to the urban regions. Thus, it is seen that majority of respondents entering the IT industry belong to the upper caste and urban areas who had access to higher education related to newer technologies.

ii. Age

IT is a newly emerging industry and the respondents all belong to the younger age groups. The average age of respondents is around 29 years. The average age of men is 30 years whereas it is 28 years for women. It is seen that 74 percent of the total respondents are less than 30 years of age (Table 2 b). 77 percent of women are less than 30 years as compared to 70 percent men. 47 percent of men belong to 25-30 years age group. The maximum number of women, 56 percent are in 25-30 years age group. The IT industry is limited to only certain sections of the population who have entered this industry at a relatively young age.

iii. Marital Status

The respondents belong to the younger age groups and a large number of respondents are single. Out of the total respondents, 54 percent of the respondents are married, 46 percent are unmarried, 0.4 percent widowed and 0.4 percent divorcees. 53 percent of women and 54 percent of men are married. The average age of marriage was 27 years for males and 23 for females.

c. Educational Qualifications

i. Education Background: The levels of education required to enter the IT field is measured in terms of formal degree or a diploma in computers. As there is a demand for English speaking trained manpower in the IT sector, the medium of instruction plays an important role in job entry. Professionals entering this field have studied mainly in private schools have specialized education in this and have had adequate pre-service training. The academic performance is also examined. The data reveals that the majority of computer professionals are products of English medium schools. 79 percent of respondents, 94 percent women and 64 percent men have studied in English medium schools. 72 percent of respondents have studied in private schools. 80 percent women have studied in private schools as compared to 64 percent men. This sector comprise mainly professional with an elite background products of private English medium schools. Entry is restricted to certain groups of people. Majority of women entering this sector belong to families who have adequate resources and give equal opportunity to daughters regarding educational opportunities.

ii. Educational Qualifications: The respondents have different educational qualifications. More than half of the respondents have professional degrees. It is seen that 51 percent of men have qualifications like engineering, MCA, MBA, etc. compared to 44 percent of women. 9 percent of men have a masters degree in engineering and a doctorate in general fields as compared to 6 percent of women. 13 percent of men are diploma holders as compared to 22 percent of women. 20 percent of men have M.Sc. Degree as compared to 26 percent of women. The highest qualification is that of a doctorate degree held by 2 percent men in engineering field. It is seen that respondents entering a new field as IT have high levels of education and skills.

d. Entry in labour market

IT is an upcoming field and there is great demand for professionals in this sector. Many companies recruit professionals directly from educational institutes. On examining the patterns of recruitment, it is seen that majority of people are recruited through campus interviews and through advertisement. Campus interviews were the main source of recruitment. 40 percent of respondents were recruited through campus interviews, whereas 33 percent were selected through advertisement. However, 43 percent of men were recruited through campus interviews, as compared to 38 percent women. It is also seen that 58 percent of women and 52 percent of men have been recruited as trainees. The respondents have had access to education facilities related to this sector earlier, hence they had a direct entry to this industry. The patterns of recruitment show that IT industry has its own entry criterion and selectively chooses its entrants. There is selective entry process when the industry regulates its entrants and puts them on the job.

e. Career Patterns

The locations/grade in the organisations are examined in relation to tenure of service. The requisite time required to reach a grade, is compared to the actual time taken to reach the current grade at which the respondent is located presently (The time required to reach a grade depending on the promotion policy of the company and thus varies from company to company). It is found that some people have reached the current grades in less than the stipulated time. Some people reached their current grades in the normal time timeframe whereas, some people have taken more than required time to reach their current posts. Thus, it is seen that some people have moved quickly and some are moving at a normal pace as desired. On the other hand, some people are moving slowly. Thus on the basis of grades attained and tenure of service, career patterns may be classified into different rates of career mobility – *slow*, *normal* and *fast*. Some respondents are fresh recruits and are classified as *new*.

It is seen that patterns of career movements vary significantly among men and women. It is found that 45 percent of total respondents are on normal track, 29 percent are on fast track and 23 percent are on slow track. A

noteworthy feature is that 32 percent women are on slow track as compared to 13 percent men. 37 percent of men are on fast track as compared to 20 percent of women.

f. Effect of human capital endowments on career mobility:

i. Educational qualifications

They play a significant role in affecting one's career mobility. The criterion for entry in the IT industry is a formal degree or a diploma in computers. However, it is seen that although these levels are considered comparable at entry point, there are significant differences in the performance levels of varying groups. IT is a newly growing sector and there is paucity of skilled labour in terms of formal degreeholders. The industry is gearing to meet its requirements by employing a wide range of IT trained personnel who have different levels of IT skills. However, it is seen that although the group of diploma holders is considered to be at par with trained professionals at entry level, the post labour market situation are very different. Top jobs are out of reach for diploma holders. It is seen that respondents who have higher education levels are on the faster track. Education advantages workers in the IT industry who have higher levels of qualifications. It is seen that people who have professional degrees like B.Tech., MBA, MCA are more on fast track, i.e., 61 percent respondents of fast track group are engineers as compared to 27 percent of slow track. All persons with a doctorate degree in engineering are on normal or fast track. 18 percent of slow track respondents have computer diplomas compared to 7 percent of fast track, whereas 33 percent of slow track people have MSc and others as compared to 14 percent of fast track respondents.

The chi-square test is used to test the homogeneity of different groups in terms of educational qualifications and career performance in the IT industry. It was found that the calculated $\chi^2 = 60.93$ is highly significant, the table χ^2 value being 13.08 at .01 level of significance. This indicated that in 99 percent of cases, there is probability of occurrence of heterogeneity between different educational groups and career performance. It was thus concluded that career performance is not independent of educational levels of respondents in the IT industry.

Apart from formal educational degrees, other educational characteristics also affect career mobility. It is seen that pre-service training, schooling, area of specialisation also affects one's career mobility. Pre-service training also has an impact on one's career mobility. It gives a starting edge to one's careers. 50 percent of fast track and 49 percent of normal track have had pre-service training as compared to 32 percent of slow track people. The majority of computer professionals, i.e., 84 percent of respondents are products of English medium schools. 85 percent of fast track, 85 percent of normal and 80 percent of slow track respondents have studied in English medium schools. Of the total respondents, 75 percent persons have studied in private schools. It is seen that 72 percent of fast track respondents have studied in private schools as compared to 68 percent of slow track. It is also seen that the majority of respondents has excelled academically and has passed in first division. Around 94 percent of respondents, 94 percent of fast track and 89 percent of slow track persons have passed in first division. For 83 percent of the respondents, the area of specialisation is related to their work. This may have a slight effect on one's career as it is seen that 82 percent of fast track and 89 percent of normal track have specialisation related to their present work as compared to only 74 percent of respondents on the slow track. It is observed that educational background of an individual has a significant impact on career mobility.

ii. Career mobility is directly influenced by administrative and managerial responsibilities and official trips. It is seen that education levels are significantly linked to nature of duties and responsibilities allotted on the job. Education qualifications are significantly linked to outstation tours as it is seen that those who are traveling very frequently have higher levels of education. Among people who travel very frequently, 85% have professional qualifications. Among the group with professional qualifications, 60% have managerial and administrative responsibilities and have joined as trainees. The job roles allotted at the workplace also depends upon levels of education as it is seen that the higher educated group have higher levels of duties and functions. Thus, it is seen that education levels are invariably linked to nature of job and opportunities provided at the workplace. Thus, groups with different educational qualifications have differential rates of career movements.

iii. Career mobility and human capital in terms of parents' education level –Human capital in terms of family background has an effect on one's career mobility. Parents education levels affect career prospects. Women fare better who have a better socioeconomic status, because educationally and economically well off families provide an atmosphere where women are motivated and socialized to undertake future occupational roles. It is seen that parents of fast track IT professionals have relatively high levels of education. For women, spouse' education has much impact on careers. However, for men there is a significant difference. Almost 25% of fast track and normal track men have spouse with professional degree as compared to none on slow track. Spouse of women have higher education levels in comparison to men.

SUMMARY AND CONCLUSIONS

It is observed that the respondents working in IT industry have high levels of skills. More than half the respondents have a formal degree related to computer education. It is seen that 38 percent of the respondents have entered the labour market through campus interviews. Also, it is observed that men and women have similar educational qualifications and have entered the labour market through the same entry modes. Men and women are thus comparable in terms of human capital at entry levels in the job market.

Educational qualifications are significant in career movements in the IT sector. Education affects an individual's careers in many ways more than one. Also it is seen that respondents who are moving on the fast track have higher levels of education. Education thus becomes one of the most important factors in determining career movements in the Information Technology sector. It is seen that although the group of diploma holders is considered to be at par with trained professionals at entry level, the post labour market entry situation are very different. The career patterns of diploma holders are different career as compared to respondents with formal degree holders.

High education levels lead to higher responsibilities and job roles; hence one has greater opportunities to accumulate human capital. It is significant in determining opportunities at the workplace. Respondents with higher education levels are located in jobs which offer them more scope to show their creativity and ability. Hence, they have faster career movements. It is also seen that parents education level one's career mobility in IT sector. Respondents who are on fast track career path have parents with high education levels. Various factors thus combined with education influence one's career movements.

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THE TECHNOLOGICAL TRANSFORMATION OF AN ORGANIZATION: AN STSM PERSPECTIVE

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FAILURES IN INFORMATION TECHNOLOGY INITIATIVES

There are many areas of an organization that can be improved. The daily operation of an organization is seen as a tangible area that can be easily improved through the use of technology. Organizations “are now aware that information technology is a great force for organizational change” (Eason, 1988, p. 4). Clearly, organizations do not consider the effects technology has on their personnel. Further, the organization’s decision makers do not always consider how the changes in technology will affect work practices and the environment. Organizations must realize that a change in information technology can and does cause changes within other areas of the organization. The key to effectiveness for the organization is to succeed in its change efforts in information technology. Eason (2001) states, “the bigger and more expensive the [information technology] project, the more likely it is to fail” (p. 324).

According to Eason (1988), 40% of all information technology interventions fail. Wayt Gibbs (1994) explains, “some three quarters of all large systems are ‘operating failures’ that either do not function as intended or are not used at all” (p. 87). Scheer and Habermann (2000) have found that “empirical surveys have shown that between half and two-thirds of information systems projects fail” (p. 57). Soh, Kien, and Tay-Yap (2000) add that billions of dollars have been spent on these ‘operating failures’. They explain that one reason for the expense is that “ERP implementation is more complex due to cross-module integration, data standardization, adoption of the underlying business model (‘best practices’), compressed implementation schedule, and the involvement of a large number of stakeholders” (p. 47). All of these authors from 1988 to 2000 show that the failure rates for information technology can range from 40 to 75 percent. From an organization’s perspective, this is a large waste of financial and human resources that results in not pursuing changes in their information technology.

THE NEED FOR SOCIO-TECHNICAL SYSTEMS METHODOLOGY FOR TRANSFORMATION

What organizations need is an IT change methodology that takes into account the needs of the organization and its relationships. This methodology should account for the organization’s internal and external environments, its work force, and its work practices. As organizations change technology, their environments, their people, and their work practices are affected (Appelbaum, 1997; Eason, 1988; Goodrum, Dorsey, & Schwen, 1994). Thus these authors argue organization change methodology should be based on socio-technical systems methodology.

The majority of organizations still only plan for the technical aspects of change. They do not see the advantage of planning a socio-technical system instead of just a technical system. Typically this shows that organizations have an inability in implementing integrated systems (Eason, 2001). Without considering how the technological change will affect both the employees of the organization and their jobs, the technological change planning team ignores any consequences the change will have on the culture of the organization. Using socio-technical systems methodology, an organization could design a change initiative that considers both the social aspects and the technical aspects of the organization (Appelbaum, 1997). It could also consider the environmental aspects that the change initiative will affect. Bijker (1995) explains that the technology in the organization is socially constructed and the social aspects of the organization are technologically constructed (p. 273). This relationship between technology and the social aspects of the organization is important to consider when implementing change.

IMPLICATIONS FOR CHANGE CONSULTANTS

The knowledge gained from this presentation may enable individuals to come to a deeper understanding of the influence and effects that socio-technical systems methodology has on information technology interventions. This knowledge will better enable education change and business change consultants to use socio-technical systems methodology when assisting organizations in change efforts. By focusing on the five components of socio-technical systems methodology, organizations will become more effective in change initiatives and increase the success rates for IT change implementations. This efficiency will lead to transformation within an organization.

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TEACHER CANDIDATES' PERCEPTIONS AND PERFORMANCE ABILITIES IN BASIC COMPUTER SKILLS USING SELECTED NATIONAL EDUCATIONAL TECHNOLOGY STANDARDS

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ABSTRACT

This study was conducted to determine if statistically significant differences existed between the perception and performance abilities of teacher candidates ($n=79$) at a southeastern university. Two instruments were used, the Basic Computer Skills Performance-Based Assessment instrument and the Basic Computer Skill Self-Reported Survey, measuring four of the ISTE NETS-S competency: NETS-S (1), Basic operation and concepts; NETS-S (3), Technology productivity tools; NETS-S (5), Technology research tools; and NETS-S (6), Technology problem-solving and decision-making tools, selected based on their alignment with the objectives of two nationally recognized instruments: The ISTE On-line Technology Assessment, and courseware objectives for preparation for the Internet and Computer Core Certification. Statistically significant differences between a teacher candidate's perception and performance were found in all sub-categories. Teacher candidates mean score indicated satisfactory performance in the Basic Operation and Concept category ($M=1.92$) and unsatisfactory performance in Technology Problem Solving and Decision-Making Tools category ($M=1.37$).

INTRODUCTION

Current educational reforms and legislation at the national, state, and local levels (International Society for Technology in Education, 2002; No Child Left Behind, 2002; and National Council for the Accreditation of Teacher Education, 2002) have incorporated standards requiring teachers and students to perform at high levels while they are engaged in challenging curriculum. As higher standards of accountability are implemented, clarity is needed regarding the technological abilities of various groups. Teachers are expected to help all K-12 students learn to value content, become confident in their ability to solve problems in specific content areas, and learn to reason and communicate from a content-specific discipline. Revolving around these goals is the recommendation that meaningful use of technology be incorporated in all areas (International Society for Technology in Education, 2000).

Statement of the Problem

To prepare teachers for the classroom in the 21st century, schools, departments and colleges of education must determine if the educational needs of all teacher-candidates are being met. As higher standards of accountability are implemented, teacher preparation programs must be able to show proof of the technological skills of teacher candidates. What is frequently available is the result of self-reported surveys, which provide indications of what teacher candidates perceive themselves as being capable of doing. Performance-based assessments may provide a clearer indication of the teacher candidates' technological ability in the use of computers.

Research Questions

1. What is the perceived level of basic computer skills of teacher candidates?
2. What is the actual level of basic computer skills of teacher candidates?
3. Is there a difference between teacher candidates' perceived basic computer skills and their actual skills?

Rationale for Study

The need for a performance-based assessment of teachers' technology skills, together with the awareness that limited measurements to assess the actual skills are currently present, provides the rationale for clearly identifying the basic computer skill levels of teacher candidates.

Participants

The participants were recruited through their methods classes in the teacher education program at a major southeastern university in Mississippi in the spring semester and first summer session of 2006. There were approximately 120 students enrolled in the methods classes during the spring semester and summer session of 2006, of which 79 undergraduate and graduate students volunteered. Of the 79 teacher candidate volunteers 22 (27.8%) were male and 57 (72.2%) were female. The demographic information on respondents was obtained using the Self-Reported survey. Two-thirds of the teacher candidates (63.3%) were in the secondary education concentration, 27.8% were in the elementary school concentration. Only a few of them were in the middle school concentration (8.9%) and the pre-school concentration (1.3%). The majority of the teacher candidates (72.2%) were female, and 27.8% were male. The teacher candidates also provided information about their experience with computer courses. Only 38.5% (30 of 79) of the participants had completed merely one computer class. Approximately half of them (50.6%) had completed two to three computer classes in high school, and about one-third (25 of 79) of them had completed computer non-credit workshops. Only 15.4% of the teacher candidates had not completed computer classes at the university. The remaining teacher candidates had completed between one and seven computer classes. The majority of them (85.9%) reported that they had more than six years of experience working with computers. When asked to give an overall rating of their computer ability, 10.1% rated themselves very high, and 86.0% rated themselves between average and above average. Only 3.8% considered themselves to have a low level of ability.

INSTRUMENTS

The two instruments used in this study were the Basic Computer Skills Performance-Based Assessment instrument and the Basic Computer Skills Self-Reported Survey. The Basic Computer Skills Performance-Based Assessment was developed first by the researcher and then the Basic Computer Skill Self-Reported Survey. Both assessment and survey were administered online. The items on the self-reported survey were directly aligned with the items on the performance-based assessment. A matrix was designed that aligned all components, the performance test items (BCSPBA), the self-reported survey (BCSSRS) items, objectives from the IC³ courseware, and objectives of ISTE On-line Technology Assessment with the NETS-S. The intent of the design was to present a clear indication of how well teacher candidates can actually perform tasks in relation to their perceived abilities with such skills. Attention was placed on basic computer skills for the foundational role they play in technology integration. Indicator A, "demonstrate introductory knowledge skills and understanding of concepts related to technology (as described in the ISTE National Educational Technology Standards for Students)" (ISTE-NETS, 2000; ISTE-NETS-T, 2001) of the NET-T provided the foundation for question selection. The limitation of standards criteria used in the study was based on the capability of the Sam2003[®] Assessment software program.

By design, the performance assessment and the self-reported survey primarily address four of the ISTE NETS-S. They are as follows: NETS-S (1), Basic operation and concepts; NETS-S (3), Technology productivity tools; NETS-S (5), Technology research tools; and NETS-S (6), Technology problem-solving and decision-making tools. The skills were selected based on their alignment with the objectives of two nationally recognized instruments. The ISTE On-line Technology Assessment was developed and used to help teachers' measure students' skills in using software applications and to measure student progress towards meeting the NETS-S, and the courseware.

Basic Computer Skills Performance-Based Assessment

The Basic Computer Skills Performance-Based Assessment instrument was developed by the researcher to assess the performance abilities of the participants. The assessment is a 50-item skill-based assessment divided in three categories related to basic computer skills. The categories and number of items per section include: Basic Operation and Concepts (7), Technology Productivity Tools (14), Technology Research Tools (12), and Technology Problem-Solving and Decision Making Tools (17). The skills were then matched with Sam2003[®] Assessment software skill items. The online environment for performance-based assessment is Sam2003[®] Assessment software, a product of Thomson Learning. The Sam2003[®] Assessment software was designed to assess skills of individuals by asking them to perform certain tasks in an interactive environment. The assessment addresses skills found in the Microsoft Windows XP, Microsoft Office Suite (Word, Excel, PowerPoint and Access), and Internet environments.

The participants demonstrate the skills in any number of ways. The mouse and keyboard movement of each participant is captured as part of the grading process in Sam2003[®] Assessment software Version 3.0 program, thus indicating if the task is completed correctly or incorrectly. Scoring of the Performance-Based Assessment was accomplished electronically through the Course Technology's Software design. As the participant completed the task, a correct, incorrect or skipped value was assigned to each task based on correct, incorrect and skipped standards pre-set by software designers (Sam2003[®] Assessment software). These choices were later converted to a consistent response pattern "perform" = 2, "can not perform" =1, Skipped =0 or missing values. Additionally, missing values were transposed using series means (consistent for both instruments) for the purposes of analysis and comparison of the responses between instruments. The scores for each of the categories (Basic Operation and Concepts; Technology Productivity Tools, Technology Research Tools, and Technology Problem-Solving and Decision-Making Tools) were assigned as follows: Can perform = 1.5 to 2; Can not perform = anything < 1.5.

Basic Computer Skills Self-Reported Survey

The Basic Computer Skills Self-Reported Survey was an online instrument designed to assess the perceived level of technological literacy of teacher candidates as it related to their actual basic computer skills. There are 63 numbered items on this assessment divided into three sections: computer task section, demographics and computer background. Item one asked the participant to enter a research number. The computer task section mirrored the skill categories on the performance-based assessment. The computer task section contained 50 items divided in categories based on the competency category in which they are found in the NETS-S. The categories and number of items per section include Basic Operation and Concepts (7), Technology Productivity Tools (14), Technology Research Tools (12), and Technology Problem-Solving and Decision Making Tools (17). Participants were asked to specify their self perceived ability to complete relevant computer tasks by selecting one of five Likert categories, The following categories were used: Definitely cannot, Possibly cannot, Unsure, Probably can or Definitely can. These choices were later recoded to a "yes" = 2, "no" =1. Additionally, missing values were transposed using series means (consistent for both instruments) for the purposes of analysis and comparison of the responses between instruments. Once the information was downloaded, the following values were assigned to each response: "Definitely cannot" =1, "Possibly cannot" =2, "Unsure" = 3, "Probably can" =4, or "Definitely can" =5. These choices were later recoded to a "yes", "no." Missing values were transposed using series means (consistent for both instruments) for the purposes of analysis and comparison of the responses between instruments. The tabulation of the score for the instrument would be based on the performance Mean. Mean scores implications for each of the four sub-categories (Basic Operation and Concepts; Technology Productivity Tools, Technology Research Tools, and Technology Problem-Solving and Decision-Making Tools) and on individual items were assigned as follows: Can perform = 1.5 to 2; Can not perform = anything < 1.5.

FINDINGS

Research Question No. 1 asked: What was the perceived level of basic computer skills of teacher candidates? For the perception evaluation, teacher candidates were asked to assess their ability to complete a skill. The ratings were collapsed into two categories, one category representing the students' perception that they could not perform the tasks, and the other represented the students' perception that they could perform the tasks. In order to classify the students into the "can perform" and the "cannot perform" categories, the mean scores on each of the sub-scales were used. Considering the mean results of this analysis, teacher candidates rated their performance in basic computer skills very high in all categories. The mean score in the Basic Operation and Concepts was the highest (M=1.99), and Technology Research Tools was the lowest (M=1.83). Thus, teacher candidates' perception was that they could perform skills in each sub-category on the BCSSRS. A further examination of the perceived abilities of teacher candidates using each skill on the self-reported survey (BCSSRS) revealed that in all 50 of the basic skills listed, the majority of the teacher candidates perceived themselves as having the ability to perform the required tasks. Only in two basic computer skills mean scores were below than 1.70. The skill that represented the most uncertainty among teacher candidates was, "When creating a PowerPoint presentation, can you add a placeholder to a slide?" Twenty-eight (28) of the respondents provided an unsure response about completing the skill.

Research Question No. 2 asked: What was the actual level of basic computer skills of teacher candidates? The actual level of basic computer skills of the teacher candidates was derived from data generated when teacher candidates attempted to perform task on a performance-based assessment (BCSPBA). Teacher candidates were asked to perform 50 skill tasks matching the description of those found on the self-reported survey (BCSSRS). For the actual performance analysis, the students' skill assessment was placed into two categories: one category

representing the students' inability to perform the tasks, and the other category representing the students' ability to perform the tasks. In order to classify the students into the "can perform" and the "can not perform" categories for each of the sub-categories of the survey, the mean scores on each of the individual sub-categories were used. Teacher candidates Perform the skills in the "Basic Operation and Concepts" ($M=1.92$ $SD=.267$), and "Technology Productivity Tools" ($M=1.76$ $SD=.430$) categories at satisfactory levels. However, unsatisfactory levels of completion were recorded for the two remaining categories; Technology Research Tools ($M=1.42$, $SD=.496$), and Technology Problem-Solving and Decision Making Tools ($M=1.37$, $SD=.485$) categories. To identify the specific skill performed by teacher candidates on the performance-based assessment, descriptive statistics frequencies were used. Results revealed three skills which all teacher candidates performed correctly at 100%. There were 37 additional skills where teacher candidates mean scores were above 1.5. Approximately, one fifth (20%) of the skills were performed at an unsatisfactory level. Teacher candidates' performance was most notably weak on skills that involved presentation, spreadsheet applications, and the Internet.

Research Question No. 3 asked: Is there a difference between teacher candidates' perceived computer skills and their actual performance-based skills? The students' responses on the survey regarding their perceptions of their computer technology skills were compared to their actual performance of those skills, which served to establish their true computer technology ability. An examination of the "Basic Operation and Concepts" category shows that 23 of the teacher candidates who believed that they could perform the skills did not perform the skills, and 50 of the students who believed that they could perform the tasks, did actually perform the tasks. Within the "Technology Productivity Tools" category, five of the students who believed that they could not perform the skills, actually did perform the skills, and 33 of the students who believed that they could perform the skills, did not perform the skills. In addition, 27 of the students who believed that they could perform the skills did perform the skills. Within the "Technology Research Tools" category, 32 of the students who believed that they could perform the skills did not perform and 46 of the teacher candidates, who believed they could not perform the skills, did not perform the skills. In addition, only one student who believed that he could perform the skills, did perform the skills. Within the "Technology Problem-Solving and Decision-Making Tools" category, 27 of the students who believed that they could perform the skills actually did not perform the skills, and, all 50 of the students who believed that they could not perform the tasks, did not perform the tasks. The "Technology Productivity Tools," the "Technology Research Tools," and the "Technology Problem-Solving and Decision-Making Tools" categories showed the greatest degree of incongruence between the students' perceptions of their basic computer skills and their actual performing ability. In order to further assess differences in perception and performance abilities of students' basic computer ability, a paired *t*-test analysis was computed. Results of the analysis revealed significant differences in each of the paired sub-categories. A comparison was made using frequencies and percentages to determine differences between the teacher candidates' perceived results and the candidates' actual performance abilities considering specific skills within the various sub-groups, the teacher candidates' perceptions were far greater than their actual ability levels in 38 of the 50 skills teacher candidates over-rated their abilities to complete the skills. In only eight of the skill categories, the same or approximately the same number of teacher candidates displayed an actual basic computer ability that was matched with their perceived ability. In four of the 50 skills, the number of teacher candidates who actually performed the skill exceeded their perceived ability ratings.

CONCLUSIONS

Several implications and conclusions emerged from this study. An overarching argument is the importance of teacher candidates possessing basic computer skills, which are fundamental to the use of computers and other technologies in the classroom. The major finding of this study was that teacher candidates have a higher perception than performance ability in basic computer skills. Findings of this study confirmed what other research has reported previously (Marvin, 2004). This study also validated Bandura's (1994) claim that in many instances, individuals' perceptions of their personal capabilities to initiate and successfully perform specified tasks at designated levels have been in conflict with their actual performance abilities.

Considering the descriptive findings of this study, teacher candidates overrated their abilities in 26 of 50 (52%) skills listed on the assessments. This overrating of basic computer skills by teacher candidates could lead to inaccurate assessments of teacher candidates' abilities, thus resulting in less use of technology in the classroom. These implications support previously recognized needs to better prepare teacher candidates on the use of technology. These concerns that have been highlighted by such legislation (NCLB, 2002) and educational organizations (ISTE, 2000, PT3, 2002) are valid. Conversely, a high self-efficacy may substantiate why teachers who were at best "Somewhat" prepared to use technology in their teaching are willing to assign students work with

productivity tools (U.S.DOE, NCES, 2000). Thus, such perceptions can possibly increase teachers' actual use of such skills in the classroom learning environment.

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EDUCATION IN RURAL MISSISSIPPI SCHOOL DISTRICTS

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ABSTRACT

This study is the result of surveys mailed to selected superintendents of rural school districts in Mississippi between September 25 and October 24, 2006. Surveys were sent to fifty-three superintendents. Thirty-three superintendents responded. The study examines the challenges and concerns educational administrators face and have on a daily basis in these school districts. Specific concerns examined are funding, consolidation, technology, enrollment, homelessness, ESL students and percentages of high school graduates who pursue higher education and technical studies. Additionally, this study examines whether the schools in the selected school districts are successfully meeting accreditation levels 3-5 set by the state.

INTRODUCTION

Historically and nationwide, rural school districts have had and still have difficulties in trying to provide a quality education for students in our public schools. According to Arnold, Newman, Gaddy and Dean (2005):

Like all schools, rural schools face many pressures. Increasingly diverse student backgrounds, learning styles, and needs; new federal and state accountability requirements; and debates about the allocation and availability of education funding are challenges in every U.S. community. But rural schools face a unique set of challenges, largely due to their geographic isolation. Although some rural schools have successfully met these challenges, many still struggle. (p. 1)

In a report by Deborah Verstegen (1991), "Fifty-one percent of all schools in the U.S. are located in small towns or rural areas; nearly 40% of students nationwide attend either small-town or rural schools" (§ 4).

The State of Mississippi is mostly rural. Likewise, most of the student populations attend schools in very small towns or in rural settings. The question is raised regarding the welfare of rural schools in Mississippi. Specifically, the questions is, what are some of the challenges they face today, and do these challenges closely mirror those of rural schools nationwide?

FINDINGS

According to selected superintendents in rural Mississippi school districts (SSIRMD's), the number one challenge facing them today is funding (from both the state and local levels), especially the Mississippi Adequate Education Program (MAEP). Adequate funding is needed for new construction because of student growth in areas that have become outstanding bedroom communities of some thriving towns. Additionally, funding is needed for the renovation of aging school facilities built in the fifties and sixties. Other challenges include maintaining funds for student transportation due to the instability of fuel prices.

Arnold, Newman, Gaddy and Dean (2005) also maintain that "The need to attract and retain highly qualified teachers is especially pronounced in rural schools" (p. 1). Therefore, funding or the inadequacy of funding, definitely impacts staff. SSIRMD's stated that meeting the mandates of No Child Left Behind is indeed another challenge - the challenge of trying to recruit highly qualified teachers as well as trying to retain a large cadre of quality ones.

The lack of adequate funding has caused other options to be put into place. The SSIRMDs stated that distance learning has become a vital part of the rural education scene. Eighteen districts are utilizing distance learning for the following key classes: Spanish I and II, Latin, French I and II. AP English, calculus, trigonometry, physics, and Biology I along with Accounting I are being offered through distance learning. Not surprisingly, other courses such as Mississippi Writers, psychology, finance, sign language and earth science are being delivered via distance learning in a few of the rural school districts. Two school districts utilize the Mississippi Virtual High School Program.

Some of the rural school districts surveyed, still face the challenge of trying to find unique ways to motivate low-motivated students and to get more parental involvement. Limited parental involvement could be due to the long distance between home and school.

What about school consolidation in the rural setting? Of thirty-three responding rural districts, only 11 schools have been consolidated in the past ten years. This would include five schools in one district.

Have English Language Learners (ELLs) and homeless students impacted these districts? In the northwestern and southwestern regions of the state, there has been very little impact, while there has been some increase in class sizes in one south school district (Pine Belt Region). However, there are some challenges in the central rural districts in terms of ELL students. One school district saw a 20% increase of ELL's during the 2006-2007 school term. Academic achievement has been a challenge because of increases in class sizes and the lack of ELL staffing. Another notable view was that the ELLs have significant reading problems at the middle and high school levels as well as their lack of completing school assignments.

Technology is another vital key to providing quality educational opportunities for students in the rural setting (use and support). On a scale of one to three (three being the highest), 45% of the responders rated the use of technology in their school district as three, while 55% rated it a two. Forty-percent rated technical support as a three, and 51% rated technical support as a two. Only one rural district rated technical support as a one. Again finance certainly is a key factor in terms of technology availability and technical support.

In the selected rural school districts, high school enrollments ranged from 1,725 to 218. The most frequent high school populations ranged from 400 to 575 students. Only two school districts had high school enrollments of a little over 200. As a side bar, enrollment seemed to have declined at the secondary level in 9 school districts and in 5 at the elementary level. In one southwest rural district, the student enrollment grew by 32% over the past 6 years. In two rural school districts, student enrollment increased due to Hurricane Katrina.

Roughly, 53% of the responding districts' graduates go on to college and technical schools. How did students in those districts achieve academically? According to information obtained from the Mississippi Department of Education (2006), a total of 58 schools in the state (6% of 880) were in school improvement. In the school districts to which surveys were mailed, only 14 schools were in school improvement (less than 1% of 880 schools). In spite of inadequate funding and other inadequate resources, it appeared that the rural schools were doing well in terms of student achievement.

In the Pine Belt Region (central south) of the State, there had been no school consolidation during the last ten years. Challenges for administrators were low test scores, adequate funding, some growing populations in certain communities, building and construction costs. Homeless and ELLs had little impact. They rated the use of technology and technology support a 3 each. The percentage of high school graduates going on to college and technical schools was 60%.

Five schools were consolidated in the southeast region. The administrators' challenges were state funding, dealing with students of special needs, community support, and upgrading facilities. There was minimal impact from homeless and ELL students. Technology use and support were rated 2 each. Sixty-four percent of high school students went on to college and technical schools.

No schools had been consolidated in the southwest region. Funding and a low tax base were challenges. Declining enrollments had occurred at both the secondary and elementary levels. However, one district saw a 32% increase in enrollment. Homeless and ELLs had a minimal impact. Ratings 2s were given to the support and use of technology. Sixty percent of their graduates attended college and technical schools.

The northeast region had no school consolidation, but administrators identified funding, parental involvement, transportation and overcrowding (students) as challenges. Enrollment declined at the secondary and elementary levels. This was the region where one district had experienced ELL growth. Only 35% of graduates attended college and technical schools. Technology use received an average rating of 2.4 and its support received a rating of 2.6.

Challenges for the central region districts were inadequate funding for maintenance, transportation, construction and staffing. Four schools had been consolidated during the past ten years. In one school district, it had been a challenge to maintain high student achievement due to homeless and ELL students. One school district had experienced an increase of 20% of ELL students. Technology support and technology use each had been rated 2.5. Fifty-two percent of the graduates went to college and technical schools.

Two schools were consolidated in the northwest region and enrollment had declined at the elementary and secondary levels in four districts. Recruiting and retaining highly qualified teachers as well adequate funding were challenges along with improving student achievement. There was very little impact from homeless and ELL students. The use of technology and the support of it received ratings of 2 each. Forty-seven percent of the graduates attended college and technical school.

CONCLUSION

True to tradition, as their counterparts nation wide, rural schools in Mississippi are still being challenged by the issues of inadequate funding which greatly impacts facility construction, facility renovations, transportation costs, and district maintenance costs as a whole. Recruiting and retaining highly qualified teachers is another challenge for some. Therefore, distance learning is being utilized quite a bit, although technology use and support still faces challenges. There has not been a lot of school consolidation over the past ten years. Some administrators continued to wrestle with the impacts of homeless and ELL students and some of the mandates of No Child Left Behind.

However, in spite of the challenges and concerns, there are some successes in terms of meeting the State's accreditation levels 3 and above. Additionally, it was very encouraging to see the Mississippi Adequate Education Program (State funding) fully funded this past Legislative session (2008). This was a very key step to ensure that all students, rural and urban, get the high quality of education they need and deserve. The nation, the state and all communities will be better beneficiaries.

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AN EXPLORATORY STUDY OF RIGOR AND TEACHING STRATEGIES IN HIGH SCHOOLS: COMPARING TEACHER BELIEFS AND PRACTICES IN CURRICULUM, INSTRUCTION, AND ASSESSMENT

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ABSTRACT

High school reform efforts in American public schools are intended to produce graduates able to compete with their peers from across the globe. Reform efforts have included local, state, and federal initiatives along with incentives from private sources to help schools improve. Rigorous instruction for all students requires understanding the components of a rigorous high school class and then duplicating those components in all public school classrooms. Quality schooling is dependent on independent classroom level quality. This study explores the gap in teacher beliefs and practices in the areas of curriculum, instruction, and assessment.

INTRODUCTION

This study was designed to explore the beliefs and practices of high school teachers in the areas of curriculum, instruction, and assessment to determine if teacher factors lead to rigorous classroom practice. Teacher beliefs and practices directly impact the experiences students have in the classroom. Professional development experiences, subject taught, and years of experience are factors that may determine differences in practices. Current practices in secondary education are being examined to produce the type of graduates required in the next generation's world of work and education. All graduates will need a strong basis in the core academic areas, will require the ability to apply and synthesize information across disciplines, and will need to be able to solve real world problems. High school reform efforts to increase academic rigor for all students is at the center of discussions with educators, policy makers, and business leaders.

The International Baccalaureate Organization (IBO) is internationally recognized for its academically rigorous and relevant programs. The researcher administered the NASSP Breaking Ranks II: Strategies for Leading High School reform survey to compare teacher beliefs and practices regarding factors of curriculum, instruction, and assessment among groups using a one-way ANOVA. The groups compared were IB and non-IB trained teachers, core and non-core teachers, and experienced and novice teachers. A factorial ANOVA was completed to determine if any groups working together resulted in differences in reported beliefs and practices among teacher respondents.

Results of the data analysis showed core teachers report a significantly higher ranking of the importance of the curriculum, instruction, and assessment strategies than non-core teachers. Years of experience and IB training demonstrated no differences in teacher reporting in their perceived importance of the curriculum, instruction, and assessment strategies. Teacher experience and subject taught did not impact teacher responses to their usage of instructional strategies. IB trained teachers did report a weak difference in the actual use of strategies. None of the factors, subject taught, years of experience, or IB training, when analyzed together, made any impact on teacher self-reporting of beliefs or practices. The weak difference in reported actual use of rigorous teaching strategies suggests further study may need to investigate if IB training and experience teaching in the IB may produce a significant difference in classroom practice.

Nature of the Problem

Are American public school graduates academically prepared for what the future will require of them? A cry for reform and improvement in American public schooling has become a cause for people of influence in this country. Bill Daggett (2005), a leading researcher in high school reform, says public schools are tasked with preparing students for jobs that do not currently exist. He believes traditional schooling as we have known it will not be enough to produce citizens ready for the future world. Thomas L. Friedman (2005), Pulitzer Prize winning author

of *The World is Flat*, calls the state of education in America today “the quiet crisis” (p. 323). He purports that the decline in American education is a result of decentralized schools and curriculum standards, low student ambition, a decline in science and mathematics education, a lack of quality teachers, and a lack of funding for schools and innovation.

Raising academic expectations for students has emerged as a common factor among those calling for high school reform (Daggett, 2005; Mathews, 2005; Reising, 2000; and Taggart, 2005). Repeatedly, the concept of academic rigor for all students has been described as a necessary component in reforming public high schools in the United States. High school reform efforts converge on the need for a rigorous and relevant instructional program for all students (Daggett & McNulty, 2005). A study for *The Concord Review* in 2002 showed “although 95% of teachers surveyed believed that research papers were ‘important’ or ‘very important’ ... 62% never assigned a 3,000 word nonfiction paper” (Fitzhugh, 2006, p. 44). This study suggests a gap between teacher beliefs and teacher practices for student performance. A recent survey of high school graduates showed “two-thirds of recent graduates who went on to college and three-quarters of those who went straight to work say that if they could do high school over again, they would apply themselves more and take harder courses” (Achieve, Inc., 2006, p.6). The call for reform does not allow current practices in public high schools to continue as status quo, it requires students to have a more academically rigorous high school experience including taking more rigorous courses.

Purpose

The purpose of this study was to explore the beliefs and practices of high school teachers in the areas of curriculum, instruction, and assessment. Data were gathered from a comparison of International Baccalaureate (IB) and non-IB teachers’ responses on a Survey of Strategies for Leading High School Reform (National Association of Secondary School Principals [NASSP], 2004). The challenge of providing a rigorous experience for all students according to the nationally accepted standards of rigorous academics and the needs of individual students is one that requires common agreement on rigorous and relevant classroom activities and instructional practices. As the IB Programme is internationally recognized as an academically rigorous program (Burris, Welner, Wiley, & Murphy, 2007), it was used as a point of comparison for teacher reporting on the perceived importance of and actual practice of reform strategies under the theme curriculum, instruction, and assessment. Teachers rated their perceived importance and actual practice of items related to curriculum, instruction, and assessment. As IB is accepted as a rigorous academic program, the researcher compared the responses of IB and non-IB trained teachers to determine if teachers that receive the training report more of a difference in their beliefs and practices than teachers that have not received the training. The goal of this research was to examine teachers’ perceptions of importance and use of practices aimed at increasing rigor in curriculum, instruction, and assessment.

Hypotheses and Research Question

H₀₁: There is no difference in the mean scores of reported importance related to curriculum, instruction, and assessment between IB trained teachers and non-IB trained teachers as measured by Section III of the Breaking Ranks Survey.

H₀₂: There is no difference in the mean scores of reported actual use of strategies related to curriculum, instruction, and assessment between IB trained teachers and non-IB trained teachers as measured by Section III of the Breaking Ranks Survey.

H₀₃: There is no difference in the mean scores of reported importance related to curriculum, instruction, and assessment between experienced teachers and novice teachers as measured by Section III of the Breaking Ranks Survey.

H₀₄: There is no difference in the mean scores of reported actual use of strategies related to curriculum, instruction, and assessment between experienced teachers and novice teachers as measured by Section III of the Breaking Ranks Survey.

H₀₅: There is no difference in the mean scores of reported importance related to curriculum, instruction, and assessment between core teachers and non-core teachers as measured by Section III of the Breaking Ranks Survey.

H₀₆: There is no difference in the mean scores of reported actual use of strategies related to curriculum, instruction, and assessment between core teachers and non-core trained teachers as measured by Section III of the Breaking Ranks Survey.

Research Question: What differences exist between teacher reported importance of rigorous teaching strategies and reported actual use of rigorous teaching strategies when comparing IB and non-IB trained teachers, core and non-core teachers, and experienced and novice teachers?

Research Design and Methodology

This survey study was causal-comparative, utilizing a posttest only design (Gall et al 2003). Causal-comparative was chosen for this study because the independent variables (IV) in this study, IB training, teaching subject, and teaching experience, were groupings that already existed for the respondents, not assigned by the researcher.

Breaking Ranks II: Strategies for Leading High School Reform (NASSP, 2004) survey was adapted for this study. The survey gathers teacher self-reporting of importance and actual use of NASSP Breaking Ranks II suggestions for important factors of rigorous, relevant classrooms and schools when reforming traditional high schools. As each survey item had five answer choices, Cronbach's alpha was used to determine the internal consistency of the survey. The calculation for this study was $\alpha=.8980$, deeming this survey reliable.

Each subject in this causal-comparative study received a total score for all scale items in the two dependent variables studied, reported importance of rigorous teaching strategies and reported actual use of rigorous teaching strategies. Each respondent was then assigned to three groups based on their responses to the demographic questions: IB trained, subject taught, and years of experience. The grouping of respondents to investigate possible reasons for differences in reported beliefs and practices was the basis for using the causal-comparative design. The researcher calculated the mean (M) and the standard deviation (SD) for the six IV-groups, IB, non-IB, core, non-core, experienced, and novice. A one-way analysis of variance (ANOVA) was conducted on the total score means to determine if a difference existed between the control (non-IB) and experimental (IB) groups in reported importance of rigorous teaching strategies and reported actual use of rigorous teaching strategies. The data were used to address H_{01} and H_{02} , using $\alpha = .05$ and significance less than .05 (Gall et al, 2003). One-way ANOVA was used to determine differences between experienced and novice groups in reported importance and reported actual use of strategies, as well as core and non-core groups in reported importance and reported use of strategies to address H_{03} , H_{04} , H_{05} , and H_{06} respectively.

In order to answer the research question, a factorial ANOVA was conducted using $\alpha = .05$ and significance less than .05 to determine any interrelation between groupings of IB, non-IB, core, non-core, experienced, and novice teachers.

Results

The statistical analysis for the six hypotheses used the same functions for each independent variable. the mean (M) and standard deviation (SD) were calculated on each independent variable (IV) group for each dependent variable (DV), reported importance of rigorous teaching strategies and reported actual use of rigorous teaching strategies. A one-way ANOVA was then calculated to determine within and between group differences for each independent variable. To determine significance in the difference in means for each group in the IV, $p<.05$ was used. Each hypothesis was addressed separately to determine the significance of each IV for the factors of importance and actual use.

The hypotheses tested in this study compared mean scores for each IV group for two different dependent variables (DV), importance of and actual use of curriculum, instruction, and assessment strategies. The six hypotheses compared each IV group separately using a one-way ANOVA to compare means.

Upon completion of the data analysis for this study, five of the hypotheses are accepted. For teacher self-reported importance of curriculum, instruction, and assessment strategies, no significant difference was found between the means scores of IB trained teachers ($M=25.3902$) and non-IB teachers ($M=24.1154$) or between the mean scores of experienced teachers ($M=25.1034$) and novice teachers ($M=23.5556$). The reported actual use of instructional strategies showed no significant differences in the mean scores in the responses for the variables IB teachers ($M=104.3171$) and non-IB teachers ($M=100.2692$), experienced teachers ($M=103.1207$) and novice teachers ($M=100.3333$), or core teachers ($M=103.7750$) and non-core teachers ($M=101.2222$). Therefore, null hypotheses H_{01} , H_{02} , H_{03} , H_{04} , and H_{06} are accepted.

The mean scores for core teachers ($M=26.1000$) did show a significant difference for teacher self-reported importance of curriculum, instruction, and assessment strategies from non-core teachers ($M=23.1111$), with $p=.037$. Therefore, H_{05} , there is no difference in the mean scores of reported importance related to curriculum, instruction, and assessment between core teachers and non-core teachers as measured by Section III of the Breaking Ranks Survey, is rejected. These findings suggest core teachers rate the importance of curriculum, instruction, and assessment strategies higher than their non-core peers. This means the only factor measured in this study that

impacts teacher responses to these curriculum, instruction, and assessment items for importance is teaching a core course.

The researcher found that although the reported actual use of strategies showed no significant difference for IB and non-IB teachers, a weak difference did exist, with $p=.089$ using a one-way ANOVA. Further analysis also resulted in a weak significance in the difference of IB and non-IB teacher responses for the reported actual use of strategies, with $p=.070$ on the factorial ANOVA. Combining IB training with subject taught and experience levels produced no significant difference in scores ($p=.284$).

Upon completion of the data analysis for this study, the answer to the research question is no difference exists between teacher reported importance of rigorous teaching strategies and reported actual use of rigorous teaching strategies when comparing IB and non-IB trained teachers, core and non-core teachers, and experienced and novice teachers.

Conclusions

Legislators, business leaders, educators, and the American public are calling for increased rigor in public high schools (Daggett, 2005 & Olson, 2005). Finding the only significant difference in this study to be in teacher beliefs of core and non-core subject teachers is of interest to educators, administrators, policy makers, business leaders, parents, and students. Respondents that are English, math, science, and social studies teachers report they value the importance of the curriculum, instruction, and assessment strategies recognized by NASSP Breaking Ranks II researchers to be important in reformed high schools valuing academically rigorous classrooms for all students significantly more than their non-core peers (NASSP, 2004). These same respondents, however, did not respond differently in their actual use of these same strategies as opposed to their non-core peers.

Bill Daggett (2005) has called for a different academic experience for students to prepare them for 21st century skills. Federal, state, and local legislators from around the country have enacted laws and policies that would change the educational experiences for students by increasing academic course requirements, requiring additional foreign language courses, and requiring additional science courses to graduate (Olson, 2005). IBO has published the IB "Programme Standards and Practices" (2005) to ensure a quality standard across the globe for IB authorized classes. IB teacher respondents in this study did not show a significant difference in their reporting of the actual use of curriculum, instruction, and assessment strategies; however, they did show a weak difference. The professional development provided by IBO stresses classroom teacher practices in the areas of curriculum, instruction, and assessment. These findings are similar to those in a 2006 study on teacher beliefs and practices, which showed practices can be changed through professional development, but beliefs are not as easy to change (Levin & Wadmany, 2006). This study showed no difference in the reporting of teacher beliefs regarding rigorous teaching strategies, even when combining the factors of subject taught and IB training.

Professional development sessions targeting specific programs are intended to change the practices of classroom teachers. Brinkerhoff (2006) found teachers involved in long-term professional development in the topic of technology integration self-reported little change in their own classroom practices, yet interviews detailing classroom practices revealed they had indeed changed their practices by increasing the use of technology for instruction. The results in this study demonstrating IB training to show a weak difference in reported practice yet no difference in beliefs for respondents is consistent with Brinkerhoff's research, self-reporting of teachers showed no significant difference in their practices. Targeted professional development did not change teacher self-reported beliefs or practices.

Teacher beliefs are thought to develop over time following cycles of practice, experience, and reflection (Bannink & van Dam, 2007). Although professional development and training can expand teacher knowledge base, their core beliefs expand more than they change (Levin & Wadmany, 2006). A 2006 study of medical school faculty members showed the types of training respondents received did not create differences in beliefs (Williams & Klamen, 2006). The beliefs teachers have regarding strategies of curriculum, instruction, and assessment are not easily changed and appear to be a function of subject taught rather than professional learning.

Implications

This study has implications for the effectiveness of professional development in changing classroom practices. A noted limitation of this study is teacher self-reporting of their own practice. Since core teachers reported a difference in beliefs from non-core teachers yet did not report a difference in practice, another question surfaces. If core teachers have a stronger belief in supporting rigorous classroom practices, why don't their self-reported practices reflect a difference as well? Do we know better than we do?

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A METHOD FOR MAMMOGRAPHIC DATA ANALYSIS BASED ON BAYESIAN NETWORKS

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ABSTRACT

The interpretation of a mammogram and decisions based on it involve reasoning and management of uncertainty. The wide variation of training and practice among radiologists results in significant variability in screening performance. We have created a Bayesian belief network to integrate the findings on a mammogram, based on the Breast Imaging Reporting and Data System (BI-RADS). We obtain our prior probability from NCI program that involves 6 risk factors. The model's performance was evaluated with 43 cases drawn from Imam Khomeini Hospital files that included clinical data, the mammographic findings and the expert mammographer's diagnosis. This system was compatible with the expert opinion in 93% of cases. Our experience in Iran suggests that this model may help reduce variability and also can help the radiologist interpreting the mammographic images in decision making.

INTRODUCTION

Worldwide, breast cancer is the fifth most common cause of cancer death (after lung cancer, stomach cancer, liver cancer, and colon cancer). In 2005, breast cancer caused 502,000 deaths (7% of cancer deaths; almost 1% of all deaths) worldwide. Among women worldwide, breast cancer is the most common cause of cancer death (World Health Organization, 2006).

In Iran, breast cancer is the most common cancer among women. The latest study conducted in 2005-06 indicated that breast cancer allocates 24.41% of all sites to itself (National Cancer Registration Report, 2006). About 31.6% of women in Tehran have chance of developing this cancer (report of Tehran cancer statistics, 2002).

Mammography has been shown to be effective in detecting breast cancer before it becomes clinically evident (Baker, 1982). Consequently, routine screening with mammography is now generally accepted as a valuable tool for decreasing mortality from breast cancer. Overall accuracy of mammographic interpretation, in terms of sensitivity and specificity, is a problem because of variability in the training and experience of radiologists interpreting the images (Sickles, 2002). The American College of Radiology (ACR) developed BI-RADS, a lexicon of mammogram findings (or "features") and the distinctions that describe them (BI-RADS, 1998). The developers of BI-RADS tried to identify those features of mammograms that are most useful for discriminating diseases of the breast. To accomplish this, they performed statistical analysis of the terms ("descriptors") used to describe imaging findings to determine which descriptors best discriminate between a benign or malignant diagnosis (Swets, 1991).

Our goal has been to build a model that represents these probabilistic relationships among BI-RADS findings and includes other pertinent information (patient risk factors) to standardize how combinations of BI-RADS findings are interpreted. We explored the use of Bayesian networks as a diagnostic decision aid in mammography.

Problem Overview

Mammography is an important tool in early detection of breast cancer. Indeterminate mammographic findings often challenge the physician to distinguish between a malignant or benign condition. Successful diagnosis depends on the ability of a physician to recognize and evaluate a mammographic abnormality, as well as integrate the information from multiple clinical aspects (e.g., risk factors) to determine the likelihood of breast cancer (Feig, 1992).

Risk Factors

Anything that increases the chance of developing a disease is called a risk factor. Breast cancer incidence rates increase with age. Breast cancer is uncommon for a woman less than age 40, though this group shows the fastest rate of increase of the disease. Positive diagnoses occur with greater frequency in post-menopausal women. An early menarche, with its associated early onset of regular menstrual cycles, is another accepted risk factor. A late child bearing age, that is giving birth after age 30 or never giving birth, raises the risk. Women with a first-degree relative who has had breast cancer double their chances of developing breast cancer (Kahn, 1995). The States for risk factors are shown in table 1.

Table 1. States of Risk Factors

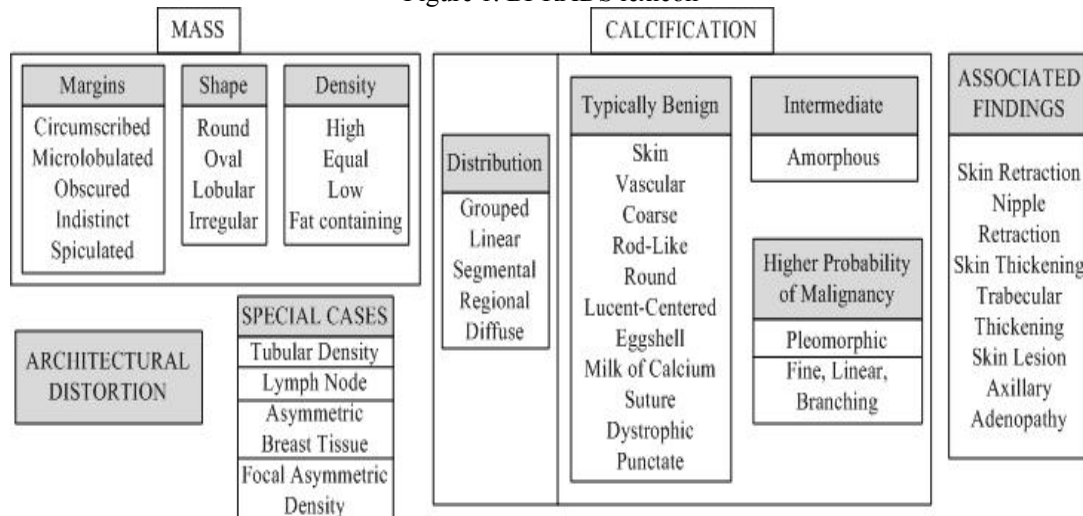
Node	States
Age	35, ..., 85
Age at Menarche (years)	<12, 12-13, ≥14
Age at First Live Birth (years)	No births, <20, 20-24, 25-29, ≥30
Number of First-Degree Relatives with Breast Cancer	0, 1, >1
Previous Biopsy	yes, no
Number of Breast Biopsy	1, >1
At Least One Breast Biopsy with Atypical Hyperplasia	yes, no

We used a risk assessment tool to obtain prior probability. The Risk factors for this tool are explained above. The Breast Cancer Risk Assessment Tool is an interactive tool designed by scientists at the National Cancer Institute (NCI) and the National Surgical Adjuvant Breast and Bowel Project (NSABP) to estimate a woman's risk of developing invasive breast cancer ("Breast Cancer Risk Assessment Tool", 2008).

Mammographic Findings

We compiled a list of findings (abnormalities) observed on mammography from the BI-RADS descriptors (fig.1). We incorporated 38 of the BI-RADS descriptors into the model. We excluded five descriptors (skin thickening, trabecular thickening, nipple retraction, skin retraction, and asymmetric breast tissue) because they are rare, late, or non-contributory findings on screening mammography, and because they would have increased the complexity of the model without significantly improving its diagnostic effectiveness (Burnside, 2000). We also incorporated "Number of Calcifications in Cluster", "Heterogeneity in Size and Shape of Clusters" and "Multiple Clustered Calcifications" into our model. These mammographic findings are useful in diagnosis of disease.

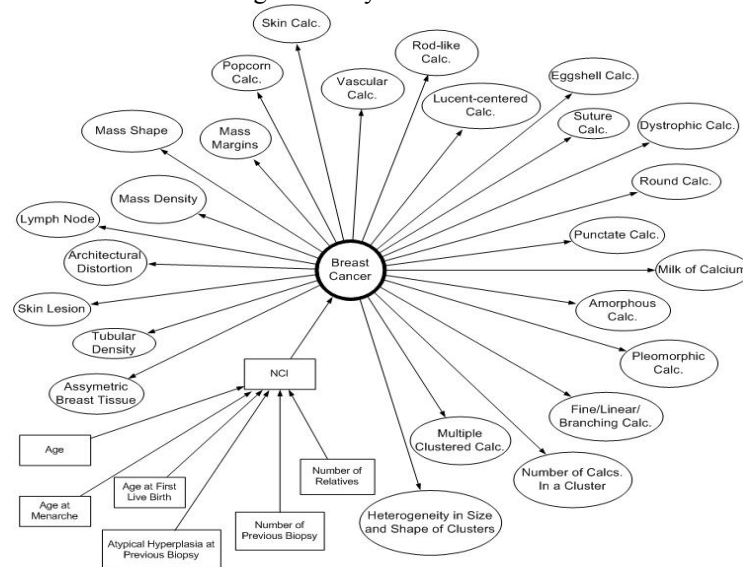
Figure 1. BI-RADS lexicon



Model Structure

Bayesian networks—also called belief networks or causal probabilistic networks—use probability theory as a formalism for reasoning under conditions of uncertainty (Heckerman, 1995). The Bayesian network is a graphical model that efficiently encodes the joint probability distribution (physical or Bayesian) for a large set of variables. In a Bayesian network, uncertain variables that affect the probability of disease are represented as “nodes” (Fig. 2), which are data structures that store probabilities and can be understood by both humans and computers. In our system, the Breast Cancer (or root) node represents two states of malignant and benign. This node stores the prior probabilities of malignancy determined by specific risk. Each of the remaining nodes in the network represents possible findings on a mammogram and contains a conditional probability that relates the findings to the Breast Cancer node. We made probability assessments from the medical literature and expert opinion. The structure of the model is composed of directional arcs (Fig. 2) that encode the conditional dependence and independence relationships among the variables. The absence of an arc represents conditional independence. Each arc implies an influence (or in some cases, a causal link) between the nodes joined by that arc.

Figure 2. Bayesian Network



To construct our computer model and perform inference, we construct a decision support system. The model is structured on the assumption that all the BI-RADS descriptors and three extra nodes are children of the Breast Cancer node. We modeled the calcification descriptors as conditionally independent manifestations of disease. The distribution descriptors of each type of calcification are the mutually exclusive states of the corresponding calcification nodes. If calcifications are described, distribution choices are available (e.g., fine or linear, clustered, segmental, regional, diffuse, or scattered) in the conditional probability table of each calcification node. The structure of our model reflects the hierarchic structure of the BI-RADS lexicon (Fig. 1): if a mass is the finding of interest, the underlying mass descriptors are available to further modify the finding of “mass.” The descriptors themselves (e.g., in the case of the shape of the mass, the descriptors are “round,” “oval,” “lobular,” or “irregular”) are stored in the conditional probability table with an associated probability distribution. The states of the Number of Calcifications in Cluster node was “<5” and “≥5”, and the states of the Heterogeneity in Size and Shape of Clusters node and the Multiple Clustered Calcifications node was “present” and “absent”. We model special cases and associated findings as conditionally independent expressions of disease. The value of Breast Cancer node, which is the probability of malignancy, can provide decision support to guide case management. Actually the probability that we are looking for is shown below:

$$P(\text{malignancy} | f_1, \dots, f_n, \text{NCI}) \quad (1)$$

Which $f_i, i=1, \dots, n$ are n findings observed on the mammography of the patient and NCI is the prior probability that NCI program obtains from risk factors of the patient.

Result

We have tested several cases to evaluate the behavior of the model. We used 43 cases from Imam Khomeini Hospital files. Each case included clinical data, the mammographic findings and the expert mammographer's diagnosis. Some examples are shown in table 2.

Table 2. Result for 6 example cases. Calc. =calcifications; Probabilities had shown as percentage.

Observed Findings	Prior Probability	Radiologist Analysis	Posterior Probability
Speculated Margins High Density Amorphous Calc.	1.2	Highly Suggestive of Malignancy	99
Focal Asymmetric Density Lobular mass Indistinct Margins	1.1	Suspicious Abnormality	85
Oval mass Circumscribed Margins Punctate Calc.	1.2	Benign	2
Pleomorphic Calc. Linear Distribution	1.1	Highly Suggestive of Malignancy	98
Amorphous Calc. Segmental Distribution	0.7	Suspicious Abnormality	82
Rod like Calc. Scattered Distribution	0.8	Probably Benign	3

We compared the result of our system with the expert's opinion for all cases. Our prediction for 40 cases was correct according to the expert. In other words our system has consistence with the expert opinion in 93% of cases.

Conclusion

Bayesian networks represent a promising technique for clinical decision support and provide a number of powerful capabilities for representing uncertain knowledge. They provide a flexible representation that allows one to specify dependence and independence of variables in a natural way through the network topology. Because dependencies are expressed qualitatively as links between nodes, one can structure the domain knowledge qualitatively before any numeric probabilities need be assigned. The graphical representation also makes explicit the structure of the domain model: a link indicates a causal relation or known association. A further advantage of the graphical representation is the perspicuity of the resulting domain model. Finally, since Bayesian networks represent uncertainty using standard probability, one can collect the necessary data for the domain model by drawing directly on published statistical studies.

Our system was based on BI-RADS descriptors but we considered 3 additional mammographic features including "Number of Calcifications in Cluster", "Heterogeneity in Size and Shape of Clusters" and "Multiple Clustered Calcifications". These features extracted by our experienced radiologist and should improve the accuracy of the system. This system is a Bayesian network designed to assist radiologists in diagnosing breast cancer and successfully models the information to diagnose breast cancer with encouraging preliminary results and has the potential to assist in decision making.

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THE INTEGRATION OF ETHICS INTO THE STUDY OF SUPPLY CHAIN MANAGEMENT

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ABSTRACT

Supply chain management (SCM) is rife with the potential for ethical abuses, including quality, bribes/payouts/bid rigging, RFID, the environment, sweatshops, buyer/supplier relationships, diversity and culture, and more. A gap may exist between an individual's ethical values and the requirements of a job (Ellis & Higgins, 2006). The question becomes how do employees learn to identify situations of self-interest where their decision-making abilities may be compromised. Melé (2008) suggested the root of the problem might lie in business schools and the dearth of ethical problem solving available to business school students. Incorporating ethics into the discussion of SCM topics may aid in an increased awareness of ethical behavior and decision-making. Therefore, a need exists to integrate ethics into the fabric of supply chain management discussion and study.

INTRODUCTION

Understanding the ethical framework for decision-making aids in an understanding of how to deal with unethical situations. Legislative laws address what an organization can or cannot do legally, but often laws can be bent or circumvented creating a situation where employees are uncomfortable with or need to report to authorities what is occurring. Whistleblowers are often long-term employees who observe or encounter unethical or illegal activity, or who identify information or activities that are damaging to the public, the environment, or to other employees (David, 2007). All organizations should wish to avoid this scenario but unethical activity is a common occurrence in global business.

Business school students, and in particular supply chain management and operations management students, do not always learn ethical theories and applications in a business school setting. Given the recent ethical debacles at many organizations including Enron, WorldCom, and Tyco International, business students require a basis to identify, understand, and apply ethics to particular situations. This paper proposes an integration of supply chain management topics and potential ethical situations in a business school course. The creation of a foundation of ethical decision-making aids in understanding the connection between common business practices and ethics. This foundation is a benefit to students, employees, management, and organizations as a whole.

Ethical Considerations

Understanding common ethical values and norms is necessary to understanding why certain reasons justify (or not) an action or behavior. While several ethical theories exist, and no single theory fits all scenarios, the general theories of ethics are teleological and deontological. Deontological theories are non-consequentialist theories. Proponents of deontology advocate the use of rules and principles to determine which actions are ethical. Deontological theories ascertain a moral obligation by gaining an understanding of the rightness or wrongness of an action without identifying the consequences of that action (Macdonald & Beck-Dudley, 1994). Other factors may be relevant to the determination of right or wrong.

The teleological theory of ethics is a consequentialist theory of ethics. An action or behavior is "morally right if the consequences are more favorable than unfavorable" (Fieser, 2006, ¶22). This set of theories focuses on the good that an action can bring to society, the more people who benefit, the better the action (Guttmann, 2006). An individual does the right thing because of the consequences resulting from actions and behaviors. The consequences are determined by the particular value system employed. Existing laws (and our deeds) should influence the balance between the good and bad of an action or behavior (Guttmann).

Two main categories of teleological theories are utilitarianism and egoism. Utilitarianism focuses on the good that an action can bring to society, not just to an individual (Macdonald & Beck-Dudley, 1994). Understanding that each action can also produce harm, utilitarianism looks for the action that produces the greatest benefit with the least

amount of harm (Peck, 2006). Egoism on the other hand suggests an action is right or good if it supports or enhances the interest of the agent, either an individual or a group.

Many ethical theories fall into the general categories of deontological and teleological ethics theories. All try to establish how, why, when, or under what circumstances an action or behavior is moral (right) or not. By itself though, learning ethical philosophies is not ethical education (Melé, 2008). As SCM encompasses so many aspects of an organization doing business, an understanding of ethics and how an individual knows what is right or not is important. This becomes increasingly important as organizations grow and as they become more global. Therefore, incorporating the study of and discussion of specific SCM ethical topics and situations, using a case study approach, will aid in establishing a basis for ethical decision-making for SCM students.

Supply Chain Management

A significant amount of literature exists relating to different aspects of a supply chain and supply chain management. An organization's supply chain is "the global network used to deliver products and services from raw materials to end customers through an engineered flow of information, physical distribution, and cash" (Blackstone & Cox, 2005, p. 113). The global network is made up of many companies, from the original raw material vendor to the ultimate customer (Lambert, García-Dastugue, & Croxton, 2005).

A supply chain encompasses many elements and exists for both manufacturing and service operations. Supply chain management is "the design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand, and measuring performance globally" (Blackstone & Cox, 2005, p. 113).

Proper management of the supply chain allows for the production and distribution of goods and services of the right quality, in the right quantities, at the right place and time, and at the right cost (Chan, Kumar, & Choy, 2007; Christopher & Peck, 2004). In general, supply chain management includes the key processes of customer relationship management, customer service management, demand management, order fulfillment, manufacturing flow management, procurement, product development, and returns with the goal of maximizing value to the end customer (Lambert, García-Dastugue, & Croxton, 2005). Supply chain management, a necessary step in the organization's value chain, encompasses any value-add activity or linkage (e.g. warehousing or transportation) necessary to provide a product or service.

A Proposal for Business Ethics Study in SCM Courses

Organizations are increasingly noting a need for ethical education for employees. An expectation of organizational leadership is an employee will acquire an ethical basis in business school (Melé, 2008). The Association to Advance Collegiate Schools of Business (AACSB), in a 2006 revision of standards, identified a need for both ethical and legal identification and training for organizational and societal responsibilities (Melé). In addition, the AACSB identified ethical reasoning skills as a core need and a learning goal for business schools ("Ethics education," 2004). An AACSB task force to study ethics in business education identified four areas of concern in ethics education including (a) responsibility of business in society, (b) ethical leadership, (c) ethical decision-making, and (d) corporate governance, stating, "the crisis in business ethics is not only a challenge for companies but also an opportunity to strengthen management education" ("Ethics education, p. 7).

The study of business ethics should not be a stand-alone course but should be incorporated into the study of each business course (Melé). The study of finance, management, economics, operations management and more should include an integration of ethical topics and decision-making. Wines (2008) suggested business ethics classes are being dropped from MBA programs at an alarming rate even as the number of ethical scandals in the corporate world have increased. Instead, the incorporation of business ethics and ethical decision-making into business school courses should include (a) the individual level of responsibility, (b) the organization level of responsibility, and (c) the community or society responsibilities (Wines).

Supply chain management is rife with the potential for ethical abuses, including quality, bribes/payouts/bid rigging, RFID, the environment, sweatshops, buyer/supplier relationships, diversity and culture, and more. A gap may exist between an individual's ethical values and the requirements of a job (Ellis & Higgins, 2006). The question becomes how do employees learn to identify situations of self-interest where their decision-making abilities may be compromised. Melé (2008) suggested the root of the problem might lie in business schools and the dearth of ethical problem solving available to business school students. Incorporating ethics into the discussion of SCM topics may

aid in an increased awareness of ethical behavior and decision-making. Therefore, a need exists to integrate ethics into the fabric of supply chain management discussion and study.

The management of the supply chain focuses attention on production, quality, and logistics but SCM influences numerous other areas of an organization including sales and marketing, customer service, human resources, engineering, and finance. The intersection of SCM and any functional area may provide areas of study in business ethics. Using a case study approach, combined with a discussion format, professors and students can identify and discuss potential areas of concern. As an example, Firestone steel-belted radials, predominantly used on Ford Explorers, were prone to splitting and were implicated in the rollover and crash of numerous vehicles. These Firestone tires failed at alarming rates in the 1990s, contributing to the death of over 200 people. Irregardless of the results of the lawsuits, the company had an ethical obligation to consumers to provide a quality product. Instead, the company chose to downplay the company's responsibility and instead focused blame on other areas including certain employees, customers, and road conditions in specific areas around the world.

When studying this type of case, what are the implications to the organization for failing to assume responsibility for its products? The conflict between different departments and between the short-term and long-term goals of the company contributed to the Firestone debacle. In addition, Ford Motor Company was implicated in the failure. The Public Citizen, a consumer advocacy group, published a statement implicating Ford; the Firestone recall was "the result of a long series of cost- and weight- saving miscalculations and gambles by Ford" (Turner, 2001, p. 43). As a result, one of the largest product recalls in history occurred in 2000.

This case encompassed customer service, quality, sales and marketing, production, and management issues that combined to create an ethical dilemma for two companies. In addition, the reputation of two companies was negatively affected. Class discussion could address the production and quality side as well as how company management should have handled the situation, preferably before it reached the point where hundreds of people were killed or injured. Discussion questions could include the role, if any, of the employees who were aware of the situation. What could management have done differently to address issues before more consumers were affected? Did the short-term financial goals create a situation where management was willing to overlook severe quality issues in the tires? Each of these questions and discussion points reflect real life situations common to numerous organizations and support the need for business ethics education for supply chain management students.

Conclusion

Business school students, and in particular supply chain management and operations management students, do not always learn ethical theories and applications in a business school setting. Ethical scandals at many organizations in the last decade reflect the need for ethical education for business school students. Business students require a basis to identify, understand, and apply ethics to particular situations. Understanding business ethics and the need for ethical decision-making is critical to the ongoing success of an organization. Creating a foundation for ethical decision-making in the study of SCM is crucial as many areas of an organization are influenced by organizational SCM processes, procedures, and practices.

Organizational and societal responsibilities exist (Melé, 2008) and are encompassed by numerous aspects of SCM. Incorporating the study of ethics and ethical decision-making into business school supply chain management and operations management courses allows students to gain an understanding of the need for ethics in business. Studying business ethics as it relates to SCM topics creates a foundation for the development of decision-making skills for SCM professionals.

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INFORMATION TECHNOLOGY FOR UNDERREPRESENTED STUDENT POPULATIONS: WHAT CAN 21ST CENTURY HBCUS LEARN FROM 20TH CENTURY EXAMPLES?

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ABSTRACT

The importance of computer technology in today's economy requires IT professionals with advanced knowledge and skills. Unfortunately, few graduates or entry-level workers possess the necessary skills and experience. The lack of qualified IT workers has reached a crisis level that is negatively affecting the productivity of American business. One reason for the staffing shortage is the discrepancy that exists between the skills needed by employer and those taught by higher education. Industry leaders claim higher education institutions have not kept pace with the rapidly changing computer industry. Educators maintain that their role is not to teach specific skills, but provide students with fundamental knowledge. This manuscript posits that both employers and educators are equally responsible for preparing graduates for today's high technology workforce. First, the manuscript describes the severity of the IT staffing shortage during the latter portion of the 20th century. The second section identifies some root causes of the problem and the skills sets desired by employers during that time period. Third, the manuscript links the IT industry needs from the 20th century to the 21st century IT needs. Finally, the solutions to the problems are identified as well as recommendations for future directions that educators and IT professionals alike should investigate.

INTRODUCTION

"Successful diversity programs level the playing field for women and minorities by addressing their needs and teaching undergraduates the unwritten rules of academic science." (Rey 2001)

The Information Technology staffing crisis is well documented and quickly becoming the leading headline of the 21st century. Many different companies like Snap-On Tools, Federal Express, Charles Schwab, Microsoft, and Wal-Mart report that their productivity is suffering because they lack qualified computer and IT professionals. Attractive recruitment bonuses and employee retention incentives almost compete with those paid to star college football and basketball players. IT and computer industry analysts expect the shortage of skilled workers to peak at the end of the century and continue for decades.

Different reasons exist for this shortage. First, examine the following data taken from Rey (2001):

"If U.S. higher education knows what works [now], then why are undergraduate institutions failing to churn out more diverse groups of scientists? According to the National Science Foundation (NSF), only a third of the minority students who begin in the sciences wind up graduating with a science or engineering degree. And, although blacks and Latinos make up nearly 25% of the U.S. population, they earn only 13% of U.S. science and engineering bachelor's degrees and only 7% of doctoral degrees. The overall numbers for undergraduate women are better but still fall far short of matching their majority status on campus: They receive only 11% of engineering degrees and 24% of degrees in physical sciences."

The situation is similar for minorities in the IT areas of US higher education, and this has only been exacerbated since the 20th century ended. An obvious cause may have been the explosion of information technology in nearly every facet of the economy during the dot com boon. The Internet, the World Wide Web, easy-to-use software packages, and the growth of distributed computing networks created a need for a highly skilled and technically competent workforce. Hardware manufacturers, software developers, telecommunications companies,

and technology consultants require an increasing number of employees to meet the demands of the technology-driven global marketplace. Adding to the demand for IT workers are organizations outside traditional computer fields. Retailers, publishers, advertising agencies, and consumer products manufacturers now utilize computer technology to connect employees, create and distribute products, provide services, and reengineer their business processes.

Another significant contributor to the IT labor crisis is the discrepancy between the skills needed by diverse businesses and those computer professionals possess. The literature reports that while businesses do not experience a shortage of applicants, few of IT applicants exhibit the necessary experience, knowledge, and skills. Many organizations blame higher education for this deficiency in experience and skills. They cite outdated and underfunded computer degree programs as the primary cause for the present staffing crisis. Another problem cited by researchers and practitioners is the divergence between skills valued by employers and those valued by professors. The college and university systems argue that industry cannot expect them to teach specific skills that quickly become obsolete. They accuse industry of unrealistic expectations and a failure to train entry-level positions. Both groups acknowledge, however, that the education and experience of IT students have not kept pace with the rapidly changing computer industry. Objective consideration of the issue reveals that educators and employers are at least partially correct in assigning accountability to the other. The manuscript examines the role each plays in the labor shortage, and moves beyond the assignment of blame to the identification of solutions for the 21st Century classroom. Educators, researchers, business leaders, and practitioners have devoted little attention to solving the disparity between skills needed by business and those taught in schools. They have also largely ignored methods for integrating instruction of specific skill sets with traditional computer-related curricula. This paper highlights these omissions and proposes several possible solutions to the IT staffing crisis. Specifically, we posit increased cooperation between education institutions and businesses, and an equal assumption of responsibility for preparing students for the IT workforce. As revealed later in the Framework for Increasing Underrepresented Student Populations In the 21st Century IT Workforce.

First, the manuscript describes the severity of the IT staffing shortage during the latter portion of the 20th century. The second section identifies some root causes of the problem and the skills sets desired by employers during that time period. Third, the manuscript links the IT industry needs from the 20th century to the 21st century IT needs. Finally, the solutions to the problems are identified as well as recommendations for future directions that educators and IT professionals should investigate.

BRIEF IT INDUSTRY HISTORY

The numbers of unfilled IT and computer related jobs are staggering considering that the United States now enjoys the lowest unemployment rate since the 1970s. Several recent studies document the labor shortage and support the assertion that the problem will worsen in the next decade. The most discussed survey is that released by the Information Technology Association of America (ITAA) in February 1997. The ITAA study of IT and non-IT companies found 190,000 open computer-related employment positions. ITAA estimates that these vacancies represent 10% of all available IT jobs (ITAA, 1998c; Fabris, 1998; Cone, 1997; Baker, Barrett, and Himelstein, 1997; Hersch, 1997). Not surprisingly, open positions in the information/high technology industry comprise one half of the vacancies. Moreover, 80% of the high technology companies surveyed by ITAA expect to open additional IT positions in 1998, further increasing the staffing shortage (Baker, Barrett, and Himelstein, 1997; Fabris, 1998).

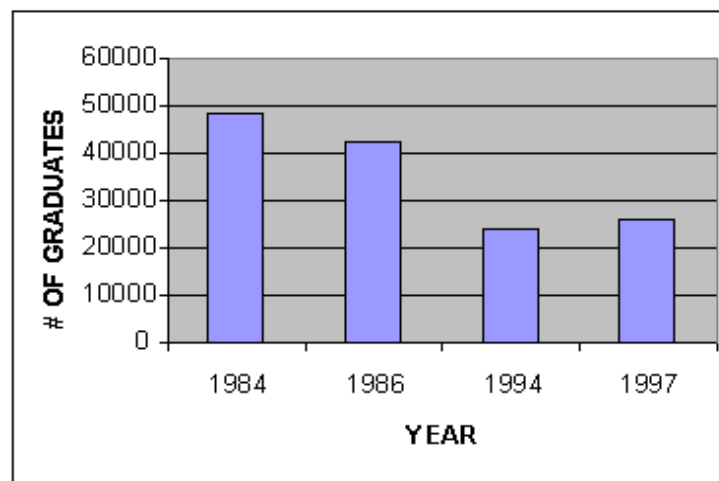
ITAA's second workforce study, conducted in November and December 1997, demonstrates an even larger staffing shortage. The second study, more thorough in scope than the first, included over 500 companies with 100 or more employees. Preliminary findings indicate 346,000 IT vacancies. This figure more closely parallels that reported by Microsoft Corporation in 1997. Microsoft polled the integrators and resellers in its distribution channel and found that each company exhibited an average of three unfilled IT positions. The software manufacturer calculates a present shortage of 450,000 IT workers (Cone, 1997).

The research indicates that vacancies exist in approximately 10% of all IT positions. For example, although ITAA expanded its pool of survey subjects to include small and medium sized businesses, and thus the total number of IT positions available increased, the percentage of unfilled IT jobs, 10%, remained the same between 1996 and 1997 (ITAA, 1998a). Two other studies confirm the findings by ITAA and Microsoft. A 1997 *InformationWeek* survey of 400 Information System managers shows that 25% of the respondents reported they cannot fill 6-10% of their organizations' IT positions. The shortage affects 80% of the organizations polled, whose managers reported an employee shortfall of between 1% and 21% (Cone, 1997). A smaller scale survey conducted by CIO Magazine in late 1997 supports these results. CIO's interviews with 316 US companies found that 15% of IT positions remain unfilled at any given time (Fabris, 1998).

An existing lack of qualified IT workers coupled with the growth of the information and computer industries caused the number of unfilled IT positions to increase in 2006. The US Department of Commerce forecasted American companies to require more than one million new IT workers from 1999 through 2006 (Fabris, 1998; Hersch, 1997). The Bureau of Labor Statistics (BLS) *1998-1999 Occupational Handbook* predicted that the need for programmers would grow 21% to 35% through 2006. The job outlook was even more promising for computer scientists, computer engineers, systems analysts, and computer system managers. The BLS expected employment demand for high level computing professionals to increase much faster than average or more than 35% during the same period of time (BLS 1998).

Despite the positive employment opportunities predicted for computing professionals, recent statistics from the Education Department's National Library of Education support the argument that the labor shortage will worsen. A significant contributor to the lack of qualified IT workers is a drop in the number of students pursuing and attaining computer-related degrees. The number of graduates in computing fields declined 12.5% from 1984 to 1986, 50% between 1984 and 1994 (Maglitta, 1996), and 43% between 1986 and 1994. In 1984, US colleges and universities awarded 48,000 undergraduate computer-related degrees (Baker, McWilliams and Kripalani, 1997). In 1994, that figure fell to 24,200 (McGee, 1996; Fabris, 1998; Baker, Barrett, and Himmelstein, 1997; Cone, 1997). During the height of the dot com boom there were only approximately 26,000 computer graduates in 1997 (Baker, McWilliams and Kripalani, 1997). See Figure 1.

Figure 1.
Number of Graduates 1984-1997



ITAA attributes the historically low numbers of graduates to several factors. First, the stereotypically negative image of computer professionals may discourage many students from pursuing degrees in IT fields (Fabris, 1998). The popular image of a computer professional is the solitary “geek” who spends long hours at a computer terminal writing code. This image, however erroneous, may not be attractive to young people who seek exciting, fast-paced careers. Secondly, many people may be entering the IT field with non-computer related degrees (Fabris, 1998). Third, some students, particularly women and minorities (Van Brussel, 1992), may receive poor advice from guidance counselors who advise them not to enter the computer field if they do not excel in math and science. Finally, and most significantly, many students may change majors or avoid computer degrees because universities do not provide up-to-date information technology education (Fabris, 1998). The following section describes the disparity between the skills taught in many university computer departments, and those desired by the IT industry.

INDUSTRY SKILLS REQUIRED VS. SKILLS TAUGHT IN HIGHER EDUCATION: A LATE 20TH CENTURY VIEW

Business and industry leaders attribute the shortage of qualified IT personnel to a failure on the part of the university system to teach appropriate skills. Sixty-six percent of the respondents to the ITAA survey assert that

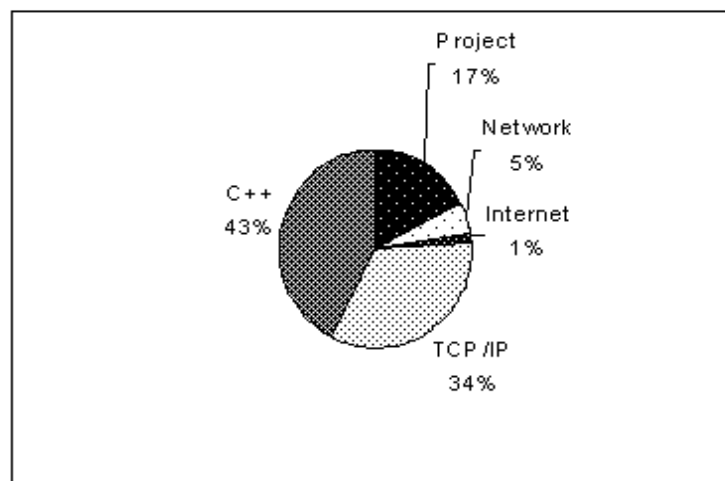
colleges and universities are not providing students with sufficient skills to enter the computer workforce. Sixty-nine percent claimed that few job applicants possess the desired skills (ITAA, 1998b; Fabris, 1998). A Canadian survey of eighty high-technology companies supports this assertion. The study found that Canadian technology companies receive numerous applications for open positions, but retain only one in fifteen for further consideration. Employers cited a lack of specific technical skills as the primary reason for rejection. Another common complaint about graduates is poor communication skills. Canadian businesses rejected 22% of applicants because they lacked the ability to communicate well (Sibley, 1997).

Industry accuses higher education of either teaching students outdated technology or failing to teach core IT concepts. Computing managers complain that the university system has not kept pace with the changes in the IT marketplace, such as the integration of distributed computing with business strategy. McKegney (1997), for example, notes that few schools offer programs that focus on Web design or Web hosting, although Internet and Intranet development are the fastest areas of expansion in many IT organizations (Zieger, 1997). Several recent studies indicate employers are overwhelmingly seeking workers capable of applying networking, Internet, and database technologies to strategic initiatives.

A Hill and Associates study (1997) found that Fortune 500 companies desire personnel qualified in groupware, wireless communications, voice-over-IP, basic LAN and WAN technologies, and Intranets. Ninety-three percent of the employers surveyed by Davis (1997) expect recent graduates to possess email experience. Sixty-three percent of employers desire applicants who are competent with online and Internet search techniques. Additionally, employers polled by Davis valued a graduate's ability to create Internet documents (22%) and download files from a network (74.7%). The BLS (1998) also believes that individuals skilled in client/server, CASE tools, object-oriented programming, systems analysis, graphic user interfaces (GUI), and data communications will experience the most success in the IT industry.

A clear discrepancy exists, however, between the need for these skills and those presented in degree programs. According to a 1996 survey by *Computerworld*, graduates of computing, business, or IT programs have little experience with or knowledge of project management, documentation, and networking. They also lack experience with electronic commerce, relational databases, and telecommunications. Of the 90 university programs studied, two-thirds evaluate students on C++ skills. Slightly more than half of the universities include instruction and evaluation on TCP/IP. Only 8% test students' knowledge of the Internet. Eight percent evaluate network management skills, and only 27% require students to demonstrate their competencies in project management (Maglitta, 1996). Figure 2 shows the number of schools that evaluate their students on the concepts and technologies most desired by the IT industry. Note that a school may teach more than one of these concepts and so the figures equal more than 90 (the number of college/university programs studied).

Figure 2
Desired Skills



Massetti, Abraham, and Goeller (1995, 1996) state that information technology managers value different skills, concepts, and applications than do IT/Computer Science faculty. This “expectation gap” creates a discrepancy in the skills desired by industry and those taught in universities (p. 48). Results of the Massetti et al, (1995, 1996) survey show that faculty underestimates the value of thirteen applications and concepts considered important by business professionals. These include spreadsheets, database tools and management, statistics, networking tools, and information system types. The faculty members surveyed also overestimated the value of eleven skill sets. For example, 55% of the professors consider Systems Theory critical to successful career performance. In contrast, only 27% of the business professionals valued knowledge of System Theory. Twenty-seven percent of faculty members highly valued fluency in a programming language, but none of the business managers regarded a programming language as critical. Table 1 presents selected findings from the Massetti et al, (1995, 1996) study.

Table 1.
Percentage of Respondents Valuing Technology Skill Sets

Skill Set	Faculty	Professionals
Spreadsheets	73%	91%
Word Processing	91%	73%
Programming Language	27%	0%
Database Tools	45%	64%
Statistics	55%	64%
Production/Operations	27%	18%
Expert Systems	18%	0%
Info System Types	36%	27%
Telecommunications	55%	45%
Networking Tools	55%	73%
Database Management	64%	55%
Systems Theory	55%	27%

As Table 1 demonstrates, a significant measure of curricular disconnect exists between educators, and employers. Employers argue that recent graduates lack not only knowledge of current technology, but also practical business and technical experience (Buckler and Carey, 1992; Denning, 1992; Blond, 1996; Maglitta, 1996; Shoemith, 1996; Cone, 1997; Dahlbom and Mathiassen, 1997; Sibley, 1997). Dahlbom and Mathiassen (1997) note that computing graduates often cannot formulate or defend a proposal, write a memo, draft a simple project budget, prepare an agenda for a meeting, work in teams, and overcome adversity.

Massetti et al (1995, 1996) found that business professionals expect graduates to possess well-developed analytical, planning, decision-making, and coordination skills. They also value creativity, initiative, and risk-taking in job applicants and new hires. The interest in these characteristics reflects the importance of IT workers to the development of business strategy and the creation of competitive advantages. According to Roth and Duclos (1995, p. 52), a majority of newly employed business school graduates are expected to find new ways to apply information technology to increase personal and organizational productivity. The Bureau of Labor Statistic's *Job Outlook Handbook* (1998) supports these findings. The BLS states that college graduates who demonstrate practical experience, an understanding of business and its technology needs, problem-solving ability, and strong interpersonal skills will have a great advantage in the job market.

From the perspective of the universities and colleges, employers demonstrate unrealistic expectations of recent graduates. Industry managers expect students “to hit the ground running . . . to be productive right off the bat” (Sibley 1997, p. 4). Numerous reports on the staffing crisis echo this erroneous assumption on the part of employers (Blond, 1996; Maglitta, 1996; Buckler and Carey, 1992; Inwood, 1997; Williamson, 1997). Educators maintain that their role is to provide fundamental knowledge of business and computing concepts, not preparation for specific skill sets. The latter is the responsibility of employers. Universities would do a great disservice to students if they merely trained them for particular jobs or provided them with narrow skills. As the literature demonstrates, this is precisely the type of education that employers want, however. The debate between educational institutions and industry

leaders is thus inherently linked to pedagogical method. The most controversial issues were: What should be taught? How? By whom?

CONCLUSIONS AND FUTURE RESEARCH OPPORTUNITIES: 21ST CENTURY HBCUs CAN LEARN

The authors suggest that both educators and employers must expand their efforts to prepare students for the IT workforce in the 21st century. Businesses must invest resources in the training of entry-level workers, and schools must provide opportunities for students to learn state-of-the-art skills and technologies. The suggestion is a familiar one; educational institutions and business professionals must cooperate if they hope to resolve the staffing problem. Before effective cooperative solutions can be put in place, however, a significant amount of very specific research is necessary. While current research has clearly established the severity of the labor shortage and the disparity between skills taught and those desired, very little research exists particular to geographic regions, type of industries, experience levels, and specific technologies. Future researchers must determine the exact nature of the IT crisis in their areas and/or fields.

Cooperation and collaboration must begin at this research stage of the solution process. Joint research conducted by universities, chambers of commerce, and professional organizations will provide diverse points of view and help employers and educators identify their needs and capabilities. Both parties might wish to conduct a SWOT analysis (Strengths, Weaknesses, opportunities, and Threats), for example, but which viewpoint would indicate the appropriate aspects for improvement or exploitation?

The result of detailed analysis may be the establishment of articulation agreements between business organizations and higher education institutions. An articulation agreement might describe preferred methods to teach particular skills or suggest that a school add new courses to its program. It would most likely include provisions for cooperative education, apprenticeships, and internships. In exchange for the promise of highly trained graduates, the articulation agreement would call on industry leaders to donate equipment, resources, and/or personnel to its affiliate school or schools.

The National IT Workforce Convocation's (ITAA 1998b) Task Force on Higher Education/Industry Responsiveness supports the concept of articulation and cooperation. The task force identifies six best practices undertaken by schools to develop IT relationships with industry. These best practices emphasize application and practical experience. It appears that virtually no institutions of higher learning have fully exploited these findings thus far in the 21st century. One might ask, are we witnessing another Deming TQM American business debacle?

Just to review, the first recommendation by the task force was the creation of specialized masters programs that are industry-specific, such as Technology Management. The second was the diversification of college and university boards. The task force suggested that the inclusion of IT experts and business leaders on education boards would effectively strengthen ties between academia and industry. Thirdly, membership organizations, such as the League for Innovation in the Community College arena, allow participants to pool resources and explore the most viable innovations and upgrades.

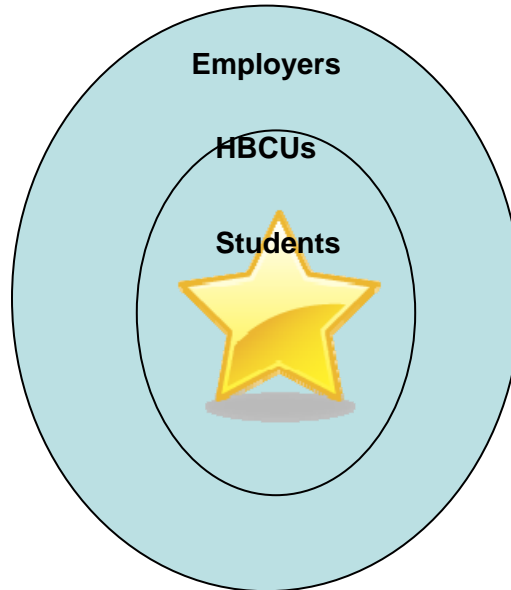
Other best practices included regional business/education partnerships and business sponsored student employment. These initiatives provided students hands-on experiences with specific technologies outside the classroom. Examples of partnerships are guest lectures by professionals, industry-sponsored workshops, and subsidized or industry-directed certification. Additionally, effective partnerships require businesses to share product information with schools and institute company policies that support and facilitate collaboration.

The next best practice was to implement opportunities for students to complete internships, co-ops, or field experiences for college credit or for pay. In either case, the student gains practical experience and understands the essential relationships between theory and practice. The employing organization receives an inexpensive worker during the internship and increases the chance that the student will be qualified for employment upon graduation. Another option for practical training is the development of an apprenticeship program for graduates and entry-level employees. An IT apprenticeship program would require students to work for a specified time under a qualified sponsor. The sponsor certifies that the student possesses certain skills and abilities before he or she graduates or progresses to the next phase of training. There are two primary advantages of such an arrangement. First, it provides students training on specific skill sets. Second, future employers participate in students' education evaluation and assessment. Thus, they have both a voice in the conferment of degrees and the development of potential future employees.

We introduce the Framework for Increasing Underrepresented Student Populations In the 21st Century IT Workforce (see Figure 3). The framework is not rocket science, however, if implemented correctly; the university and or IT organization can literally reach the stars of success in terms of accomplishing stated goals relating to increasing the number of diverse IT students, graduates, and professionals. The framework brings together in one

place the multiple individual advancements learned elsewhere. For example, it is no secret that a successful program will have both the educational institution and the IT firm utilize good academic advice, community involvement, outstanding mentoring (academic and professional), and quality research exposure (theoretical and practical).

Figure 3.
Framework for Increasing Underrepresented Student Populations in the 21st Century Workforce



Given the above, we the academic institution first whole heartedly to underrepresented student environments. Second, the take the student- centered approach to services delivered by each, and that will result in the students being more successful at the university and the workplace. It is recommended that the IT firm as well as the universities utilize a cross campus approach to insuring the minority student success. For example, providing accessible academic support staff in the college setting and if necessary a colleague to speak with in the workplace for support type matters. We can not stress enough the overall importance of executive buy-in from the very beginning to provide the necessary supportive cultural environment for the framework to work. This executive buy-in has been documented at Florida Agricultural & Mechanical University (FAMU) when then President Frederick Humphries aggressively introduced, personally marketed and supported the “Presidential Scholars Program”. FAMU’s enrollment grew from approximately 2,400 at the beginning of the program to approximately 12,000 when Dr. Humphries resigned after 17 successful years as president.

The university must also use the additional academic staff mentioned previously to assist these underrepresented student populations in customizing their early class schedules (i.e. first semester freshman) to better fit what they individually need, the IT firms need, and that the university can provide for them. In other words, get away from the cookie-cutter all incoming freshman IT majors (Rey, 2001). IT businesses need future employees (i.e. undergraduates) that are in simple terms, great all around students. Financial incentives are critical for the students in today’s environment for a number of reasons, so therefore, universities and IT firms should partner to develop lucrative scholarship opportunities for these students.

Both institutes of higher learning and IT firms alike must recognize the possibility that even in 2008, many students of color come from cultures that may frown on questioning authority (Rey 2001). If this is true, then universities and companies need to develop what innovative educators like Dean Sybil C. Mobley created in the late 1970’s as a core competency, implemented in the 1980’s and entered virtually all Fortune 500 companies, and perfected throughout the 1990’s to create a competitive advantage for FAMU’s School of Business and Industry in the marketplace (Hightower, Friday-Stroud, and Davis, 2007). In other words, universities and information technology firms that are interested in increasing underrepresented student and employee populations need to create and or revamp what Sybil Mobley referred to as “professional development”. The Framework for Increasing Underrepresented Student Populations In the 21st Century IT Workforce suggests that a finished “professional development product” exudes the following leadership values: pioneering, highly competent, strong work ethic, highly polished, and conscientious (Hightower, Friday-Stroud, and Davis 2007). Specifically, pioneering is defined as a graduate going into unknown or unclaimed territory to settle, opening new areas of thought, research or development. Highly competent suggests that the IT student/employee has a good understanding or a high mental

capacity in the discipline. Highly polished means that there is a successful blend of soft and technical skills requisite in the student. A strong work ethic is demonstrated by the graduate's readiness and ability to initiate action or enterprise. The conscientious graduate is controlled by or behaves according to his or her interpretation as to what is right, just, and fair.

The best practices described here, though to some are dated, can work now. It would require educators and employers to assume equal responsibility for IT student training. As offered previously, each group is correct in identifying a deficiency on the part of the other. In our opinion in terms of this manuscript, neither industry nor HBCUs are adequately preparing underrepresented student populations for immediate, fully skilled employment in today's distributed computing environment. Both should utilize the Framework for Increasing Underrepresented Student Populations In the 21st Century IT Workforce to investigate and possibly create/revamp programs designed to produce minority IT professionals. We acknowledge that this is a resource-intensive proposition during an especially difficult economic business cycle, but one with far-reaching benefits to the effectiveness of both universities and the IT industry. Cooperation and resource sharing are therefore the most logical solutions to the IT staffing crisis.

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CHALLENGES AND OPPORTUNITIES OF PEER REVIEW IN HIGHER EDUCATION

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ABSTRACT

Peer review is one means that informs a scholarship of teaching. Two surveys and faculty interviews investigated perceptions toward a peer review and informed the construction of a faculty-informed peer review template. Findings suggest mechanisms to integrate and conduct a peer review. This study contributes to a growing body of research that seeks a deeper understanding of faculty perceptions toward the peer review process and explication of the scholarship of teaching.

INTRODUCTION

Improving the quality of teaching in the academy is, in part, a response to recent criticisms of a perceived deficit in learning among students, rewarding research more than teaching, and professors' failure to examine their teaching practices, to integrate new instructional methods, and to consider current research on student learning (AACU, 2002; Bok, 2006; Glassick, Huber, & Maeroff, 1997). These and other concerns surrounding an accountability of teaching turn on a changing pedagogical landscape of higher education (Huber, 2004). It was Boyer's seminal study (1990) that proposed four interconnected views of scholarship in the professoriate: the scholarship of research, the scholarship of integrating knowledge, the scholarship of applying knowledge, and the scholarship of teaching. One leading U.S. research institution has recently sought to elevate and reward the culture, status, and scholarship of teaching through a number of institution- and department-wide recommendations (Harvard University FAS, 2007). This study contributes to the growing body of research that seeks a deeper understanding of faculty perceptions toward the peer review process and explication of a scholarship of teaching.

SCHOLARSHIP OF TEACHING

Improving the quality of instruction is contingent on teaching made public. When teaching becomes public, it moves to a communal enterprise, susceptible to critique and available for others to exchange and build upon – similar, in many ways, to traditional forms of research that are published (Hatch, 2006; Huber 2004). The scholarship of teaching reflects the formal and informal means of assessing scholarship that “raise new questions, take new paths, ramify, and grow” (Huber, 2004, pp. 220-221). Indeed it becomes, “the object of critical review and evaluation by members of one's own community, and members begin to use, build upon, and develop these acts of mind and creation” (Shulman, 2004, p. 42). According to Huber and Hutchinson (2005), the scholarship of teaching is more than individual improvement and development: it affirms a set of habits and dispositions about producing knowledge that is available for others to use and build upon in the academy. The AACU (2002) has called for the academy to offer incentives, professional development, support, and rewards for good teaching in order to foster student learning in the twenty-first century.

While a scholarship of teaching may ask faculty to do more in terms of collecting teaching artifacts, there are few protestations when it comes to more traditional forms of scholarship that require research, review, and many months to formulate a paper (Shulman, 2004). If pedagogy is to become an important part of scholarship, Shulman asserts “we have to provide it with this same kind of documentation and transformation ... that scholarship entails an artifact, a product, some form of community property that can be shared, discussed, critiqued, exchanged, built upon” (p. 142). Along with dialogue in departments about how to teach a course and consideration of research on student learning, peer review is one of many professional developments to advance the scholarship of teaching (Bok, 2006).

Theoretical Framework

This paper adopts Boyer's (1990) and Glassick, Huber, and Maeroff's (1997) model of scholarship of teaching as a conceptual framework to analyze faculty challenges to and support of peer review. Boyer (1990) and others (Glassick, Huber, & Maeroff, 1997; Huber, 2004) have traced the historical priorities of American higher education

and argued for an expanded notion of scholarship that moves beyond the ‘teaching versus research’ debate to a consideration of scholarship that is not restricted to a narrow definition of research and publications. Glassick, Huber, and Maeroff (1997) contend that the move to broaden scholarship has called “new attention to the imperative for better assessment – evidence and standards that allow colleagues to make reliable judgments about quality without over-reliance on quantification” (p. 20). Boyer asserts that faculty should be responsible for evaluating the teaching performance of colleagues in a manner that brings faculty together as a community of scholars with a shared vision of intellectual and social possibilities,

and the process should be as systematic as that used to evaluate research. Criteria should be defined, and data gathering procedures carefully developed. Specifically, faculty might work together to establish criteria for good teaching, be encouraged to move freely in and out of classrooms, observing colleagues and discussing their own teaching procedures (p. 38).

Carefully assessing instruction involves critical self-evaluation and self-reflection but also observations from colleagues to foster dialogue and community development about teaching and student learning in departments, professional schools, and campus-wide forums (Palmer, 1998). Documenting the scholarship of teaching is a process that is collected from multiple points of view: “there has long been agreement that documentation of teaching should be more imaginative, drawing upon many types and sources of evidence, not just a collection of syllabi for example, or data from student rating forms but a teaching portfolio that would include a wide range of evidence of teaching” (Glassick, Huber, & Maeroff, 1997, pp. 38-39). Other writers (Arreola, 2000; Braskamp, Brandenburg, & Ory, 1984; Braskamp & Ory, 1999; Chism, 1999) have considered alternative approaches of documenting teaching and identified mechanisms for implementing a peer review of faculty evaluation in higher education. Glassick, Huber, and Maeroff (1997) contend that a reduction of some bias and concern surrounding a class visit by a colleague may be appeased when expectations and understandings of the criteria for good teaching are public and shared: “The value of colleagues as sources for evidence about teaching effectiveness depends not only on their knowledge of the subject and their familiarity with the candidate’s work as a teacher but also on the questions they ask” (p. 47). The scholarship of teaching allows for a meaningful framework to interpret university faculty and staff perceptions toward peer review.

INVESTIGATION

Over a two-year period, faculty and staff at a small liberal arts university in the southeast of the United States were surveyed and interviewed. The mission of the institution is to develop and educate leaders through strong liberal arts, pre-professional, professional, and graduate programs. Commitment to excellence in teaching is reflected in yearly faculty evaluation reports in which teaching activities represent 60% of evaluation with the remaining 40% devoted to scholarship and research (10-30%) and service (10-30%). The university has no formal peer review process in place.

Findings from the first survey (n=85) provided insights into faculty and staff perceptions of peer review and created a faculty-informed peer review template based on categories that faculty identified to be included on an observation rubric if a peer review were implemented. The peer review template created from the first survey was faculty-informed in terms of the categories grounded from faculty input. Categories listed on the survey were identified from a diverse representation of peer review templates assembled from large and small institutions in the United States, Canada, England, and Australia.

At the end of the first year, the faculty-informed peer review template was offered to department heads and faculty as an instrument to adopt, critique, supplement an existing informal rubric, or serve as a discussion point. It was emphasized that the faculty-informed template was not tied to promotion and tenure or any existing or proposed systems of merit pay. In the second year, a follow-up survey was sent to faculty and staff of the same institution requesting feedback on the faculty-informed template. Fifteen faculty from five different departments participated in interviews.

SUMMARY OF FINDINGS AND CONCLUSIONS

Findings from this study identified faculty expressing concern about the peer review process and the role of the classroom observer. Faculty questioned whether they would have time to participate in the process – “adding another layer of administrative bureaucracy” – and if several visits would be necessary so that “commonalities of instruction could be discerned and addressed”. Moreover, faculty were concerned if the results of the process would

be punitive: impacting merit pay, evaluations, or promotion and tenure decisions. Some respondents questioned whether the observer would be objective not only collecting observation data but also delivering feedback. Many wondered how the selection of an observer would occur.

Some faculty grappled with their role in the institution, asking if they were to devote most of their energies to teaching or research. There was a tension for a few interviewed faculty reconciling their role in a teaching institution against the implicit – sometimes stated from a department head – pressure to research and publish. Boyer (1990) posed the same question: what is the balance to be struck between teaching and research?

Faculty identified a peer review process as “much more meaningful than student evaluations,” for “students, as neophytes in the fields we teach, are not properly equipped to assess most aspects of my teaching.” Other faculty observed that the process was a “good way to triangulate what is going on in the classroom,” providing “input to administrative evaluators beyond the student evaluations of teaching.” A peer review provided constructively critical feedback to inform faculty instruction and allowed for deeper reflections with a colleague on teaching and student learning. Those that had participated in an informal peer review described the process as a reciprocal relationship in which the observer gained insights into his or her own teaching by viewing a colleague.

The adoption of a peer review was perceived to involve an evaluative as well as cultural shift in an institution. Interviewed faculty clearly explicated the elements that bounded a peer review as well as factors that were external to the purpose of a peer review. Faculty also stated that feedback in a peer review was to be focused on instruction rather than content. One individual from the philosophy department, echoed by another in the nursing department, declared, “good teaching is good teaching, regardless the subject or discipline.” It was suggested that an observer could be selected from an identified pool of “master teachers” – available through an institution’s Center for Excellence in Teaching – as the feedback provided by an individual from another department in the proposed peer review process would “eliminate bias” as the focus of observation would be on instruction rather than content.

Peer review of faculty teaching is a form of professional development. Peer review provides an alternative formative assessment to arrive at a fuller picture of teaching quality and effectiveness (Tagg, 2003). The process can address substantive teaching issues through dialogue and reflections between faculty members about instruction and student learning. While there is no compelling necessity, according to Bok (2006), for instructors to reexamine their instruction “so long as professors continue to teach conscientiously in their accustomed way” (p. 313), the ultimate beneficiaries of a peer review are students and their learning as a consequence of informed, quality teaching.

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A COMPARISON OF ONLINE AND IN-CLASS TEACHING EVALUATIONS USING MULTIPLE REGRESSION ANALYSIS

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INTRODUCTION

For more than seventy-five years, academics have been examining student evaluations of instructor performance, and after thousands of pages have been written on the subject, the usefulness of the data collected is still debated. Almost all institutions of higher education collect data on student perceptions of faculty performance, although this data is used for different purposes, both evaluative and developmental. Clearly, significant agreement exists among researchers as to what makes a useful teacher evaluation. Students and faculty however have concerns regarding how the data is collected, how the data is used, and ultimately the value of the process (Shao, *et al.*, 2007). Whereas researchers often focus on the consistency of data collected in large studies, faculty members focus on how student evaluations relate to them individually. Perhaps it is this disconnect between the broad conclusions of research, and the individual application to instructors that keeps this debate alive. What may be most surprising about research into the data collected through student evaluation of teachers is how persistent faculty members are in expressing their doubts about the value of the exercise.

With this paper we hope to add to the discussion on the usefulness of teaching evaluations in two ways. First, because a growing number of universities are conducting student evaluations online rather than in class, we analyze the impact this approach may have on student evaluations. This is not a new undertaking, indeed many researchers (Layne *et al.*, 1999; Dommeyer *et al.*, 2002; Dommeyer *et al.*, 2004) have looked at the differences between the ratings of in-class and online evaluations. With few exceptions little significant differences are found. Our contribution centers on how the data are analyzed. Most analyses that have been conducted to date fail to control for many of the variables which have been found to impact instructor evaluations, such as expected grades, class size, and level of class (Krautmann & Sander, 1999). We show that although a simple test of means does not reveal differences between online and in-class evaluations, significant differences between online and in-class evaluations do emerge when controlling for instructor and class characteristics.

Our second contribution goes to the heart of faculty hesitancy regarding the evaluation process. We show how student evaluations of faculty can be adjusted so that the only factors under the instructor's control are considered in evaluation of faculty. This is important because substantial evidence suggests that students evaluate faculty based on a myriad of factors, not all of which are controlled by the faculty (Isley & Singh, 2005). Resistance to administering teaching evaluations online rather than in class likely arises from the fact that this new method adds one more variable not under control of the faculty into the overall process. In order to gain increased acceptance of the use of teaching evaluations by faculty, we must explicitly recognize, and account for the factors, which are not under control of the instructor, but are used by students to evaluate faculty.

Our paper has six sections. Immediately following this introduction we present a brief literature review summarizing the benefits and concerns of evaluating faculty online. Section III describes the methods we use to analyze data. Data are presented in section IV, and a statistical analysis is presented in Section V. Conclusions are in Section VI.

BACKGROUND

Many factors influence how students evaluate their instructors. These factors may generally be broken down into three components: student characteristics, instructor attributes, and institutional and classroom settings. Past research has shown that some of the most important student characteristics that contribute to predicting student

evaluations include expected grades (Nowell, 2007), individual grade point average and student major. Classroom characteristics include time of day, class size, subject matter, and class level (Millea & Grimes, 2002). Of course instructor organization, clarity, availability, and knowledge of subject (Marsh & Roche, 1999) have been demonstrated to also be important. The difficulty in using student ratings to evaluate instructor performance is that instructors control only a few of these items. When conducting faculty evaluations, it would be appropriate for administrators should control for differences not directly under the faculty members control.

Recently, a debate has been taking place on whether the online evaluation of faculty is one of the institutional settings that influence student ratings of faculty. Two questions have been paramount: The first question is whether mean ratings of faculty performance differ when using online and in-class surveys. The second question is how the lower response rate of online surveys impacts the evaluation process. Most findings regarding the comparability of on-line and in-class evaluation of faculty generally identify few significant differences in mean ratings (Layne et al., 1999; Dommeyer, 2004; Avery et al., 2006; Ardalan et al., 2007), although a few exceptions do exist (Kulik, 2005). These studies present valuable evidence on the comparability of online and face to face evaluation methods. Still, are these studies were conducted with either a one-way analysis, or by controlling for very limited factors. None of these studies control for many of the well documented factors that influence teacher evaluations such as class sizes and expected grades. As to the question of response rates, it is clear that when evaluations are conducted online, response rates are lower (Sax, 2003).

Based in part on the findings that mean ratings do not differ between online and in-class evaluations, the use of online evaluations has grown rapidly. Anderson et al., (2006) reported that the percentage of universities conducting evaluations online increased from 2% to 33% between the years 2000 and 2005. This growth reflects the many advantages of online evaluations. Dommeyer, et al. (2004), note that significant cost savings are achieved when moving to online evaluations, but perhaps more importantly online evaluations may reduce some of the influence that faculty have over in-class evaluations. Standardization of the evaluation process may reduce the variation of responses due to who administers the evaluations in class, and the activities that take place in class just prior to the evaluation.

Despite the growing popularity of online evaluations, faculty members appear to be hesitant about the idea. This hesitancy stems from the lower response rates (Sax, 2003), and the concern that lower response rates have the potential to create bias if the students who complete the online evaluations are significantly different from the students who are enrolled in the course. When evaluations are conducted in class, the cost of completing evaluations for students in terms of time and effort are almost zero. When evaluations are moved online, students must take additional time out of in-class time to log in and complete the evaluation. Students will only complete the evaluation when they feel the benefits of completion outweigh the time and effort it takes to complete the evaluation. As a result, one would predict that students who have strong positive or negative feelings toward the professor will be more likely to complete the survey instrument. Based on this, we hypothesize that although differences in the mean ratings are not predictable, the variance of responses in the data collected online will be greater than the variance of data collected in class with paper and pencil, and the sample size will be smaller.

The increased variance of individual responses and the decreased sample size are extremely important when student evaluations are used for the evaluation of faculty. In order to differentiate faculty based on their teaching, small differences in overall ratings may be explained by differences in the quality of instruction, but may also be due to the sample variation in the data collected. Generally, if we focus on statistically significant differences in average evaluations we are focusing on differences due to factors other than sampling variation. Online evaluations increase the variance of individual responses and decrease the sample size, both of which increase the variance of the sample mean. These both make it much more difficult to find significant differences between sample means. The predictable result of moving to online evaluations therefore is that it will become more difficult to use numerical evaluations to differentiate instructors based on quality of instruction. The error component of the evaluations will increase relative to the component explained by teaching quality. This is why controlling for as many possible sources of variation is paramount. By controlling for multiple sources of variation, the error variance is reduced, making it less difficult to focus on statistically different differences.

METHODOLOGY

During the last week of the spring semester 2008 we asked students at a large public university for information about their classroom experiences. The survey was conducted in twenty-eight separate courses, taught by fifteen different faculty members in economics, finance and quantitative analysis. A faculty member went to each class and read a set of instructions on how the faculty evaluation would be conducted. Half of the classes were told that their evaluation would be done online and were given a URL which linked to the evaluation. In order to increase response

rates every student was sent three reminders to his or her e-mail address explaining how to complete the evaluation with a link to the actual evaluation. In the other classes, after instructions were given, evaluations were conducted using the exact form as in the online classes.

Our data differs from much of the published work in this area because our unit of observation is the individual student rather than the individual class. The result is that our sample size is larger than what is found in most studies. After eliminating observations that were not complete we have a total of 279 pieces of information.

The first page of the instructor evaluation form asked students about five dimensions of instructor quality: organization, willingness to respond to students, availability, respect for students, and the overall contribution of the instructor. Students ranked their instructors on a scale of 1(low) to 7 (high) in each category. The second page of the student evaluation form asked students to rate the quality of their instructor on a scale of 1(low) to 5(high). We analyze the data in two different ways. First, similar to McPherson (2006) we used the average of the five responses (SET) as the measure of the students' satisfaction with their instructor. We use linear regression to analyze this data. Second, we estimate the models using only the responses to the question regarding the overall quality of the instructor using an ordered probit regression suitable for this type of data (Greene, 2003). We found little differences between the two types of analysis.

DATA

Based on prior research into the factors that influence SET ratings we collected data on average expected grades (EXGRADE), class size (SIZE), level of class (LEVEL), where a value of 0 indicates a lower division class and a value of 1 indicates an upper division class. We also collected data on the number of times the class met per week; once, twice, or three times (MEET), and the subject matter taught: economics, finance, or quantitative analysis. We used two dummy variables, one for economics (ECON) and one for finance (FIN). Courses taught in quantitative analysis were used as the baseline comparison group. The variables ECON and FIN take on a value of 1 if the class was in the identified field and zero otherwise.

In order to control for instructor characteristics, we use two approaches. First we use two broad, albeit incomplete, measures of faculty characteristics. This allows us to indicate whether the faculty member is a permanent member of the university or is an adjunct faculty member. The variable ADJUNCT takes on a value of 1 if the faculty member is part-time faculty and a value of 0 if the faculty member is a permanent employee. The second measure is the number of years the faculty member has been teaching at the university where the study was conducted (YEARS).

We recognize that these two measures are inadequate to describe the multiple dimensions of instructor attributes. A far better approach would have been to gather data on a wider array of experience measures, information on teaching styles, and all the other inputs that more accurately describe individual variations in teaching. Because this is likely an impossible task, we perform a separate analysis simply which uses indicator variable for each of the fifteen faculty members involved in the study. Rather than trying to measure all the inputs into teaching, we simply control for the style of each instructor by including variables to reflect the fifteen instructors in the study. We use the following notation: T1 stands for instructor one, T2 stands for instructor two and so forth out to T15 for instructor fifteen.

We use these variables to explain two alternative measures of teaching effectiveness: the average of the five instructor characteristics (SET1), and the overall instructor evaluation (SET2). Means and variances of all data collected are given in Table 1.

ANALYSIS

Prior to a detailed analysis of the data we perform three simple tests on the dependent variables. Using SET1 we test if the mean scores from the online evaluations differ from the mean scores from in-class evaluations. The mean of SET1 for evaluations conducted in class was 5.71 with a variance of 1.23. The mean of SET1 for online evaluations was 5.46 with a variance of 1.80. Testing $H_0: U_{\text{online}} = U_{\text{in-class}}$ against a two sided alternative with a simple t-test yields a test statistic of $t = 1.47$ which is not significant at $\alpha = 0.10$. In this test, where we assume the only explanation for difference in average SET rankings is due to the method of evaluation, we fail to reject H_0 and conclude no differences exist between online and in-class evaluations. These findings are similar to most past studies on this topic.

The second test we perform is a test for equality of variances on SET1. We hypothesized that variance of the evaluations conducted online would be larger than the variances of the evaluations conducted in class. Using an F-test for the equality of variances we test $H_0: \sigma^2_{\text{online}} = \sigma^2_{\text{in-class}}$ again using a two sided alternative. The test statistic

is $F = 1.46$, which is significant at $\alpha < 0.05$. As expected the variance of evaluations collected in an on-line setting is greater than the variance of evaluations collected in an in-class setting.

The third test we conduct at the onset is a test of independence using the variable SET2. The purpose of this test is to examine whether the distribution of responses to the question asking students to evaluate the overall quality of their instructor on a one to five scale is independent of method of evaluation; in-class and online. This test is conducted with the χ^2 distribution. The null hypothesis of the test is that responses and method of data collection are independent. Table 2 presents the data used for the test. The data show that regardless of the method of data collection, a large percent of respondents evaluate their instructors favorably. In the face-to-face evaluations 76% of students give their instructors a score of 4 or 5 out of a possible 5, and in the online evaluations, 74% of students give their instructors a grade of 4 or 5. As would be expected from the data, the resultant χ^2 test statistic of 1.211 is not significant at $\alpha = 0.10$.

This preliminary data analysis leads one to believe that the method of evaluation does not influence average SET ratings or the overall distribution of SET ratings. Only the variance of responses is significantly impacted. Although this makes it more difficult to distinguish meaningful SET rankings between faculty, we are still left with the conclusion that no bias is created through the method of administering evaluations, on-line or face-to face.

We now turn to the more complicated question of explaining SET ratings using regression analysis, which lets us control for many of the factors that influence SET ratings. We first analyze average teaching evaluations using student, class, and instructor characteristics. First, we use the data in Table 1 to estimate the equation

$$SET1 = B_0 + B_1 \cdot ONLINE + B_2 \cdot EXGRADE + B_3 \cdot SIZE + B_4 \cdot LEVEL + B_5 \cdot MEET + B_6 \cdot ECON + B_7 \cdot FIN + B_8 \cdot ADJUNCT + B_9 \cdot YEARS + U,$$

where U is the error term, B_i are the coefficients estimated in the regression analysis for each of the explanatory variables defined previously. Estimated coefficients represent the predicted change in the average SET rating for a one- unit change in the explanatory variable. The estimated coefficients and their associated t-statistics are presented in columns two and three of Table 3.

We analyze a second equation, where rather than attempting to control for instructor characteristics we use an indicator for each of the instructors. We randomly omitted a single instructor so that all estimated coefficients are interpreted as the difference between instructor one and the instructor identified in the table. We estimate the following equation

$$SET1 = B_0 + B_1 \cdot ONLINE + B_2 \cdot EXGRADE + B_3 \cdot SIZE + B_4 \cdot LEVEL + B_5 \cdot MEET + B_6 \cdot T2 + B_7 \cdot T3 + B_8 \cdot T4 + B_9 \cdot T5 + B_{10} \cdot T6 + B_{11} \cdot T7 + B_{12} \cdot T8 + B_{13} \cdot T9 + B_{14} \cdot T10 + B_{15} \cdot T11 + B_{16} \cdot T12 + B_{17} \cdot T13 + B_{18} \cdot T14 + B_{19} \cdot T15 + U.$$

As with the prior equation, U is the error term, B_i are the coefficients estimated in the regression analysis for each of the explanatory variables. Estimated regression coefficients are interpreted in the same manner as in the first equation. Results from this equation are presented in the forth and fifth columns of Table 3.

As expected, all else equal, grades and student SET ratings are positively correlated. Students do reward instructors for higher grades. Controlling for instructor and student characteristics, the students who completed evaluations online gave their instructors significantly lower ratings as compared with students who completed their evaluations in-class. Ratings in online classes are predicted to be 0.69 points lower in the equation using instructor characteristics and 0.81 points lower in the equation identifying instructors individually.

As class size increased, all else equal, evaluations significantly declined. The impact of class level on SET ratings is not clear. When we fail to completely control for the individual instructor differences as shown in columns two and three of Table 3, upper division classes are rated significantly higher, but, as shown in columns four and five of Table 3, that difference is not significant when we control for individual instructors. The same result is found for the relationship between the number of times a class meets per week and SET ratings. When we do not control for individual faculty differences, a significant negative correlation exists between weekly class frequency and SET ratings. This difference becomes insignificant as we control for individual faculty differences.

In the fourth and fifth columns of Table 3, where we control for faculty differences, each coefficient measures the average difference between the faculty member and faculty member number one, who had the highest predicted SET ratings. The coefficient on the variable $T4$ equals -1.48 indicating that on the scale of 0-7, instructor four had average scores 1.48 points lower than instructor one. Notice that there are only three instructors ($T4$, $T12$ and $T13$) that have significantly lower scores than the top rated instructor, $T1$.

Now we turn to the analysis of SET2 using ordered logit. Remember, SET2 is measured on a scale of 0-4, where increasing SET ratings correspond to higher teaching ratings. We estimate these equations using the same explanatory variables as we did in the linear regression equation, and present the results in Table 4. Estimated coefficients in the ordered logit model cannot be interpreted in a similar manner as in the multiple regression equation. Estimated coefficients do not represent the change in the dependent variable for a one unit change in the explanatory variable; however, it is generally the case that the sign of the estimated coefficient indicates the direction of the dependent variable as the explanatory variable changes.

The results in Table 4 are similar to the results presented in Table 3. Expected grades and years spent teaching are directly related to higher SET rankings. Class size and having evaluations administered online are negatively related to SET ratings. Regardless of exactly how we measure student ratings of teaching, online evaluations result in significantly lower SET ratings than when evaluations are done in class.

CONCLUSION

Faculty are leery of how SET ratings are used for evaluation purposes. Suspicion exists on how accurately mean rankings measure teaching quality. Many instructors feel these ratings reflect many other factors besides the quality of their efforts. Instructors are correct in supposing that a multitude of factors determine SET ratings, and that their actual performance is only one of those factors. The multiple regression analysis shows that many variables influence SET scores. An interesting question, which is left unanswered at this point, is whether after controlling for all of the factors not under the teachers control will a different ranking of faculty result.

To answer this question we use the regression analysis conducted with average teaching evaluation, SET1, as the dependent variable. The estimated coefficient for each instructor variable represents the estimated difference between the identified instructor and the base instructor, instructor one. These estimated coefficients, found in columns four and five of Table 3, show how SET rankings differ if each instructor had the same class size, had their evaluations conducted in the same manner (online or face-to-face), had students with the same expected grades, taught classes at the same level, and had the same number of meetings per week.

Notice all estimated coefficients on the instructor variables in columns four and five of Table 3 are negative, indicating the data have been arranged so that teacher one, who was excluded from the regression equation, has the highest predicted ratings. The largest (in absolute value) coefficient of -1.48 is associated with instructor three. This indicates that holding all explanatory variables not under the instructors control constant, instructor three's estimated SET rating is 1.48 points below that of instructor one.

Table 5 shows how dramatically relative instructor ratings can change when we remove the impacts of factors not under the instructor's control. The first column of Table Five lists each of the 15 faculty members. The second column gives their raw SET ranking and the third column gives their adjusted SET ranking holding all variables constant. The highest rated teacher before adjustment is teacher fifteen. After adjustment, teacher fifteen's ranking falls to tenth.

Consider instructor one, who was ranked eleventh out of the fifteen instructors based on the raw evaluation scores. Instructor one taught larger classes than average which lowered her evaluations. Teacher one was regarded as a tough grader, the average expected grades of her students were below average, and teacher one had a larger percentage of her evaluations completed online than average. Teacher one's relatively low unadjusted rating resulted from these factors over which she had no control. When we ask how her relative SET rating would change if she taught classes that of average size, had students with average grade expectations, and had the same percentage of her evaluations conducted online as the other teachers we see that she would become the top rated teacher.

Teacher fifteen on the other hand was teaching small classes at the upper division and had a larger portion of his evaluations conducted in class. Teacher fifteen's high raw scores include the benefits derived from these advantages. His evaluations cannot be directly compared with those of instructor one. In order to compare the performance of these two instructors we must know what would happen if they were compared on equal terms. Table 5 clearly demonstrates that if we control for all these factors a different picture emerges. Teacher Fifteen's relative ranking falls to the extent that he is no longer in the top half of all teachers.

Table 5 demonstrates the importance of why a detailed analysis of SET ratings is important in faculty evaluation. By simply using raw means, which are often what is included in tenure and evaluation files, an incomplete picture is drawn. Using a multiple regression analysis it is simple to set all uncontrollable variables constant for all teachers and then recalculate SET ratings.

The benefits from this type of analysis should help ease the concerns of faculty members who claim that the use of teacher evaluations encourages grade inflation. Of course, if we use unadjusted mean ratings giving higher

grades will likely improve numerical teacher evaluation scores; however, we can adjust for these affects and remove the incentive to give higher grades.

This paper provides new evidence that conducting evaluations online does influence student evaluation of teaching scores. We underscore the importance of controlling for factors not under the instructors control when using SET ratings for faculty evaluation. We do not suggest that moving to online evaluation is problematic, only that it is difficult to compare evaluations done online with evaluations done in-class. We do not suppose that one method is “more accurate” than another. We believe that institutions would benefit from either moving all evaluations online or by continuing to do all evaluations in-class.

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Table 1. Means and Standard Deviations		
Variable	Mean	Standard Deviation
SET1	5.64	1.18
SET2	2.98	.97
ONLINE	.30	.45
EXGRADE	4.12	.80
SIZE	34.53	13.84
LEVEL	.30	.46
MEET	1.75	.64
ECON	.44	.50
FIN	.26	.46
ADJUNCT	.25	.43
YEARS	9.89	6.39
T2	.02	.10
T3	.10	.30
T4	.03	.17
T5	.03	.16
T6	.03	.16
T7	.07	.25
T8	.17	.38
T9	.04	.20
T10	.14	.35
T11	.05	.22
T12	.09	.29
T13	.07	.25
T14	.08	.29

T15	.04	.19
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Table 2. Student Responses by Method of Survey

Overall this INSTRUCTOR was...

Response	Face to Face Evaluations	Online Evaluations
Ineffective	6	4
Less that Effective	5	3
Satisfactory	36	14
Effective	85	36
Very Effective	66	24

Table 3. Regression Results using SET1

	Equation One		Equation Two	
Variable	Estimated coefficient	t-ratio	Estimated coefficient	t-ratio
Constant	3.02**	4.75	5.71**	3.42
ONLINE	-.69**	-4.04	-.81**	-2.03
EXGRADE	.58**	7.19	.56**	6.86
SIZE	-.02**	-2.06	-.03*	-1.73
LEVEL	.48**	2.09	-.15	-.35
MEET	.24*	1.93	-.12	-.54
ECON	.26	.99		
FIN	-.21	-.91		
ADJUNCT	.12	.58		
YEARS	.04**	2.22		
T2			-.63	-.79
T3			-1.48**	-3.04
T4			-.01	-.01
T5			-.55	-.96
T6			-1.16	-1.1
T7			-.40	-.55
T8			-.65	-1.48
T9			-1.33	-1.44

T10			-.05	-.12
T11			-.94**	-1.96
T12			-1.25**	-2.06
T13			-1.03	-1.25
T14			-.51	-.80
T15			-.96	-1.29
Significance Level	P<.001		P<.001	
Chi-squared				

Table 4. Regression Results using SET2

	Equation One		Equation Two	
Variable	Estimated coefficient	t-ratio	Estimated coefficient	t-ratio
Constant	-.65	-.96	3.92**	3.42
ONLINE	-.71**	-3.79	-1.35**	-2.03
EXGRADE	.62**	7.02	.61**	6.86
SIZE	-.03**	-2.97	-.06**	-1.73
LEVEL	.44*	1.83	-.43	-.35
MEET	.28**	2.14	.03	-.54
ECON	.34	1.22		
FIN	-.28	-1.15		
ADJUNCT	..34	1.51		
YEARS	.06**	2.92		
T2			-2.58**	-2.73
T3			-1.06	-1.17
T4			-2.48**	-4.43
T5			-.21	-.30
T6			-1.12*	-1.75
T7			-2.64**	-2.16
T8			-1.52*	-1.80
T9			-.95*	-1.89
T10			-2.38**	-2.24
T11			-.52	-1.11
T12			-.54	-1.01
T13			-1.87**	-2.69
T14			-1.23*	-1.69

T15			-1.83**	-2.16
Significance Level	P<.001		P<.001	
Chi-Squared				

Table 5. Teacher Rankings Comparison		
Teacher	Unadjusted Rank	Adjusted Rank
Teacher One	11	1
Teacher Two	8	7
Teacher Three	14	15
Teacher Four	2	2
Teacher Five	13	6
Teacher Six	7	12
Teacher Seven	6	4
Teacher Eight	9	8
Teacher Nine	4	14
Teacher Ten	3	3
Teacher Eleven	15	9
Teacher Twelve	12	13
Teacher Thirteen	10	11
Teacher Fourteen	5	5
Teacher Fifteen	1	10

VALUES-BASED TEACHING EXPECTATIONS AND EVALUATIONS

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ABSTRACT

Saint Leo University has developed teaching expectations based on its core values of excellence, community, respect, personal development, responsible stewardship, and integrity. Observable and assessable teaching behaviors have been assigned to each value. The University is unique in that it has a small student population on its main campus, but offers degrees in regional locations in six states and on the Internet. All instructors, online and in the classroom, as well as all adjuncts, are expected to model good instructional techniques. Evaluation instruments such as course observations, and end of course student evaluations, are correlated to the values as outlined in the teaching expectations. This presentation will explain the process of relating teaching behaviors to values, the development of instructor assessment instruments, and university outcome expectations

INTRODUCTION

Universities in the United States are striving for academic excellence. Better prepared students obtain the best jobs, make the best salaries and understand the ethics and expectations of the workplace. What better way to prepare students for successful careers and lives then to raise the expectations for university teachers?

Saint Leo University was founded in 1889 by the Order of Saint Benedict of Florida. The University is accredited by the Southern Association of Colleges and Schools and offers Associate's, Bachelor's and Master's Degrees. The Benedictine Core Values of excellence, respect, community, personal development, responsible stewardship and integrity are infused into all aspects of teaching and learning at the university, including curriculum and teaching expectations.

A committee, established at the direction of the Vice President of Academic Affairs, was charged with defining good teaching in the university environment. Because Saint Leo University has a main campus of 1,400 students and another 13,000 at various regional locations and online, the committee addressed online and on-ground teaching, as well as full-time faculty, teaching staff and adjunct instructors. The committee's findings and recommendations now extend to a university-wide directive to improve and model good teaching behaviors for all modes of delivery. Clear standards for teaching expectations are outlined and developed within the context of the Benedictine values, which are at the core of the University's commitment to its students.

BODY OF THE MANUSCRIPT

In the book *Courage to Teach*, Parker Palmer states: "Truth is an eternal conversation about the things that matter, conducted with passion and discipline" (Palmer, 1998). The things that matter are taught in the classroom as well as in the home. Academe has a responsibility to teach the things that matter as part of the curriculum.

Traditionally, we teach values by having them (Morrison, 2001). There is no formal organization or system. We know how we should act, and we expect our students to absorb by osmosis the same values that we hold. At Saint Leo University the expectation of inferentially absorbing values is not enough.

University teaching expectations involving values, as well as University support for values for students, faculty and staff; is often provided through a variety of social contexts. They include encouraging volunteerism, community service projects, addressing safety issues, civil rights, and embracing "humanism" or "the public good" (Morrison, 2001). But, they represent the social aspect of values, not the connection to values within the context of the curriculum or in the delivery of the content.

So how are values expressed and connected to teaching behaviors? Each Core Value is expressed as examples of good teaching and instructional expectations. The core value of excellence, for example, is exhibited in instruction by teachers who clearly state goals or objectives for the instructional session, implement lessons that utilize varied motivational strategies, give clear directions, and organize steps in the lesson to ensure learning. Excellence is also exhibited by communicating knowledge of subject matter in a manner that facilitates student

learning, and demonstrating the ability to analyze difficult concepts and presenting those concepts as component parts.

Another value important to the University is responsible stewardship. Responsible stewardship is often aligned with environmental or fiscal issues. As a teaching expectation, responsible stewardship is reflected in the use of class time and instructional responsibilities related to learning. Responsible stewardship in instruction is managing time on task, using appropriate technology to enhance learning, maintaining smooth and efficient routines, using learning time effectively, monitoring the learning environment, and guiding students in the application, retention, and transfer of course content to their personal and professional lives.

The classroom environment, on-ground or on-line, is the domain of the instructor. But the content delivered and student learning is the responsibility of the University. To provide consistency of subject matter and quality of instruction, the University has established a variety of evaluation and observation instruments. The observation and assessment of courses and instructors is carried out on a rigorous schedule for the main campus, online courses, and in regional centers.

Evaluation Instruments

Instruments that are used for faculty and adjunct assessment include in-class observations, on-line observations, student end-of-course evaluations, senior exit surveys, master syllabi and professional portfolio evaluations.

All evaluation instruments have been analyzed for their adherence to the teaching behaviors connected with the values. Many behaviors, such as those relating to respect and community, are critiqued by students and reflected in the student end-of-course evaluations. All faculty and adjuncts receive a copy of the end of course evaluation summary.

Student comments are also recorded and given to instructors. For example, at the end of a course students are asked to comment on the quality of feedback from the instructor. Questions asked include: the instructor responded effectively to student questions and the instructor's feedback in this course was helpful. They are used to demonstrate that the instructor was respectful to students and answered students' questions in a manner that promoted learning and did not humiliate them personally.

Other instructional behaviors are evident in class observations. Peers, deans and department chairs can observe value-driven behaviors, such as those related to excellence, by observing how the instructor communicates directions, prepared the lesson, answers student questions, and effectively uses class time.

Evaluation Schedule

To ensure that faculty members and adjuncts model good quality teaching behaviors, the University has established a rigorous assessment process. Twenty-five percent of all continuing faculty and adjuncts are evaluated each year. In addition, all new faculty and adjuncts are evaluated during their first year of employment. The task is challenging since during any one semester there are as many as 800 adjuncts and 150+ full-time faculty members.

Full-time faculty, department chairs, and deans participate in the assessment process for on-line and on-ground observations. Before an observation, the observer contacts the adjunct or faculty member to be observed. An observation form is sent as soon as the initial contact is made. An agreed upon class, date and time is confirmed. The faculty member or adjunct is observed and the observer follows up with a phone call, email, and the completed observation form. The observation is discussed and the observed faculty member signs the form. The completed and signed form is then sent to the Vice President of Academic Affairs.

The process began in 2006-07. The process was better defined in 2007-08 and targeted specific categories of adjuncts to be evaluated, including: newly-hired adjuncts, all adjuncts who received either very high or very low student end-of-class evaluations, or annual-contract faculty. As of June 1, 2008, 272 evaluations were completed (191 of were adjunct faculty) which is 94% of the 288 targeted observations to be conducted before August 15, 2008.

During the school year, centers offering classes are visited and usually several observations are done in one night. Online course observations can be made anytime during the school year or during the summer. The evaluation process can be time consuming and often takes time away from other administrative duties and responsibilities for those responsible for the observations.

Outcomes

The concept of teaching expectations as part of the Saint Leo core values has been a huge step within the university. Teaching expectations have been presented using a formalized methodology so that connection to the values is evident to both students and instructors.

The assessment process, based on teaching expectations and core values has been initiated to develop and maintain highly skilled instructors. Saint Leo is a teaching institution and the continuous assessment of teaching and learning is of primary importance.

The committee originally responsible for defining the teaching expectations is now a permanent committee of the University named the Teaching Excellence Committee. The purpose of the Committee is to foster and actively support teaching excellence throughout the university. Members of the committee will continue to research the scholarship of teaching and learning. They will explore, document, and clarify the connection between teaching excellence and Saint Leo University's Core Values. The Committee will support staff development initiatives in college-level instruction, as well as create multidisciplinary conversations about teaching and learning to foster improved student success. The Committee is also charged with contributing to the creation, maintenance, and improvement of methods for assessing teaching in support of the work of the University Senate Assessment Committee and the University's Office of Assessment & Institutional Research.

Saint Leo University is a teaching institution and a community of learners. The model of a community that we hope to approach is one that can embrace and guide the mission of education, which includes knowing, teaching and learning (Parker, 1998). A structure and specific expectations have been created to support and improve teaching that will ultimately support the learner.

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ACCOUNTING AS A DISCIPLINE: AACSB ACCOUNTING AND ELITISM

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ABSTRACT

Whether accounting is a discipline is an issue that has been debated for over 80 years. The authors use the differences between AACSB process for business program accreditation and the process for the additional requirements for accounting, and the relative reputation ratings as a simplified method to analyze the issue.

INTRODUCTION

Accounting as a discipline was most famously discussed in the commentaries of Fellingham [2007] and Demski [2007] but the debate has gone on since the 1920's according to Van Wyhe [2007]. Indeed Fellingham [2007] opens his account with "more than 80 years ago, Henry Rand Hartfield (1924) addressed the American Accounting Association and asked, 'Is accounting an academic discipline?'" The major premise of the argument is that if accounting research is not highly valued at the most prestigious programs then eventually the academy will treat accounting as not worthy of being its own discipline. Each of the authors cast doubt the premise.

The goal of this paper is to add to this discussion using data that is readily available to the public. Issues of prestige, elitism, research and accreditation are discussed. The AACSB has two sets of accreditation requirements, so we can use the differences between them to test the prestige of institutions. The AACSB accredits business programs as a whole and have a separate voluntary accounting accreditation that has additional requirements. We checked the prestige of institutions that obtained the additional accounting accreditation compared to programs that are accredited for business.

ACCREDITATION

Espiritu [2007] says that accreditation in higher education is a process of self- and peer-review to ensure that the institution meets and maintains good quality academic standards" There are two types of accreditation that is important to business schools [Hardin and Strocks, 1995].

The first, regional accreditation concerns the entire institution not just the business school. The Council of Higher Education Accreditation (CHEA) coordinates the accreditation process nationally and reports to the Department of Education and Congress. The country is divided into six regions with an accrediting body to provide the basic evaluation of the schools within their geographic region [Espiritu, 2007]. Federal funds can only be used at institutions with regional accreditation. Loss of accreditation prevents even student loans from being made.

The second type of accreditation is business specific. Several accrediting organizations exist, but the major organization is AACSB. The other organizations are remarkable for the competition. Unlike regional accreditation, business accreditation is voluntary. Thus not having accreditation may have marketing effects, but is not fatal

AACSB HISTORY

The AACSB was founded in 1916 by 17 leading public and private business schools. Their goal was to enhance the quality of education at the university level. These original 17 schools produce PhDs in business disciplines and even today can be considered elite institutions, as all but one are noted in the top quarter of the US News World Report listing of National Universities [Trapnell, 2007].

The Tullis and Varney [2007] noted that for many years only “top tier business programs at research-oriented universities” could meet AACSB standards. By the early 1990’s about 260 such programs existed. Henniginger [1998] noted that 900 schools with a teaching mission were not AACSB accredited and were locked out of trying.

A second organization was started in 1988, based on those schools with a teaching mission. The ACSBP were more accessible to “regional state and small private affiliated schools.” according to Tullis and Varney, [2007]. They further note that 2-year institutions represent over half of the members of ACSBP. ACSBP eventually split as some of the founders set up a third organization – IACBE in 1997.

The major effect of such competitive organizations was to force the AACSB to change their accreditation standards. Just three years after the founding of ACSBP, the AACSB changed their focus from primarily research to “mission-based” orientations. AACSB warded off the competition for 4 year institutions [Tullis and Varney, 2007]. One standard that changed concerned the definition of qualified faculty. To enforce these accreditation standards, AACSB originally required all schools to hire only faculty with PhD’s from schools that were members. [AACSB standards]. The newer standards allow for “academically qualified faculty” who hold PhDs outside their field, and for those without doctoral training but have substantial specialized training in their field supplemented by current research [Casile and Davis-Blake, 2002].

Perhaps that is a difference without a distinction. Yet, the ABA was sued on anti-trust grounds for limiting the ability of individuals to take the bar exam to those who graduated from ABA accredited schools. Last year, the ABA agreed to pay an \$185,000 fine for violating a 1996 court order that settled the anti-trust suit [Sniffen, 2007]. The success of this cartel effect is noted by the listing of US News and World Report listing of National Universities. Of the 262, 164 public and 98 private, national universities listed in their 2008 roster, only 43 did not have AACSB accreditation. Six did not have any business programs, six taught only bachelors of business programs, and twenty-eight had only MS or MBA programs.

ELITES

Fogarty and Markarin [2007] rightly note “prestige (status) is a challenging and controversial concept to measure. Prestige measured by several studies [Hasselback and Reinstein, 1995] who looked at both quality and quantity of research; Fogarty, [1995] who provided a meta-analysis of 32 other studies, and Fogarty and Markarian, [2007] who added their rankings together as a composite score. These were data intensive efforts.

As mentioned earlier prestige is a value associated with accreditation. Casile and Davis-Blake, [2002] note the higher number of other programs that are accredited, the more likely an institution will seek AACSB accreditation. The most elite universities are more likely to have more programs accredited throughout their institution. Further, they note, the higher the degree of tuition dependence, the more likely a school will attempt accreditation. Yet the highest prestige private schools are the ones with the highest endowments and are least dependent on tuition.

SAMPLE

There were 262 Best National Universities listed in US News and World Report, 2008. These institutions are based on categories developed by the Carnegie Foundation for the Advancement of Teaching in 2006. The Best National Universities are the major doctoral granting schools in the US, 43 did not have AACSB accreditation leaving 219.

The authors looked at the AACSB website for each of the 219 remaining institutions. Information was gathered from the AACSB website to determine whether the institution had [1] Just business AACSB accreditation or [2] the additional accounting accreditation.

In the sample, there were 219 programs identified with 99 institutions with just the business accreditation and 120 with both the business and additional accounting accreditation. This sample can be compared to the AACSB as a whole. There are 555 member institutions with AACSB accreditation, but 96 are outside the US leaving 459 US AACSB accredited programs. Of these 459 institutions, 42 grant only the bachelors degree in business leaving 417 members for the population; .with 248 have the business accreditation and 169 have additional accounting accreditation

The 219 total institutions of the sample represent 53% of the 417 AACSB accredited programs with both undergraduate and graduate degrees. The 99 institutions with just the business accreditation in the sample represent 40% of the 242 AACSB institutions with just business accreditation. The 120 institutions of the sample represent 71% of all the AACSB institutions with separate accounting accreditation.

OPERATIONALIZED MODEL AND RESEARCH QUESTIONS

The basic premise of this paper is that institutions that undergo the additional accreditation for accounting should be rated higher than those institutions that just receive the basic accreditation for business. Should that effect be noted, the idea that accounting is not worthy of being considered a separate discipline would be refuted. Furthermore, a second premise should be tested. There are ample differences noted in the way that accounting is treated in private versus public institutions. The ratings for those schools with the additional accounting accreditation which are private are compared to those which are public.

Finally, given that an organization [FSA] has been set up to push for the separate accounting accreditation, one would expect that the ratings of member institutions would be higher than those accounting accredited schools that are not members. The results of these questions are shown as follows.

R1: Ratings of institutions with Accounting will be higher than institutions with business only accreditation [R acct > R bus]

TABLE 1. *Accounting versus Business Accreditation*

	Accounting n	Average Rating	Business n	Average rating
Acct Q1	24	3.6792	39	3.9462
Sub Q2-Q4	96	2.7177	60	2.5583
Total	120	2.91	99	3.1050

Normally one would take z-test, but with the rating scores lower than the business scores, the test would fail on its face. However, with further study, one notes that the magnitude of the scores of the schools in the first quartile dwarf the rest of the programs to the extent that the underlying pattern is hidden. Using the one tail z-test for two sample for means with the first quarter excluded results in the following

TABLE 2. *Accounting Peer Ratings versus Business Peer Ratings*

	Accounting Peer Ratings	Business Peer Ratings
Mean	2.7177	2.5583
Known variance	0.1396	0.1103
Observations	96	60
Z	2.7778	
p	0.0027	

R2: Ratings of public institutions will be higher than private institutions for those members with the additional accounting accreditation [R private > R public]

TABLE 3. *Accounting Private Peer Ratings versus Public Peer Ratings.*

	Accounting Private Peer Ratings	Accounting Public Peer Ratings
Mean	3.135	2.865
Known variance	0.3024	0.2762
Observations	20	100
Z	2.0190	
p	0.0217	

Using the one tail z-test for two sample for means results in the following. The mean ratings of private schools that have the accounting accreditation are higher than the mean ratings of the public schools.

R3: Ratings of FSA accounting accredited programs will be higher than non FSA accounting accredited firms [R fsa > R nfsa]

TABLE 4. FSA Ratings versus Non-FSA Ratings

	FSA n	Average Rating	NFSA n	Average Rating
Q1	15	3.6467	9	3.7333
Sub Q2-Q4	61	2.6378	35	2.7943
Total	76	2.8658	44	2.9864

The z-test would fail as the average rating for the non-FSA schools are higher than the FSA schools. Taking the further approach of excluding the top quarter does not provide any additional data. Thus one can conclude that whether a school becomes a member of the FSA does not affect the mean ratings.

DISCUSSION

The basic premise of this paper is that institutions that undergo the additional accreditation for accounting should be rated higher than those institutions that just receive the basic accreditation for business. Should that effect be noted, the idea that accounting is not worthy of being considered a separate discipline would be refuted. This is the case for the programs in the 2-4th quartiles, but not overall as the elites differ.

Gatsby said that the rich are different from us. Once an institution has received the perception of being elite, its reputation takes on a weight of its own. PhD granting schools had a reason to join AACSB because of the cartel effect. They could preserve their ability to limit competitions to their programs and continue as they had. This is shown best by the penetration rate of AACSB for the business accreditation.

In gathering the data for this report, the authors looked at several factors not listed, including whether a program provided a PhD in accounting or just a business degree. Gathering the data seemed relatively straight forward as the degrees and types are listed in individual websites linked to the AACSB. Yet the elite programs were the most likely to have incomplete data.

Similarly, one sees that the private schools had the same reason to join the cartel for the business accreditation particularly if one notes the number of private institutions versus the public. There is five times the number of public programs with the accounting accreditation than the private schools. A handful of private programs have sought out the additional accreditation, but their reputations have already been made so that many other private institutions do not have a reason to go through the additional work. The public programs have seen the benefit for the additional effect.

Similarly, this additional work is seen in the membership in FSA. This result seems counter-intuitive as those schools that actively participate in an accounting forum designed for the accreditation process should theoretically score higher. Yet this underscores that once a business program becomes accredited, many schools perceive that there is no benefit for additional work in the accounting area. This mirrors the effect of not working any harder for the accounting accreditation for the elite programs after they are accredited for business.

CONCLUSION

The results in this paper supports the basis of Fellingham, and Demski that there is a disconnect between the elite programs and the accounting professoriate. This paper used a simpler method than Fogarty and Makarian to determine elitism by looking at data on comparing scores on reputations from US News and World Review of PhD granting institutions to the efforts of schools that have sought out a separate accounting accreditation from the AACSB.

Yet, given the difference between the elite programs and the professoriate, the next question is what is to be done. Should the accounting professoriate want to be the same as the elites? The efforts shown by the additional work conducted by programs in the 2nd-4th quartiles are reflected in the reputation scores. Once schools reach a certain reputation score, their effort slacks off. This is further shown in their data maintenance in the websites of the AACSB and in their membership in FSA. Further, the efforts of public schools, which tend to be more tuition-driven, are not reflected as highly as private schools. Yet the public institutions are spending the additional time and effort to both join FSA and go for the additional accounting accreditation. One can thus ask the final question. Given the difference, should the accounting professoriate change or should the elites?

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SUCCESSFUL READING STRATEGIES FOR CONTENT AREAS

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ABSTRACT

Many of the elementary, intermediate and secondary school students continue to struggle to read and comprehend text. They do not or can not use strategies to improve reading comprehension. Excellent readers, on the other hand, have a cache of techniques they use automatically when they read. For example, they know how to activate prior knowledge, question the text and draw conclusions. What can teachers do? Teachers can model and teach students how to use these techniques across grade levels and across content areas. These techniques conform to the Sunshine State Standards and can be adapted for ELL and ESE students.

INTRODUCTION

Teaching reading in the content areas has been mandated for teachers in the past few years. Some teachers in content areas have resisted this decree. They feel that they are responsible only for the content area. However, students who struggle to comprehend text continue to study in every content areas. In order to understand text, students must construct meaning. Reading strategies can help them to do so in every content area and across all grade levels. Learning and retention occurs when the brain makes connections to the content. The more connections the brain can make, the greater the likelihood that learning occurs. Many of the skills that are taught and tested in reading and writing are the very practices that students should be using, mastering, and learning to apply automatically to content across the curriculum (Jones & Thomas, 2006).

Reading Strategies

The reading strategies listed here are adaptable to other content areas. They all have in common the principles of gathering information and plotting or graphing or picturing it in a way that is understandable and conforms to the curriculum for the particular content area. Each strategy has been used in the classroom and listed in reading journals. They are presented here as a ready list for content area teachers who are looking for ways to accept that reading strategies can truly help all students, especially those are struggling or overwhelmed by the amount of information that they must remember and analyze in the classroom. All of the strategies listed here have been developed by educators and complete references are made to all of them for the reader's information.

Comprehension Windows Strategy

This particular strategy developed by Mary Lee Bass and Deborah Gee Woo is very appealing and useful. It helps students to engage in predicting, questioning, visualizing, activating prior knowledge, self-monitoring, seeking clarification, and summarizing (Bass & Woo, 2008). By creating a physical prop using a manila folder that has been folded and cut and labeled with individual flaps for categorizing information, students can use 2" x 1.5" sticky notes to make headings for important information that they can easily refer to as they are reading and to review the text. It can be adapted for use in science, social studies and math class. For example, in social studies, student study the Civil War. Headings can include Battle Name, Important People and Results in a particular battle or from a story about the Civil War.

In Science, students can use the CWS strategy when they study processes, such as the caterpillar to butterfly. Younger students can decorate the flaps or include pictures on the back or additional vocabulary words from the particular text. Students can also use this tool in pairs and groups.

In Math, students could divide the headings to reflect the type of formula or computation they are studying. For example, the three flaps could have the headings of Word Problems, Addition and Subtraction. Inside the flap, students could list vocabulary words for word problems, sample addition problems and rules for subtraction.

After the teacher models this strategy and by consistent practice, this strategy can become part of the student's tool box of strategies to improve comprehension and to teach one way to organize information and data. This is a

guide. Inventive students will be able to come up with a variety of ways to use this tool. ESE and ELL students can also use this tool for vocabulary words in English and their native language and to list rules or facts that they can easily refer to on a daily basis. This strategy also meets the Sunshine State Standard LA.5.1.73-identify the main idea or essential message in grade-level text through inferring, paraphrasing, summarizing, and identifying relevant details.

Information Frames

The teachers of Reading and Writing might call these frames graphic organizers or story maps. They can be used very successfully in Social Studies because they answer the following questions: Where? When? Who? What? How? and Why? Students can list information on the horizontal chart and then put it together in a narrative. Since the headings are questions, students can answer in the box below or develop an answer chart of their own. On the left side of the chart in a vertical format, a list of words asks questions about setting, characters, plot/problem/goal, plot events, plot resolution/outcome and theme. It serves as a guide to list specific information. The same structure and questions can be used in English when students analyze the plot of a story or develop an idea or prompt for a paragraph or essay. An extension of this strategy is called a foldable. Students fold a piece of paper up to six times to create sections or headings, which they complete with a variety of information from the events in the sequence of a story to the parts of a science experiment to the steps they must remember when completing a math problem to the parts of a story plot.

In the Science Lab the steps in the experiment would fit into the plot or events part of the chart. The traditional story map can be used in the Science Lab for students to write up the results of the experiment. Retrieved August 19, 2008, from <http://www.readingquest.org/strat/storymaps.html>

The idea is that students and teachers start to share and trade these kinds of frames so that students see the crossover benefits and become familiar and comfortable with these tools. This strategy fulfills the Sunshine State Standard LA 5.1.77 Student uses a variety of strategies to comprehend grade level text. ESE and ELL students will benefit from this technique because they can refer to completed frames, develop frames in their native language and work with partners to review information from the frames.

Note Cards

This is a very portable strategy and I have tweaked its use here. The corner can be paper punched and a ring allows the student to carry the note cards easily. Of course, English students could use note cards to recall vocabulary words and write the definition on the back. An extension of that is for students to develop connections to words so that they have more meaning. Students can draw a picture of the word on the back, use it in a sentence that shows the meaning of the word or list a synonym for it. Additional connections can include a connection from the text or word to self, a connection from the text or word to other text or a word and a connection from the text or the word to the world. One of these connections could also be listed on the back of the note card.

When students study for a test, they can copy the words on the left side of a sheet of paper. On the right side they would list the information that they need to remember, such as definition, synonym, antonym, meaning in a story or steps in a process or the information that they had listed on the back of the note card. In the content areas of Science, Social Studies and Math, note cards can have many uses. In Science, students can list the steps they must follow in an experiment, the steps they must follow when they report the results of an experiment or the observations that they have made as a result of a science experiment. In Social Studies, students can list the cause and effects of historical events, the names of important leaders or a timeline with important dates. Students can lay the note cards in a line and quiz themselves on the correct sequence of dates and events. In math, students can list formulas and make up practice problems with the answers on the back. They can trade and share with other students to practice problems, especially word problems which can also be written on note cards. The math vocabulary is challenging for many students and these note cards can be so valuable in this context. The imagination can serve students well here as they invent other ways to use note cards to study, practice and review important information.

SUMMARY

This article has been written to develop a quick, easy guide for every teacher because even though content area teachers want to focus on content, students who struggle to read cannot master the content areas. By using and teaching these strategies students will be able to improve comprehension and focus on the content and achieve



success. Teaching a few comprehension strategies well is more effective than teaching many strategies poorly (Brown, 2002).

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USING AN INTEGRATED FINANCIAL AID MODEL TO ACCOMPLISH STRATEGIC OBJECTIVES

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ABSTRACT

In 1999, Princeton used their endowment to eliminate loans for entering freshman. This spending rippled unevenly throughout academia based differing schools' degree of selectivity and financial resources, their institutional strategic objectives and their resource allocations to reach those objectives. The authors discuss the component parts of financial aid allocation so that strategic planners can then efficiently allocate the type and timing of financial aid they offer to attract and retain students, manage selectivity, and/or increase revenue depending on strategic objectives.

INTRODUCTION

Princeton spent \$16-million from its \$8.5-billion endowment to eliminate loans from undergraduate financial aid. They used scholarships instead of loans, as a tactic to increase student quality to be reflected in their selectivity. The Ivy League institutions had been generally loath to embrace merit aid. (Brownstein, 2001). High resource institutions can afford to seek and enroll students of high quality without regard to cost. Similarly, highly selective schools with strong demand from students, have secure tuition revenue flows, minimizing their tuition dependency. In effect, the highly selective institutions are not constrained by student revenue considerations from managing financial aid to increase selectivity and enrollment. Highly selective schools with high resources are in the best of all worlds.

Admissions officials and educational consultants predict the Princeton approach will significantly escalate a "bidding war" for elite students. This approach will tilt the balance in favor of the most selective schools with highest resources over the schools that are not as selective and financially able and thus cannot afford to buy high quality students. The most price-sensitive students tend to react to better offers even among the selective colleges. Indeed, Princeton improved to number two in overall selectivity and tied for number one as the overall best national doctoral university (U.S. News & World Report, 2004). Over time, competitive pressures may push institutions with lesser resources toward offering more aid to the most talented students as opposed to people who are less talented but require more need.

The Princeton model of substituting scholarships for loans increased the selectivity of students without affecting their admission yield. Highly selective schools can focus on targeted students to increase their average ACT score or other measures of quality. If targeted students do not enroll, there are always additional qualified students waiting in line to be admitted.

Less selective institutions, with fewer resources, are subject to market driven effects of student choice, as these institutions cannot afford the same level of financial aid. The less selective institutions attract students who tend to be more price-sensitive and are less academically competitive so fewer of these students qualify for high levels of merit-based financial aid. Thus, the less selective schools tend to be more revenue driven and are more focused on the quantity of students instead of the quality, per se. While they would want the quality to be as high as possible, financially vulnerable institutions do not have the luxury of turning down able students. The definition of acceptable is focused on the minimum for lesser selective schools and on the maximum for the highly selective ones, as the admission process at less selective schools is influenced to a much greater degree by revenue.

Further, there is a stratification based on who schools view as their competitive peers. For example, Williams College does not compete for many of the same students as Princeton; and thus will not face immediate pressure to react. Yet, they said that would change if "Duke, Brown, or Swarthmore do it" according to Brownstein (2001).

Financial aid is comprised of several components with varying degrees of efficiency in attracting and retaining students. These components include loans, grants, work, work-study, and scholarship. This paper presents a

framework to help strategic decision makers determine which financial aid tactics to undertake based on their institution's competitive position and strategic objectives, including need and diversity.

REVIEW OF LITERATURE

Many scholars have noted how financial aid increases enrollment in college and affects students' choice among colleges and universities (Manski and Wise 1983; James 1988; Leslie and Brinkman 1988; Heller 1997; McPherson and Schapiro 1998; Dynarski 1999; Ehrenberg 2000; DesJardins, Ahlburg, and McCall 2002). The role of financial aid in student retention has received considerably less attention, though that is changing. St John, (1990a and 1990b) who focused on matriculation, is typical of the study of financial aid. More recently, others have joined him in researching how students respond to educational subsidies and price changes (St John, Oescher and Andrieu 1992; Andrieu and St John 1993; Somers 1993; St John 1994; Dynarski 1999).

St John and Starkey (1995, p 160) described the traditional approach as net price: tuition minus grants. Yet, the net price approach doesn't match reality, as it assumed 1), that tuition and aid have equal but opposite effects and 2), that all forms of aid have the same effect (Dresch 1975; St John and Starkey 1995). For example, tuition cuts increase enrollment more than increases in financial aid (Kane 1994), and students respond to some types of financial aid more than others St John (1990a, 1990b), Kane (1994), and DesJardins, Ahlburg, and McCall (1999 and 2002).

As St John and Starkey (1995, p 178) stated "students respond to a set of prices and subsidies rather to a single net price," thus disaggregating aid into its component parts is important. These component parts include grants, loans, work-study and other student related on-campus employment, and scholarships as shown in table 1.

TABLE 1 Components of Financial Aid

Components	Basis	Gift Effect	Notes
Loans	Need	No	Low impact on enrollment/retention Students underestimate value
Grants [Pell, SEOC]	Need	No	Federal nature limits the institution/recipient bond Students may treat them as entitlements
Tuition discount [internal grant]	Need	Yes	Internal transfer of money If not endowed - loss of revenue to school If endowed - accounting fiction
Work/study	Need	No	Academically related to acclimatize students Effective in early years
Other work	N/A	Yes	Non-academic Effective in later years
Scholarships	Merit	Yes	High effect on retention

DesJardins, Ahlburg, and McCall (2002) found loans to have less impact on retention than student employment earnings. They found that effect surprising as they expected loans to represent larger cash equivalents to the student (because of the work that needs to be exchanged for the earnings), but they noted that it may be because the majority of loans were unsubsidized in their study. A subsidy value of one-third to one-half is typical, but Bund (2001) noted 80 percent of students surveyed underestimated the value of their loans. Kane (1999) stated that extra gift aid to be more effective than a similar extra dollar of loan aid to convince students to experiment with college.

DesJardins, Ahlburg, and McCall (2002) found that grant aid, which does not have to be repaid, does not have a significant overall effect in changing student attrition. This is notable given that grants are the second largest source of federal financial aid for college according to McPherson and Schapiro (1998). Grants are need-based, and the federal government provides the bulk of money through Pell and Supplemental Educational Opportunity Grants. Yet, the primary nature of federal government funding may interrupt the bond between the institution and the student and thus lessen the impact of grants on retention. DesJardins, Ahlburg, and McCall (2002) estimate that since most grants are mean-tested, students may perceive these forms of aid as entitlements.

Work-study payments are need-based and consist of academically related jobs that pay wages at least equal to the federal minimum wage. Typically about 90% of work-study jobs are on campus in a student's early years, though in later years they could be off-campus internships according to DesJardins, Ahlburg, and McCall (2002).

Similar to work-study is traditional student employment like cutting grass and working in the cafeteria. This form of student employment is funded from the institution's general funds. Work-study differs from student employment in that work-study is need-based while student employment is not; and work-study is administered through the Financial Aid Office, while on-campus employment is administered through the human resources department and paid through the university payroll system. The perceptions of students on the two forms of student employment aid change the effect on retention. Tinto's (1975) student integration model predicts a greater impact on retention by work-study programs because of the closer link of students into the academic life of the university than the types of jobs offered by student employment.

DesJardins, Ahlburg, and McCall (2002) noted that work-study had the second largest impact on retention in the first two years of college (behind scholarships). They found that work-study helps integrate students into the institution as predicted by Tinto; but this effect wanes and then earnings from campus employment, which is not need-based, have a larger impact on retention. Once students are integrated into the institution, the fact that student employment is institution funded, and not need-based, may create a gift-exchange relationship that may not exist with federally funded work-study jobs.

Scholarships have the greatest effect on retention as DesJardins, Ahlburg, and McCall (2002) believe "that providing scholarships to students not only has a pecuniary effect, but also a psychosocial effect." They say that scholarships create a gift-exchange relationship between the student and the institution, similar to the one that Akerlof (1982) noted between employees and employers. (Durkheim 1961) found a similar relationship psychological relationship between citizens involvement in the community. Whereas those who had less civic involvement were found to be more prone to suicide, students with less campus involvement may be more prone to academic suicide through dropout. The institution signals a commitment to the student, which in turn increases a student's commitment to the institution and student commitment is strongly related to retention Tinto (1975) and Bean (1981, 1983).

The standard merit-based aid is scholarship, most of which is provided by the institution, but some is provided by outside sources such as the parents' employer (GE, UPS, etc). Most institutional scholarships are contingent on satisfactory performance.

Financial Allocation Tradeoffs

The purpose of this paper is to inform strategic planners of the explicit tradeoffs of the financial allocation types used during the student life cycle to achieve their strategic objectives, including broadening the reach and diversity of the school. In the context of this study, the variable factors affected by the tradeoffs are revenue, yield, and selectivity. The student life cycle begins with prospects and progresses in stages to applicants, admits and finally enrolled. Once enrolled, students are tracked for retention through graduation and finally as alumni. By aligning financial aid tactics with institutional objectives, schools can better allocate scarce resources.

The factors of enrollment management are defined as follows: Revenue is a function of the number of students multiplied by the discounted tuition rate. Selectivity, the percentage of students admitted in relation to the number of students who applied, is a measure of the front-end quality by the institution. Selectivity may also be determined by race, gender, need or other demographic subcategories depending on institutional objectives. Finally, yield is the percentage of students who actually enroll compared to those who were accepted. Yield is a reflection of the student's perception of institutional value and quality. Note that each measure is relative to the institution's peer group.

Ideally, the institution's mission determines their school selectivity, and yield, which in turn, determines the level of revenue required to support the mission. The budget operationalizes the strategic plan to accommodate the mission. Thus, the mission of the school determines the quality and quantity of students educated. Further, in the ideal situation, schools set their acceptance rate equal to the capacity of the institution. High prestige institutions can charge higher tuition rates and take only acceptably high quality students knowing that they have sufficient number of applicants to fulfill their strategic goals. Lower prestige institutions are always balancing prices, quality, and quantity of students or alternatively, revenue, selectivity, and yield.

In the past, strategic planners could use standard rules of thumb to estimate their final enrollment based on a percentage of the numbers of prospects. More prospects led invariably to more enrollments. More recently, the

numbers of prospects have increased dramatically due to increased access to college choice and easier admissions through the internet. As a result, schools have greater difficulty predicting the final enrollments as the standard rules of thumb no longer apply.

Further, it is common practice to note how the tuition discount rate affects enrollment. Similarly, schools also readily note how mission changes affect enrollment. For example, schools that change their focus from the local area to their regions, or from regional to national missions, have different competitive pressures.

Schools must balance the strategic importance among the competing interests of revenue, selectivity, and yield. Generally, one can optimize any one of the interests at the expense of the others. For example, an institution may decide to increase revenue over selectivity, by decreasing financial aid and admission requirements. The likely result is increased yield. An ideal scenario is to increase all the three variables, but that is rare.

Depending on the institution's existing competitive environment, strategic planners should focus more on either revenue or selectivity to optimize their operations. Yield, while directly related to revenue and selectivity, has longer term impact on programming and auxiliary enterprise. Schools that have higher prestige can afford to focus more on selectivity, while less selective schools must respond more to the revenue side. The authors believe that strategic planners can optimize scarce resources by changing the financial aid allocation mix based on the components of the financial aid packages offered to potential students, and over time improve their competitive position in the student marketplace. Moreover, manipulating the mix of financial aid should allow schools to achieve other mission-centric objectives such as increased access and diversity.

Earlier studies provide a taxonomy, based on financial vulnerability defined by tuition dependency (Maniaci, Poole, and Wilson 2003). The vulnerability model may be used to help strategic planners identify the optimal financial aid tactic that supports their strategic objectives. Armed with this information, board members can make better strategic decisions on financial aid allocation to more efficiently increase selectivity revenue or yield. The paper concludes with a discussion on how to determine which tactic best supports their strategic positioning based on their competitive environment.

The Financial Aid Allocation Model

Institutions with lower revenue and prestige are less able to concentrate on selectivity, as they are more concerned with revenue and retention. In contrast to the Princeton tactic of substituting scholarships for loans, these institutions should reallocate funds from scholarships in favor of loans. The model proposes substituting forgivable loans in place of scholarships, and then converting the loans back into scholarship upon graduation of the student. Hence, the gift exchange and merit benefit of scholarship and work indicated in chart 1 can be attributed to loans through institutional forgiveness. This tactic shifts the focus of institutional aid by increasing the term in which scholarships are given from each semester to the time it takes to graduate, typically 4-6 years. A larger portion of total tuition revenue comes from each student in the long term as increasing student retention adds marginal revenue forgone by student attrition (even if subsidized by tuition discounts). Schools may then target more total aid to more students based on need. The obvious downside to this approach is that it may have a detrimental impact on yield as students resist taking on additional risk. The authors contend that applying the forgivable loan model using beta-tested factors for attrition to determine the students and the ratio of forgivable loan to scholarship will have the dual effect of increasing revenue and retention.

The financial aid allocation model suggests that institutions offer forgivable loans to students as a substitute for pure unfunded scholarship aid. Unfunded aid is that which is not supported by endowment or current fundraising, but rather is applied as a discount to tuition. While institutions use internal transfer payments in lieu of actual money, the loans are repaid in real money if the students drop out. [Realistically, schools should expect some percentage of loans to be uncollectible and should make the appropriate allowance.] An additional accounting benefit is that the accounts receivable shows up as a new asset on the balance sheet until forgiven providing visibility for retention efforts.

Using this method, the risk to yield can be mitigated as institutions are positioned to generate more revenue from students regardless of student outcome. If students drop out, their loans are called and institutional revenue goes up; and if students persist and retention increases, then institutional revenues go up. Further, under this scenario, students now have a greater vested financial interest in their education. Euphemistically speaking, they now have "skin in the game," which reinforces retention efforts.

Model Application

The model can be applied in various ways, by changing the loan/scholarship ratio, or by changing the total amount of money offered as shown in the example in table 2. The given numbers are strictly for illustration and the real numbers should be determined through empirical testing. Group one receives the standard financial aid package issued by the school. Group two receives the standard financial aid package with a higher percentage of money allocated from loan than scholarship.

TABLE 2 Example of Financial Aid Allocation Model

	Constant Dollars	Added Value
Constant ratio difference to reflect student perception that loans are not as valuable as scholarship	Group One 500 Scholarships 500 Loans 1,000 Total	Group three 250 Scholarships 1,000 Loans 1,250 Total
Changed ratio difference to reflect student perception that they are receiving a better total package	Group Two 250 Scholarships 750 Loans 1,000 Total	Group Four 0 Scholarships 1,250 Loans 1,250 Total
Impact on yield	None	Should attract more students

Students do not value loans at the same level as scholarships (Kane, 1994); therefore the exact psychological dollar equivalent of loans to scholarship should be tested empirically. Moreover, the perceived value difference between loans and forgivable loans as well as forgivable loans and scholarship requires testing.

Additionally a school can increase the total aid package by adding more loans to the existing mix to attract more students as shown in group three. Group four receives the same total money as group three with an increased loan/scholarship ratio. Note that group four students are paid less scholarship money, yet receive a higher total package than group one because more of the financial aid package can be based on loans. The larger package is made possible by the additional revenue generated through the program. Students either dropout and repay loans formally subsidized through unfunded aid from the school or they persist thereby increasing revenue from higher retention. For institutions operating with graduation rates below 65 percent over a six-year period, the model may be highly effective.

In the longer term, schools should see a secondary cycle of benefits in increased selectivity as they retain more students and create larger upper class enrollments. This, in turn, will lessen the demand for first time full time students to balance operating budgets. By creating a positive cycle of revenue, retention, and selectivity reinforcement, schools are now better positioned to accomplish strategic objectives by allocating the additional revenue to achieve higher access to lower income students or to enhance prestige through increased selectivity.

Integrated Financial Aid Model

Strategic planners can determine their institution's place in the competitive student acquisition market-place taxonomy of selectivity/prestige and resources as shown in table 3. The variables of prestige and amount of resources correlate to the quadrants proposed in the Vulnerability Model (Maniaci, Poole, and Wilson 2003; Maniaci and Poole 2004). Prestige is a perceptual value that changes over time. Selectivity is one measure that helps form prestige and even affluent institutions may still have relatively low resources compared to Ivy Leagues schools such as Harvard and Yale.

TABLE 3 Integrated Financial Aid Model

	Low Prestige	High Prestige
High Resource	Quadrant 2 Improves selectivity by converting loans to scholarships [Princeton model]	Quadrant 4 Maintains Status Quo or Starts bidding war
Low Resource	Quadrant 1	Quadrant 3

	Focus is Yield Price/Tuition dependent High tuition discount Must improve value not cost	Improves revenue by converting scholarship to loans
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Similarly, relatively high prestige schools that do not directly compete may not be concerned with even higher rated schools. Williams College has stated that they are not worried about Princeton, but would be if Swarthmore adopted the model. (Brownstein, 2001). Note that although Princeton is considered a high prestige institution by almost every metric, the tactic they chose was meant to increase selectivity relative to their peer group. Princeton increased its position to tie Harvard in the U.S News and World Report ranking as the best national doctoral university and surpassed Harvard in selectivity rank.

These tactics are best used to accomplish incremental change. They are most effective in challenging institutions that are slightly ahead in prestige or resources for the Q2 and Q4. Schools that have major differences may not be true peer group institutions.

CONCLUSION

Financial aid is composed of several components with varying efficiency. These components include loans, grants, work, and scholarships. This is noteworthy given that Princeton spent a large amount of money from their endowment to eliminate loans to new students and to provide scholarships instead. This reallocation has rippled throughout academia. How other institutions respond should be a function of their mission, amount of resources, and relative selectivity. Given the competition for new students, strategic decision makers should take into account how their institutions spend their resources. Trustees should ensure that their resources are spent efficiently to accomplish the institution's mission and strategic objectives. These resources include the financial aid model for student acquisition.

The first step is to understand the environment in which they operate. The authors developed a taxonomy, based on an integrated financial allocation model, for strategic planners to determine how the institution's competitive position compares to their peer group. This taxonomy involves the relative amount of resources available to the institution and its relative prestige or selectivity. Further, the authors suggest that their peer group can be identified using the Financial Vulnerability Model (Maniaci Poole and Wilson 2003). Strategic planners can determine where their institution falls in the taxonomy compared to its peer group schools and choose the appropriate financial aid model to use for student recruitment.

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TEACHER EDUCATION: WHY CULTURAL COMPETENCE SHOULD BE TAUGHT

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ABSTRACT

Culture is defined by some sociologists as the rules and survival behaviors a particular group adopts which, in turn, shape its view of the world. Other sociologists define culture as the way people use, interpret, and perceive values and symbols, which distinguishes one group of people from another. Theorists from both schools of thought agree that virtually all learning phenomena result from direct observation of other people's behavior and have consequences for the learner. Diverse students bring their own 'cultural capital' to the classroom, and often, it is ignored or lost in the dynamics of classroom instruction and management. Hence, an understanding of culture is fundamental for teachers to know and utilize to facilitate achievement in all students. Therefore, the authors of this article advocate the teaching of cultural competency to pre-service teachers in teacher education programs or to in-service teachers during professional development seminars to improve the educational outcomes of minority, poor, and other disenfranchised students in American classrooms.

Cultural Competence

"Every act of teaching is a political act"
We Can't Teach What We Don't Know, Gary Howard, 1999

INTRODUCTION

The last decade has witnessed scores of reports critical of American education.¹ These reports have described a weak curriculum; insufficient and/or fragmented instruction; inadequate teacher preparation and professional development, and the growing inefficacy of public education. Other reports point to the continuing mediocre performance of American students on tests of basic skills and their leveling and/or deteriorating performance on tests of higher-order learning as indicators of the need to rethink public schooling.² Furthermore, the studies question public schools' ability to adequately prepare American students for the future, especially as compared to students from other industrialized nations.³ Although this crisis of education theory has been challenged by some researchers, i.e. Bracey (1995, 1996), and Berlinder and Biddle (1996), education reforms directed at teachers' practices and beliefs and this type of reform has become a major part of the educational reform agenda and it is widely accepted that public education has failed a generation of minority, poor, and non-mainstreamed students.

The Importance of Cultural Capital

To many, it is the lack of cultural relevant teaching in public education that is at the heart of the academic achievement problem. Students bring their own student "cultural capital" to the classroom, and often, it is ignored

or lost in the dynamics of classroom instruction and management (Oakes 1985). Despite a multitude of reforms aimed at making teacher instruction more transformative (Cohen and Ball 1991; Cuban 1984), most students are still taught in a traditional manner (Doyle 1986; Lortie 1975). This means sitting in a group and listening to a teacher who lectures to impart knowledge (Jackson 1968). Most teachers still view education as the mere transmission of procedural information (Jackson 1968), rather than constructively developed ideas, concepts, and behaviors. In school, students are to sit and listen, which are often difficult tasks for minority, poor, and non-mainstream students to master, who often do not learn these tasks at home (Trueba 1988), but instead have learned different cognitive ways of knowing (Gillian 1982; Heath 1983).

Therefore, many educators believe that unless we make a determined effort to include cultural relevance in the public school curriculum, public education will continue to fail African-American students (Gollnick and Chinn, 1986), because the importance of the quality of one's experience in education and community settings is repeatedly being pointed to as critical determinants to gaining the foundation for higher intellectual pursuits (Dougherty 1990). Individual students' needs, abilities, perceptions, and cultures are also part of the classroom context and have to be considered in relation to other variables such as grade level and subject matter goals. Teachers need to understand how students use their existing knowledge to make sense of what is going on in the classroom (Floden 1991). A large part of that existing knowledge is influenced by culture. Schools have a culture, subculture, and environment that must be learned, manipulated and transversed in order for children to succeed. Schools serve as a micro-society in which students learn to adhere to particular norms of an existing society. School classrooms mirror the wider society and culture, but they do so on differing levels. "Much of the overt context of classroom life reflects social and cultural ideals, while the structure and covert context of classroom life reflects social and cultural reality" (Johnson 1985). Therefore, as an institution, schools lend themselves to a process that encourages construction and reconstruction of teachers' and students' reality within the school context. Classroom life and the manner in which students progress from one grade to the next are vehicles, probably the most important in western societies, which train students for entry into the larger society (Johnson 1985). "The structure of schooling reproduces the structure of society such that children are required to attend and are invariably conditioned to stratified social and cultural relationships" (Johnson 1985, 10).

The importance of the quality of one's experience in education and community settings is repeatedly being pointed to as critical determinants to gaining the foundation for higher intellectual pursuits. However, according to many authors who have addressed this issue, the experiences of minority students gained in traditional settings are often disjointed from their greater life experiences of oppression (Ogbu 1992). There are several variables responsible for this problem: the effects of ethnicity and culture; student noninvolvement and non-identification with the educational process; and the effects of oppression (Ogbu 1978).

Problem

Most researchers would agree that the curriculum and the instructional process of schools should be connected to the students' experiences and should build upon those (the students') experiences to expand their knowledge and understanding of the world in order to develop competencies for living in a literate and technologically-based society. Unfortunately, there is a mismatch between the learning styles of African-American students and the pedagogical and behavioral styles of schools and educators, which contribute greatly to the low achievement in mathematics and science of African-American students. Allen and Boykin (1991), state that these mismatches lead educators to greatly underestimate the intellectual capabilities of African-American students. This type of practice is especially seen when one considers language and behavior issues (Cazden, John, and Hymes 1972).

The Connection between Culture and Learning

An understanding of culture is fundamental for understanding children in modern classrooms. A student's culture has a significant influence on the level of achievement. Shade (1982) defines culture as the rules and survival behaviors a particular group adopts which, in turn, shape its view of the world. Banks (1981), however, reported that most sociologists regard culture as the way people use, interpret, and perceive values and symbols, which distinguishes one group of people from another. Bandura (1977), believed that "[v]irtually all learning phenomena results from direct observation of other people's behavior and has consequences for the learner." (p.372) Therefore, a child's initial observations are culturally based.

The Disconnect between Teaching and Learning

However, for most minority and poor students, success in schools means abandoning their own culture (Delpit 1988; Ogbu 1992) for a foreign one—the white mainstream ‘culture of power.’ The culture of these students is in direct conflict to the middle-class culture and vision that the primarily white, middle-class, K-12 teaching staff brings to the classroom and school environment. These teachers often cannot envision people who think and act differently from themselves or have different cultures and/or experiences. Furthermore, they rarely come equipped to the classrooms with the skills and abilities to teach diverse learners (McDiarmid and Price 1990).

In the recent debates concerning teaching for understanding, researchers and educators alike have noted that, more often than not, the teaching occurring in classrooms is often foreign and unrelated to the student’s life and experiences (Dewey 1938; Holmes 1990). Students often come to the classroom with different ways of knowing and perceiving the world (Gillian 1982; Heath 1982, 1986, 1990). Students who have been raised with the minimum of necessities, poor health care, and nutrition, and who have been only taught street survival skills are asked in schools not only to accept white culture and values, but to compete in an uneven race for societal awards with opponents who are better equipped and informed about the rules of the game (Wilson 1987). Therefore, the cultural and political structure of the school environment can exclude major segments of their populations.

Many researchers have pointed to achievement differences for poor, minority, and non-mainstream children as evidence of a culturally-based cognitive processing system that has been unrecognized by the educational community (Shade 1982; Cummins 1986; Hale-Benson 1986). Proponents of a socio-culturally developed cognitive processing system contend that knowledge is not acquired in isolation, but develops from societal and cultural norms that must be addressed in order for learning to successfully occur (Hale-Benson 1986; Shade 1982). As 1969, Cohen asserts the African American’s distinct information processing strategy works to their disadvantage in educational settings because schooling is modeled from a Eurocentric perspective (Shade 1982).

Shirley Brice Heath (1982), studied language socialization and the school system and found contradictory learning styles of African-American students in and outside of the school environment. Her research demonstrated that questions used by adults in the community to stimulate understanding were quite different from those posed in schools. In their home setting, nonspecific unexplained comparisons to questions were acceptable. However, in schools, teachers used questions to stimulate conversational interactions between themselves and the children, often around highly specific information that had been previously given. The adults in the community often addressed children in the third person; whereas, in the classroom, teachers ask direct specific questions to children. Community adults, on the other hand, never ask children to label and discuss object attributes that were apparent or for which the adult already knew the child had the answer, nor were children compelled to answer questions. Instead, children were asked about unknown facts or stories, or for community-related experiences. In the home environment, questions were used as an accusatory device about past transgressions and were not used to indirectly signal that certain ongoing or current behaviors should cease. Finally, Brice Heath found that teachers often asked questions outside the actual life experience of African-American children. Her research concluded African-American children are quite “verbal,” but the norms governing when and how they speak are different from middle-class Caucasian norms.

Grant and Sleeter (1989), who contrasted the learning styles of African-American and Hispanic-American students confirmed this research. According to their research, these students tend to be more person-oriented, focus on the use of an object and the whole rather than parts of an object to set formal rules. They are interested in content that has a human or social focus, and ways of responding to teaching strategies involved with other people. Researchers have noted that Native American’s academic performance improved when students were not required to perform in public and where cooperative learning was emphasized. Therefore, learning and literacy do not develop in a vacuum and are dependent upon culture for their role, function, and meaning to society. Children filter and learn from their environment according to their cultural perception of how, and what, they should learn (Heath 1982).

Teachers have difficulty imagining how their instruction looks to their students, how the students perceive what they are studying and what they are supposed to do, or how they learn content that is new and foreign to them (Floden 1991). Often, teachers do not understand why students do not learn, especially if they have taught a concept accurately. Additionally, Floden explains that when students engage in learning, they try to fit what they are experiencing into their current knowledge and understanding. In other words, students make sense of instruction in

ways that depend upon what is already in their minds. When students encounter new information, they try to interpret this new information by means of their existing schemata. If the student is able to match the new information with existing schemata, they can use that framework to understand what they are trying to learn. If the student cannot match the new information with existing schemata, comprehension is difficult, if not impossible. Thus, schemata provide the framework that is used to give structure to information and events. Floden (1991), further asserts that schemata not only allow learners to elaborate (or add to) information or the sense assigned to it, but it also affects interpretation and recall. He argues that students would be able to understand and remember things that go on in their classroom better if they had some framework that organizes or connects the bits and pieces of information. Race, ethnicity, culture, language, and home life are important mediators of students' schemata (Pettigrew 1973; Hilliard 1989; Clark 1983; Villegas 1991).

Pettigrew (1993), observed that students of color and students who are poor have experienced learning interactions in school which lead to the development of social and cognitive behaviors counterproductive to positive academic achievement. An example of this is described in a study by Villegas (1991), that was conducted on the Warm Springs Indian Reservation in central Oregon. The Native American children's reluctance to participate in instruction while in school served as the focus for the study. The silent style of American-Indian children has perplexed educators for many years. Often, teachers interpret this silence as a sign of linguistic deficiency or shyness on the part of the children. The researchers found that, as the teachers reported, the children were silent in school. They observed that the children were most reluctant to talk during whole class or lessons that required students to speak out individually or in front of their peers. Interestingly, when working in small groups, the children spoke freely. By studying how learning occurred in the Warm Springs community, it was discovered that a system of sibling care-taking allowed children to learn more frequently from other children. With this orientation toward learning, it was not surprising that children worked better in small groups.

Teaching for Cultural Competency

Therefore, when taught in the classroom cultural competence requires a willingness to accept alternative perspectives about what things mean (Lynch and Hanson 1992). It necessitates self awareness, culture specific awareness, and effective communications. Self-awareness begins with an understanding that everyone has a culture, but often individuals are not aware of the behaviors, habits and customs that are culturally based. Many teachers are unaware that what they take for "the norm is really cultural biases." Increased self-awareness helps teachers discover unknown biases that can have subtle but pervasive effects on intercultural interaction. Cultural self-awareness begins with an exploration of one's own heritage (Howard, 1999). Through discussion and exploration of identity, it is possible for teachers to begin the process of reflection and self-awareness:

- a) What is my race, class, language, religion, and other important identities?
- b) What are some of the traditions, objects, or foods that symbolize my family?
- c) What are my earliest memories of racial differences?
- d) When have I felt afraid or uneasy about a person or group of people?
- e) When have I felt that I was a target of discrimination?

Culture-specific awareness incorporates understanding the communities of the children in the classroom. Lynch & Hanson (1992), asserts that "a person's color is the first thing we see and the last thing we talk about." Teachers need to be trained to notice who the children are in the classroom and see the community as the context of their work:

- a) What racial, cultural, and linguistic groups are represented in the class?
- b) What are some important holidays, food, and traditions for the cultures represented?
- c) Do I speak the language of any of the second language learners?
- d) What community activities or events have I attended from cultures in the class?
- e) What are the prevailing attitudes in each cultural community about schools?

Knowledge of current controversies about or among different groups is a necessary context for understanding and interpreting children's comments and actions. This, in turn, allows teachers to assist students in matching new information to their existing schemata. Culture-specific awareness also involves knowledge about parental attitudes and their involvement in their children's learning. What are their goals and expectations for their children? How do they want to be involved in their children's schooling? What do they think is important for their children to know/be able to do? Cultural competence occurs when the teacher is able to understand, appreciate, and support children and their families.

Effective communication requires both sending messages and understanding messages that are being received. Teachers often focus on sending messages, but rarely consider understanding messages that are received. There is an extensive literature on the characteristics found to be common among those who are successful in cultural communications (Giles and Franklyn-Stokes 1989). Lynch and Hanson (1992), offers guidelines for improved cultural communications:

- a) Respect individuals different from ourselves.
- b) Make continued and sincere attempts to understand the situation/issues from others' point of view.
- c) Be open to new learning.
- d) Be flexible about how to get things done or resolve issues.
- e) Incorporate a sense of humor.
- f) Increase your tolerance for ambiguity.
- g) Approach others with a desire to learn.

Effective teachers must know what concepts their students bring to the classroom that will interact with them learning the subject matter. Effective instruction must connect new learning with the world in which children live. This should occur both in terms of taking advantage of accurate prior knowledge as a basis for anchoring the new material and in terms of clearing up misinformation and attacking misconceptions that may cause students to make learning mistakes or distorted versions of the truth. Floden (1991), recommends that teachers take action to activate the proper schemata by ascertaining what students already know in order to help them retrieve the proper schemata from memory. Students will understand and remember if they use the appropriate organizing principles they have already mastered to make sense of what they are learning.

CONCLUSION

In meeting the needs of a culturally diverse class, teachers should segment the teaching and learning needs of their students into three sections: communication needs, capacities to think critically, and sensitivity and respect of cultural differences. Each is interconnected and overlap. Cultural competency must be viewed by teachers in terms of the multiplicity of communication needs for the present and future. Teachers must be able to mediate the content of a variety of disciplines (English, history, science, etc.); interact communicatively through several modes (reading, writing, speaking, listening, and viewing), and meet several communication purposes (personal, informal, formal communication).

The ability to think critically and the capabilities to foster critical thinking in their students are central to cultural competent teaching. Such capacities go "beyond mere reading and writing ability, beyond the so-called basics, and beyond the current requirements for a high school diploma.... It now includes capacities... to think critically and creatively, solve problems, exercise judgment, and learn new skills and knowledge throughout a lifetime" (Brown, 1991, xii). According to Shirley Brice Heath (1990), developing "literate behaviors" is integral to critical thinking. The present and future needs of our society call for all individuals to be able to "compare, sequence, argue with, interpret, and create extended chunks of spoken and written language in response to a written text in which communication, reflection, and interpretation are grounded." (3)

The "literacy of thoughtfulness" that Brown (1991) proposes is another component of this process. The inclusion of "thought" is almost universal in discussions of culturally literate education. However, the element of "caring about other thinkers in past and present communities" is often not a consideration in most classrooms. In exhibiting this type of 'caring', teachers will demand the attention and respect of ideas, cultures, and the accumulated and interconnected wisdom of all groups: male, female, powerful, oppressed, similar, different, historical, and contemporary. This element of sensitivity and respect of differences is central to placing cultural literacy in the present and moving toward literacy for all students.

In summary, children enter the school situation in so many different stages of ill-preparedness to produce what the school demands, that initial failures are quite often inevitable and the school experience becomes negatively, rather than positively, reinforced. Consequently, the child's experience in school does nothing to counteract the insidious influences that he is exposed to in his slum, tenement, and sometimes segregated neighborhood. Educators must therefore utilize multicultural education strategies in which students' cultural backgrounds are used to develop effective classroom instruction and school environments to maximize their cultural capital.

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ENDNOTES

1. See the National Commission on Excellence in Education Report, "A Nation at Risk" (1983), the Commission on the Skills of the American Workforce's "America's Choice: High Skills or Low Wages" (1990), reports by the Task Force on Education for Economic Growth (1983), the Committee for Economic Development (1985, 1987), and analyses by scholars and educators such as Barryman (1989a, 1989b), Chubb (1988), Cohen (1988), and Raizen (1989), Resnick (1987).
2. See Berlin and Sum (1988), Chall, Jacobs and Baldwin (1990), Comer (1988), Davis and McCaul (1990), Hargis (1989), Harrington and Boardman (1989), Heath (1990), Kunisawa (1988), Levin (1985), Natriello (1987), Natriello, McDill and Pallas (1990), Rumberger (1987), Schor, I. et al. (1985), Schor, L. B. (1988).
3. Blomberg (1987), as cited in Heath (1982, 1986, and 1990), surveyed businesses and found that employers were seeking the following kinds of literacy skills:
Employers want workers who know how to learn and are well-grounded in fundamental knowledge and who have mastered concepts and skills that create an intellectual framework to which new knowledge can be added. Individuals should be able to draw inferences from a variety of types of information (written and oral), to understand and transmit instructions, to develop alternatives and reach conclusions, and to express their ideas intelligibly and effectively. These skills are adequate for entry-level work, but advancement in many organizations depends on the ability to compose tables and reports, consult source materials, handle mathematical concepts, and control complex equipment and address groups. What many employers now expect of computers 'multifunctional and interactive capacities' they also expect of humans in the work place. Collaborative problem identification and solution depends on rapid information exchange, creativity and risk taking. (20)

EMPIRICAL INVESTIGATION OF THE 'HALO' EFFECT OF FINANCIAL PERFORMANCE ON THE RELATIONSHIPS BETWEEN CORPORATE REPUTATION AND CEO COMPENSATION

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ABSTRACT

The popularity of the *Fortune* Reputation Index (FRI) can be easily discerned by a quick perusal of the management literature investigating corporate reputation, social responsibility, and stakeholder orientation (Chakravarthy, 1986; Preston & Sapienza, 1990; Conine & Madden, 1986; Fombrun, 1996). The main thrust of this paper is to empirically demonstrate the impact of a firm profitability on the corporate reputation and further investigate the 'halo' effect of financial performance on the general relationships between corporate reputation and CEO compensation. The results show that the FRI as a proxy measure of corporate reputation plays a significant role in determining how much a CEO receives in compensation within the context of executive compensation and performance linkages.

INTRODUCTION

Fortune has been publishing annually a list of what they call the "Most Admired Companies" since 1982. Since its inception, the Fortune Reputation Index (FRI), as it is frequently referred to in the management literature, has come to be one of the most utilized proxies for a firm's reputation (Fombrun, 1996; Fombrun & Shanley, 1990). In addition, the FRI has also been called into service as a reflection of a firm's level of corporate social responsibility (Conine & Madden, 1986; McGuire, Sundgren & Schneeweis, 1988), and stakeholder orientation (Chakravarthy, 1986; Preston & Sapienza, 1990).

However, the FRI has suffered from some criticism that has severely curtailed the popularity of the index (Fryxell & Wang, 1994). Primarily the criticism has focused on the close relationship between the financial performance of the firm and its corresponding FRI. This close correlation between financial performance and FRI has been referred to as the "financial performance halo effect" and the overall suggestion is that it is really the financial performance of a firm that determines the majority of the variance observed in the FRI rankings (Fombrun & Shanley, 1990; McGuire, Schneeweis, & Branch, 1990). The "financial performance halo effect" (hereafter referred to as the "halo" effect) has damaged the "reputation" of the FRI that another study by Brown & Perry (1994) developed a statistical procedure for removing the financial biases of the FRI. It is the objective of this research to empirically test the overall impact of the FRI and the halo effect on corporate executive compensation and to assess the usefulness of the FRI for future research studies.

CORPORATE REPUTATION

Due to the difficulty of measuring and operationalizing a subjective concept, such as reputation, it is important to establish some parameters before beginning our investigation of FRI, which is believed to measure reputation. Simply stated, the reputation of a firm may be defined as the long-term evaluation of a firm's social and economic potential by external constituents (e.g. customers, suppliers, society, etc.). Or to utilize a more commonly accepted definition supplied by Fombrun (1996: 72), corporate reputation is the "perceptual representation of a company's past actions and future prospects that describe the firm's overall appeal to all its key constituents when compared to other leading rivals." First, it should be noted that corporate reputation is perceptually based and therefore, a subjective measure of a firm's actions. Second, this subjective assessment is subject to the interpretative and evaluative paradigms of the individual who is drawing the conclusion and making the assessment. Third, the assessment of reputation can vary widely across individuals. However, the underlying foundation of all definitions

of reputation is that a firm's corporate reputation is a valuable commodity, or dare we say a strategically valuable resource (Barney, 1991). Such a valuable resource must be managed and exploited by the firm's management and be capitalized by the financial community and ultimately reflected in the stock market.

In order to maximize firm's performance, it is imperative that a firm manage its' strategic resources to ensure the best possible outcome. Recognizing that reputation is a hard to measure construct can be turned into a valuable commodity if managed properly. According to Roberts & Dowling, 2002: p. 1077) "Intangible assets—such as good reputations—are critical because of their potential for value creation, but also because their intangible character makes replication by competing firms considerably more difficult." The real benefit of reputation may lie in the fact that it is inherently non-quantifiable or what may be called causally ambiguous. Since a firm's reputation can be rare, valuable, and imperfectly imitable, it can be a source of long-term sustainable competitive advantage (Barney, 1991). Causal ambiguity has been cited in other research as a potentially valuable factor that protects a firm's source of competitive advantage (Lippman & Rumelt, 1982).

Reputation management has come to play an increasingly important role in determining a firm's future organizational performance. Research suggests that developing and maintaining a favorable corporate reputation will pay dividends. Most notably, the firm will recognize larger sales and profits by: 1) influencing customer product choices (Dowling, 1986), 2) inhibiting rival firms' actions (Caves & Porter, 1977; Wilson, 1985), and 3) developing social status among rivals within industries (Shrum & Wuthnow, 1988). Any of these benefits possess the power to increase a firm's profitability, market share, and competitive advantage.

Based on a variety of research studies, it has been concluded that corporate reputation is positively correlated with organization performance and financial potential (Caves & Porter, 1977; Fombrun & Shanley, 1990; McGuire et al., 1988). The general conclusion that is continuously drawn from the research is that organizations that enjoy favorable reputations tend to out-perform firms which have less favorable reputations. For the purposes of the present study, previous research suggests that corporate reputation and firm performance/potential are positively correlated.

FINANCIAL HALO EFFECT

Taking a look at the Fortune reputation index will quickly reveal some of the evidence supporting the questions, concerns, and criticisms that have been leveled against the FRI. The FRI is calculated based on a total of eight dimensions, which include:

- 1) quality of management,
- 2) quality of product,
- 3) innovativeness,
- 4) effective use of assets,
- 5) financial soundness,
- 6) employee talent,
- 7) social responsibility, and
- 8) long-term investment value.

As can be seen, the majority of these dimensions can be tied directly to firm performance. In fact, research studies have found that firm performance can explain anywhere from 42 percent (McGuire et al., 1990; 176) to 53 percent (Fombrun & Shanley, 1990; 250) of all the variance observed in the FRI. Such high explanatory powers by a single dimension (performance) raises questions of the usefulness of the FRI in measuring reputation, ethics, and social responsibility. This has lead to the argument that the FRI is a one-dimensional construct (Fryxell & Wang, 1994).

To understand why the FRI has such a high correlation with firm performance the methodology of the survey used to compile the FRI needs some attention. The FRI is compiled through the use of a survey methodology of over 3,322 executives, directors, and securities analysts (*Fortune*, March 19, 2007). Each of the respondent's was asked to select the ten companies that they admired most along the eight dimensions previously outlined. Each respondent was asked to rate the most admired firms in their own particular industry. For a complete outline of the methodology utilized in developing the FRI please consult *Fortune*, March 19, 2007; page 122.

It should be noted that the initial sample started with the Fortune 1,000, which is a listing of the 1,000 largest U.S. firms according to total revenue generated. In addition, top foreign firms were also included. Therefore, given the composition of the initial sample of firms, all very large and very profitable companies, it could be argued that the sample is unduly biased in favor of performance measures over less readily measurable variables like reputation,

social responsibility, and ethics. In addition, the survey was sent to a select group that is largely interested and influenced by financial performance (securities analysts, directors, and executives).

In further support of the single-dimension theory, the eight dimensions upon which the FRI is based have been shown to be highly correlated. Instead of eight separate and distinct variables, Fombrun and Shanley (1990) has reported that the results of a factor analysis revealed that one factor explained a total of 84% of the variance reported. Based on these results it can be concluded that a “halo” effect is present. According to Dillion, Mulani, & Frederick (1984: 194) a halo is confirmed whenever “a common general factor showing high loadings on nearly all attributes which accounts for appreciable variance” is present for a principal components analysis. Given the results reported by Brown & Perry (1994) there is strong evidence to support the conclusion that the FRI suffers from a financial “halo” effect.

Based on the work of previous management scholars (Brown & Perry, 1994; Fombrun & Shanely, 1990; Fryxell & Wang, 1994; McGuire et al., 1990) it would be unwise to ignore the potential “halo” effect of the FRI. Therefore, to make sure that any “halo” effect is accounted for the present study will employ a “financial halo removal” method to account for the weaknesses highlighted by Fombrun & Shanley (1990). However, the question of how important the “halo” effect has been in biasing previous studies on corporate reputation, ethics, and social responsibility studies that relied on the FRI has not been investigated empirically. Do the findings by Fombrun & Shanely (1990), Brown & Perry (1994), and Fryxell & Wang (1994) invalidate all of the previous studies on reputation? Does the “halo” effect, although important and significant, invalidate the corporate reputation literature that have relied on the FRI? Is the FRI, even after the “halo” effect is removed or accounted for, still useful to researchers investigating corporate reputation? Or is the FRI now totally useless? There are the questions that the present study seeks to clarify.

Past studies has merely found that there is a high correlation between the eight dimensions of the FRI and firm performance and then extrapolated this to the results to all research studies that have relied on the FRI. In order to more completely investigate the “true” impact of the “halo” effect on the usefulness of the FRI in future studies, the present study will make use of three different measures of the FRI. First, the original FRIs reported by *Fortune* were used in the study to obtain results under circumstances similar to previous studies that have employed the FRI. Using the original FRI served as a control test for the present research study.

Using this methodology CEO compensation will be investigated under three different scenarios: 1) the original FRI, 2) the predicted FRI, and 3) the adjusted FRI (halo removed). After controlling for the effects of the “financial halo” results suggest that, contrary to the conclusions of Fryxell & Wang (1994), the FRI is still useful as a valid measure of corporate reputation.

HYPOTHESES

The preceding discussion leads to several hypotheses with regards to the usefulness of the FRI in management studies. The hypotheses were derived from the extant literature as previously discussed. A detailed explanation of the theoretical development of the hypotheses that guided the present study will not be repeated here to conserve space. Each of the major hypotheses relating to the primary variables of the study is summarized below:

- H₁: CEO compensation will be positively associated with corporate reputation when measured as the original FRI.
- H₂: CEO compensation will be positively associated with corporate reputation when measured as the predicted FRI.
- H₃: CEO compensation will not be positively associated with corporate reputation when measured as the adjusted FRI.
- H₄: CEO compensation will be positively associated with CEO age, and tenure with the company and negatively correlated with tenure as CEO.

METHODS

Sample

The sample used in the study included a total of 286 firms from the *Fortune* "Most Admired Companies" list for the years 2000-2004. The initial sample was comprised of 500 firms from the list for 2000 (*Fortune*). Firms were then cross-referenced with *Forbes*' "Top 800 Executives Compensation" (2000). The final sample was the result of all firms that were listed in both *Forbes* and *Fortune* over the five-year period under study, resulting in a final sample of 286 firms/CEOs. As can be seen there was a large loss of firms/CEOs from the initial sample due to missing data. To insure comparability across the different models being used in the present study, only firms with complete data were included in the study. All of the variables used were calculated as a simple average for the five-year period of 2000-2004.

Statistical Analysis

In searching for the above mentioned relationships, several statistical procedures were utilized; namely, correlation analysis and hierarchical regression analyses. First, a Pearson correlation analysis was performed to uncover general relationships among the continuous variables of the study and uncover any multicollinearity. Second, a series of three hierarchical regressions were run to test the relationships outlined in the hypotheses.

Measures

CEO Compensation. CEO compensation was measured in three different ways: 1) salary and bonuses, 2) long-term compensation, and 3) total compensation (a composite of all the other two measures of compensation). CEO compensation data was obtained from *Forbes* (2000-2004) "Top 800 Executives Compensation."

Corporate Reputation. Despite the results of Fryxell & Wang (1994) that questions the validity of the FRI it remains the most widely used measure of firm reputation and therefore, will be utilized for the purposes of the present study. As was previously outlined, corporate reputation was measured using *Fortune's* (2000-2004) "America's Most Admired Companies." In response to earlier studies questioning the validity of the FRI (Brown & Perry, 1994; Fombrun & Shanely, 1990; Fryxell & Wang, 1994; McGuire et al., 1990) corporate reputation was then operationalized as three distinct measures of a firm's reputation: 1) original FRI, 2) predicted FRI, and 3) adjusted FRI (with the "halo" effect removed).

Covariates. Based on a review of earlier studies on CEO compensation it was deemed appropriate to include a number of variables that have been found to be critical in explaining executive remuneration. In a similar fashion, these variables were included as control variables in the present study to maintain the study's comparability with previous research. Only a few of most widely studied variables were included in the investigation. 1) **CEO age.** The age of the CEO was calculated in years. Executive age is one of the oldest and most commonly studied variables in compensation research (Andrews & Henry, 1963; Deckop, 1988). 2) **Tenure as CEO.** Tenure as CEO was measured as the number of years that the position of CEO was held within the same company (Deckop, 1988; Mangel & Singh, 1993). Such a measure of CEO tenure was chosen because of its more conservative nature. 3) **Tenure with the company.** Tenure with the company was represented by the number of years the CEO has been with the company, regardless of the position held within the same company (Mangel & Singh, 1993).

ANALYSIS AND DISCUSSION

Descriptive statistics and intercorrelations for all the variables used in the present study can be found in Table 1. Intercorrelations among the various measures of corporate reputation and CEO compensation reveal strong and consistent relationships, suggesting that all measure of reputation were helpful in explaining variations in executive remuneration. In fact, all three measures of the FRI were positively and significantly correlated with all three measure of compensation. There seems to be a direction relationship between a firm's reputation and the extent to which its' CEO is compensated.

Firm profitability was also positively associated with CEO compensation, suggesting that compensation is closely connected with the ability to pay. Therefore, firms that are highly profitable are more likely to reward their leaders on two accounts: 1) the firm has the ability to pay higher salaries and other forms of compensation, and 2) the leaders are seen as being largely responsible for the profits generated by the firm. However, it should be noted that the relationships were not consistently strong across all measures of performance. ROS was the most consistent

across all measures of compensation, while ROA was more closely correlated with long-term components of compensation, and ROE reflecting a more short-term focus.

Of the personal characteristics included in the study, CEO age and CEO tenure as CEO were positively correlated with compensation. However, CEO age was only correlated with salary and bonus or what might be termed short-term compensation. CEO tenure as CEO on the other hand was only correlated with long-term compensation. The general conclusion is that CEOs of firms with excellent reputations are paid more than their counterparts in other organizations not recognized as having excellent reputations. It should be noted, that despite the limited range of the corporate reputation indices used in this study (only companies rated high on the FRI measure were included in the sample), reputation was consistently correlated with all measures of compensation. Therefore, there seems to be a direct and positive relationship between a firm's reputation and the CEO's compensation.

Firm performance was positively correlated with the original FRI measure of reputation ($p < .001$), supporting the thesis that a firm's image or reputation is closely related to a firm's profitability. It should be noted that firm performance was also positively correlated with the adjusted FRI. Firms cited as having better reputations tended to be more profitable than other firms, which is consistent with the findings of Fryxell & Wang (1994). Since Table 4 used the adjusted FRI as the variable of study it was necessary to eliminate the variables that were used in removing the financial "halo" as reported by Brown & Perry (1994). Since the adjusted FRI had already removed the financial effects of the supposed halo (Brown & Perry, 1994), it would not seem prudent to include the very variables that were used to remove the halo in the model. Doing so would result in a misspecified model. Therefore, the variables used in removing the financial halo were excluded from the models that used the adjusted FRI.

Results suggest that most of the models were effective in explaining CEO compensation (most models were significant at the $p < .001$ level). Overall, the results clearly show a dramatic and strong relationship between CEO compensation and corporate reputation. With only slight variation, the original, predicted, and adjusted FRI were significantly important in explaining CEO remuneration. Corporate reputation and compensation were significantly correlated across all models, clearly indicating a strong tie between the two variables. The interesting point is that regardless of the type of measure used as a proxy for corporate reputation or CEO compensation, the tie between reputation and compensation is robust. Firms that are cited as having excellent corporate reputations pay their CEOs more than firms without such reputations. Such consistency across the models tested reveals and solidifies the close tie between the two variables under investigation. Even after controlling for the various effects of financial performance and personal characteristics the results were unchanged: corporate reputation plays a major factor in determining CEO compensation packages.

Using hierarchical regression analysis, results reveal a strong and consistent relationship between CEO compensation and corporate reputation. After removing any "halo" effect that has been incorporated into the FRI, as in Brown & Perry (1994), the results suggest that the FRI (the original, predicted, and adjusted) are good proxies for corporate reputation. The removal of the "financial halo" from the FRI had very little effect on the overall impact of corporate reputation on CEO remuneration. Surprisingly, all three variations of the FRI were equally good at predicting and explaining the observed variance in CEO compensation. Therefore, the FRI index has shown itself to be a robust and valuable measure of corporate reputation based on the finding of the present research.

Taking all of the results into account would indicate that although financial performance, especially when operationalized as ROS, may be a significant factor in explaining the *Fortune* reputation index (Fryxell & Wang, 1994), it cannot be considered the sole source of explanatory power behind the index. However, based on the results of the present study, the FRI is more than just a reflection of firm performance. Even though the overall impact of performance on the FRI is significant, it does not account for all of the power of the FRI to explain executive compensation. After the effects of firm performance were extracted from the model (Brown & Perry, 1994), the reputation index still was found to be a significantly important variable in explaining CEO compensation. It may be argued that this remaining explanatory power is attributable to the "reputation/social responsibility" criteria of the *Fortune* index and therefore, can be used as a valid proxy of reputation, social responsibility, and ethics. Significance levels for reputation were universally significant at the $p < .05$ level or above, suggesting that corporate reputation is more than a reflection of firm performance.

CONCLUSION

The major purpose of this study is to investigate the impact of firm profitability on the FRI. Although previous studies suggest that the FRI is too reliant on financial performance measures (Fombru & Shanely, 1990; Fryxell & Wang, 1994; Brown & Perry, 1994) to be of any value to researchers interested in reputation or social responsibility or ethics, such a conclusion seems to be premature at best. The Results of this study suggest that the FRI is robust and useful proxy of corporate reputation and the corporate reputation plays a significant role in explaining how much a CEO receives in compensation within the context of executive compensation and performance. The results and conclusions of this study also confirms and validates the extant research that employed the FRI as a proxy of reputation and other subjective measures related to social responsibility and ethics.

Tables and references can be provided upon request.

A CONTENT ANALYSIS OF CULTURAL LANGUAGE IN THREE CURRICULUM MODELS: EXCLUSION, INCLUSION AND EMPOWERMENT OF THE LEARNER

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ABSTRACT

Cultural language impacts children's learning in schools. This study examined two areas associated with school curricula; language, and the similarities and differences in the characteristics of three secondary school curricula: Africentric, Multicultural and Eurocentric. This study applies to a secondary social studies content area for students enrolled in an urban school in upstate New York. It assesses the presence of a diversity of cultural themes and concepts, and the number of times they routinely occur in curricula related writings. The assessment includes a focus on the ideologies of selected curriculum advocates pertaining to curriculum characteristics. The results of the study indicate a need to investigate the influence cultural language and curricula characteristic can have on empowering student learning. The author presents a matrix as a useful guide for curriculum assessment common to the three schools of curricula; Africentric, Multicultural and Eurocentric.

INTRODUCTION

One major unresolved educational issue of the 20th and 21st centuries concerns curriculum inequality in America's school systems. Much of the focus that has been placed on curriculum inequality concerns its correlation with the swelling numbers of African American student failures on both standardized tests within the classrooms and on college preparatory tests. Other dilemmas that are further ascribed to curriculum inequality are suspensions, low high school graduation rates, the need for remedial classes upon entering college, and low college completion rates. One theory that has been attributed to the high academic attrition rates among African American students is the continued employment of the European-cultural curriculum model that has served American classrooms for over a century. There exists a continually growing public concern that this model fully serves some students, partially serves other students, and does not serve many other students at all. The term "fully" refers to the highest degree to which the cultural, social, and truthful facts, values, and acknowledgements can be dispersed throughout the education system. One particular denomination noted as being long deprived of a curriculum that fully serves them is that of African Americans.

Banks & Banks (1999) found that existing curricula are designed to enable groups of students with certain cultural characteristics to have a better chance to learn, while groups of students with different cultural characteristics are not afforded that same opportunity. When students acquire knowledge and skills in a curriculum that in some way corresponds to their own origins, it gives them a stronger sense of self, and a stronger connection to their own culture, as well as to those of others. Equitable ethnic representation in values, methods and techniques, and humanitarian contributions is a crucial component to a fruitful and all-inclusive curriculum.

In an article, titled "Why Chinese Students Score High in Math," published in *The Chronicle of Higher Education*, Monastersky, (2005) found that East Asian language patterns and cultural teaching techniques are effectively combined to help students from that section of the globe outperform Americans in mathematics. In addition, he found that American attitudes or value beliefs in American students lead them to measure their own success in life by their cognitive abilities. These value beliefs seem to have caused hundreds of American students to give up, particularly when these students realize that they do not possess critical cognitive ability. In contrast, Chinese student attitudes or value beliefs tie success to ones' working hard. This belief has enticed most Chinese students to put in extra effort with the understanding that their hard work and persistence will yield success.

The interest that led to researching this issue evolved out of teaching urban high school students for fifteen years using of a traditional curriculum--a curriculum that has been shown to foster mis-education for many black and Latino students, in its idealized design and uncritical account of what the most powerful members of society believe children should be taught (Nelson, Palonsky, & Carlson, 2000). The practice of using such curricula has led to the historical marginalization, misrepresentation and often neglect of students in these cultural classifications (Banks, 1999). Other educational inequities in the curriculum include, but are not limited to, providing an ethnic

identity to some students, while neglecting to do so with others, promoting self-doubt and racial inferiority to students of color, and promoting white supremacy both historically and contemporarily, all of which remain juxtaposed against high public profile initiatives, such as the No Child Left Behind Act (Asante, 1998).

Jackson (2001) points to curricula decisions made at the state, district, school and classroom levels as being prepared in political environments. She believes that curricula decisions or political acts regarding education determine which knowledge, culture and people are valued in the American educational system and society overall. The significance of a student's place in history and society is learned through curricular decisions. As a result of these curricula decisions, many African Americans and other people of color are either excluded or included. Unfortunately, educational exclusion has far outpaced inclusion. Such omissions in the American curriculum decision-making process have led to a call for balance in European American curricula formulation. Developing and implementing curricula that are more compatible are needed to bring equilibrium to an educational system that is past due for an overhaul.

This study was borne out of public concern and call for a transformation of the total school, educational environment with an emphasis in areas of curriculum development. The issue of curriculum development concerns the use of either one or more curricula that can fully serve all students. The term "fully" refers to the degree to which cultural, social and truthful facts, values and acknowledgements are presented in education. However, the curriculum that presently dominates what and how American students learn is only partially serving the interests of some students. One reason for this is that the curriculum is written in a way that predominantly extols one group, while telling the story of others in a manipulative, misrepresented, and pitying manner.

It should be noted that part of the reason for the inequality in the curriculum lies in the design of the existing curriculum, which provides biased selections of issues that become emphasized through mono-cultural orientations, power relations, hero relations, both good and bad, and worldviews. In essence, the current traditional curriculum is designed to give certain groups of students with certain cultural characteristics a better chance to learn, while students with different cultural characteristics do not get the same opportunities (Banks & Banks, 1999).

The purpose of the study is to evaluate cultural language that impacts children's learning in school, and to focus on the similarities and differences in selected curriculum advocate's ideologies pertaining to curriculum characteristics common to three secondary school curricula; *Africentric*, *Multicultural* and *Eurocentric*. In this article, I will review and discuss a brief history, description and contemporary curriculum concerns of each curriculum model, review and discuss the two part methodology (a qualitative relational content analysis and research questions) used to conduct the study, review and discuss the findings from the qualitative relational content analysis, the research questions, and lastly, the recommendations.

ADVOCATES AND CURRICULA MODELS

A review of the literature suggests various definitions of curriculum, e.g., Oakes, (1988), Banks, (1995), Karenga, (1993), and Bennett, (1999) According to one definition, curriculum is:

...the sum total of knowledge to be acquired through the education process. It is outlined by a set of courses and skills that are provided. The curriculum represents the core of the students' expected learning experiences. Simply put, the curriculum reveals what will be taught. The emphasis of the curriculum decisions determines who is taught, what is taught and how information and knowledge are imparted. (Jackson, 2001, p. 1)

This definition is selected to provide a general framework of curriculum for three curriculum models: *Africentric*, *Multicultural* and *Eurocentric*, used for research in this paper.

Following an extensive review of literature on the topic of culture in curriculum, the researcher selected three curriculum models; *Africentric*, *Multicultural* and *Eurocentric* for research in this study. The criteria for assuming this project were established after a review of the literature from each curriculum beginning in the early 1990's through 2004. Each curriculum model is associated with its own characteristics, themes and definitions for learning and culture as presented by advocates in the field. In the following sections, I elaborate on these characteristics, themes and definitions.

The criteria for choosing the advocates is based on time, scope, depth and breadth of their research in the field of curriculum, the number of published books and articles that substantiate the advocate's research concerning curriculum, and each advocate's particular position on curriculum, and their work as teachers in the field of education. The rationale for picking particular writings from each advocate selected for this study is based on an

intensive review of hundreds of published articles. The articles selected provide a connection, focus, and significance to culture in the curriculum. Those published works are a representative sampling across time from the latter half of the 20th century to the 21st century.

The Africentric curriculum advocates whose views and works were used in this study are Molefi K. Asante and Asa G. Hilliard, III. The Multicultural curriculum advocates whose views and works are used in this study are James A. Banks and Manning Marable. The Eurocentric curricula advocates whose views and works were used in this study are William J. Bennett and Arthur M. Schlesinger Jr. All six curriculum advocates present theories and personal perspectives about their choice in curriculum models. Each advocate subscribes to a theory that the curriculum they endorse is in the best interest of all children or students.

Africentric Curriculum

A review of the Africentric curriculum shows that it is based on a concept that has been known as Afrocentricity. According to Asante (1987), the scholar credited with coining the term, "Afrocentricity" is a frame of reference wherein phenomena are viewed from the perspective of the African person. "The Afrocentric approach seeks in every situation the appropriate centrality of the African person" (p. 171). In other words, Afrocentricity is a structure of recommendations about how occurrences of social and human realities (thought and practice) are viewed or examined from the standpoint of a person of African descent. However, as Winbush (1998) states:

.....The notion of an African worldview rather than a European worldview challenges the very foundation of Western intellectual thought. Elsewhere I have written (1994) about why anxiety is a constant companion to many who criticize Afrocentricity. I am bothered, but not surprised, by how critics of Afrocentricity choose to view it as opposing Eurocentricity and, from this false premise, cite it as just a self-congratulatory way of thinking about history and science. (p. 15)

The second part of the word "Afrocentric" is "centric or centrism." As defined by Asante (1998), it articulates the "centeredness" in educating people of African descent. "Centrism, the groundedness of observation and behavior in one's own historical experiences, shapes the concepts, paradigms, theories and methods of Africology" (p. 6). In other words, centric is the foundation or background of the study and performance in one's personal historical experiences that forms the general ideas, models, premises and methods of Africology. Moreover, the concept "centricity" is applicable to any culture and would therefore, work if applied to students of African, Latino, and Asian American cultures, as it has worked for European American cultures for decades (Asante, 1998).

In his article titled "The Functional Implications of Afrocentrism," Okafor (1994) points to an early critical discovery made by Carter G. Woodson about centeredness. He states that "Even though Woodson had obtained his doctoral education from none other than Harvard University, he came to a realization later in his life that centered education was indispensable to the attainment of intellectual maturity and was vital to cultivating the capacity for critical reasoning" (p. 216).

In an educational environment where centricity is recognized, accepted, and practiced, the teacher makes opportunities available for students to study the world, its people, and its concepts and history from an African frame of reference or worldview. Therefore, the incorporation of Afrocentricity in education pertains to methods and views that call for placing students of African descent within the setting of their own cultural references as a way for them to connect socially and psychologically to other cultural phases (Asante, 1998).

Afrocentricity in education was developed to do several things, but is most inclusive of: seeking cultural ways to center children as a way to make learning interesting and personal; seeking to give African American children a view of themselves as subjects, rather than objects in education, whether it be in biology, physics, literature or social studies, etc; seeking to present to African American children and children from other cultural backgrounds an authentic voice and knowledge pertaining to names, issues, plights, and events that have had, and currently sustain, a particular effect on people of African descent in America; and seeking to adopt a "SANKOFA" mindset by returning to the source of humanity's beginnings, and even to the days of segregation in American education. The objectives are to retrieve the best that was given to black students in those segregated schools, and use that knowledge in conjunction with today's techniques and technology as a means of promoting a centering of African-American students in education.

Contemporary Africentric Curriculum Issues

After a review of the literature comprised of Asante (1991, 1998) Gutman (1996), Appiah (1996), Weil (1998) and Winbush (1998), the following statements are presented as major contemporary issues facing the Africentric curriculum framework:

The fear that an African worldview will joggle the foundations of Western intellectual thought.
The concerns that an Africentric curriculum will call for separatism in the curriculum.

Although these issues evoke a sense of fear, the origin of those fears needs clarification. Are those fears based on a change from tradition or the status quo? Are those fears based on writings, scholarship and academic models designed to renew thinking through education for people of African descent, or are those fears based on the challenge and struggle for the control of minds and reform of knowledge? (Winbush, 1994, Asante, 1998, Weil, 1998).

Multicultural Curriculum

A review of the Multicultural curriculum reveals its overall focus was to make curriculum relevant to all students, regardless of their cultural origins. However, Multiculturalism, like Africentrism, amounts to a shift in curriculum away from the traditional Western European model used to educate students. These curriculum shifts are due largely to the educational, political, and cultural consciousness movements that evolved out of the 1950's. They began with the Brown decision and grew into issues pertaining to civil rights, poverty in America, and the Vietnam War and Black Consciousness movements of the 1960's. Some of the culturally conscious and astute groups, which were organized to address the Vietnam War, Civil Rights Legislation, and Black Consciousness, as well as to challenge the traditional American political and education systems, included well-known groups, such as the Black Panthers, the NAACP, the Southern Christian Leadership Conference, the Freedom Riders, the Congress on Racial Equality (CORE), the Third World Liberation Front, Independent Funding for Community Organizations (IFCO), and the Student Nonviolent Coordinating Committee (SNCC). These groups, as well as the lesser known hometown groups, combined with their reform agendas, and acts of protest were largely responsible for the shift in curriculum consciousness of the 60's that continues in this decade.

The educational consequences of the school reform movement led by African Americans and other marginalized ethnic groups ultimately developed into the ideological framework and present-day curriculum model, known as Multicultural Education. One perspective of "Multiculturalism" provided by Marable (1997) is that:

The recognition that our nation's cultural heritage does not begin and end with the intellectual aesthetic products of Western Europe. Multiculturalism rejects the model of cultural assimilation and social conformity, which within the context of our schools has often relegated African-Americans, Latinos and other people of color to the cultural slums. The cultural foundations of the United States draw much of their creativity and originality from African, Latino, American Indian and Asian elements. Multiculturalism suggests that the cross-cultural literacy and awareness of these diverse groups is critical in understanding the essence of the American experience "from the bottom up. (p. 25)

A working definition of "Multicultural Education" by Banks & Banks (1999), states:

Multicultural education is at least three things: 1) an idea or concept, that all students regardless of their gender and social class and their ethnic, racial or cultural characteristics should have an equal opportunity to learn in school. Another important idea in multicultural education is that some students because of these characteristics have a better chance to learn in schools as they are currently structured than do students who belong to other groups or who have different cultural characteristics. 2) a reform movement that is trying to change the schools and other institutions so that students from all social class, gender, racial language, and cultural groups will have an equal opportunity to learn. Multicultural education involves changes in the total school or educational environment; it is not limited to curricular changes.

Another perspective of multiculturalism, according to Weil (1998), states:

Multicultural theorists advise that rather than seeking to melt away cultural differences within our pluralistic society, schools should celebrate these differences in an atmosphere of inquiry. Accordingly, schools should focus on the cultural enrichment of all students through programs aimed at the preservation and extension of cultural pluralism. They see cultural diversity as a valuable resource to be recognized, preserved, and extended and they suggest that only by confronting racism and prejudice can we convey an understanding of and appreciation for human dignity(p.16).

Multiculturalists, as a whole, argue that the views of those previously excluded in the curriculum because of their class, race, or sexual orientation must be given the opportunity of equal representation in the curriculum. They further argue that equal representation is good for all cultures in the sense that it allows all students to embrace self-consciousness and history from multiple perspectives.

Contemporary Multicultural Curriculum Issues

Ravitch (1987), Hirsch (1987, 1996), Bloom (1987), Schlesinger (1991), and Bennett (1986, 1987, 1992, and 1992), present concerns for the major contemporary issues facing the Multicultural curriculum framework:

The fear of multiculturalism fragmenting American society and leading to the death of education or loss of privilege and political and social power.

The fear of a multicultural curriculum replacing an idealized curriculum developed by the dominant culture for all.

These particular fears follow a similar pattern found in the Africentric curriculum issues such as, verbal misrepresentation concerning intent and negative consequences before the curriculum is tried, loss of self-proclaimed privileges in education, calling into question history recorded by the dominant culture, and the thought of restructuring and rewriting history presented in an authentic voice. However, what is really at stake is the possibility of sharing and controlling knowledge or the notion of a curriculum possessing the potential of superseding the existing curriculum whose effect could make learning more equitable thereby, effecting equality in social class status and life altogether (Nelson, Palonsky and Carlson, 2000).

Eurocentric Curriculum

Curriculum is the foundation of an educational system that is comprised of a structured body of course requirements connected to underlying philosophies of particular cultural values and assumptions. Its purpose is to provide an outline for specific courses that encompass those philosophies, cultural values, and assumptions. When a course within a curriculum is taken and satisfactorily completed in accordance with the instructor or state educational body, the student is then recognized as having obtained proficiency in that particular subject area as well as the other subject areas (Oakes, 1988).

Traditional curriculum in the American educational system is predominately written from a Eurocentric perspective. The term Eurocentric means “centered or focused on Europe or European peoples, especially in relations to historical or cultural influence” (The American Heritage Dictionary, 2000). The term Eurocentric, however, is synonymous with the term Westernization, which means “to convert to the ways of Western civilization” (The American Heritage Dictionary, 2000). Western civilizations are those civilizations that developed in Western European regions such as Greece, Scotland, England, Germany, France, Ireland, the Netherlands, Norway, and Sweden, to name a few. These civilizations have further adopted common values, ideas, ethnicity, logic, philosophy, mathematics, science, technology, capitalism, and structure of educational curricula. The Eurocentric-American curriculum framework has wielded considerable influence and powers over time (Nelson, et al., 2000). It has produced and promoted an ethnocentric worldview socio-historically, economically, politically and educationally since education came to America. During the American progressive era and onward, this framework was considered “the standard” in education and used as a model for educating Americans and immigrants of other countries seeking American citizenship.

Although other forms of curricula have been requested by other ethnic groups, and defined, developed, and incorporated into the American education system over time, (e.g., Africentric and Multicultural), the Eurocentric curriculum remains the dominant form of curriculum. Of the many reasons that exist for this phenomenon, the most widely held is that the dominant or controlling (Anglo-American) culture uses its power to select what it deems best suited for Americans and others within its geographical boundaries, and those whom it seeks to Americanize or

accept into its corridors of power. This type of educational indoctrination may be successfully accomplished through an American education. Americanization, in this respect, pertains to learning a common background of knowledge, values, history, social interactions, and language. Hirsch's (1999) response to a system of common knowledge or a part of Americanization has more than one basis. He states, "This system of common knowledge and root attitudes needs to be imparted in school not just to achieve a citizenry competent to rule itself, but also to achieve community, social peace, and, not least, economic justice" (p. 5). He points to limited opportunities in the United States, particularly opportunities of freedom and earning power to those individuals who have not mastered the subtle use of English in speech. However, in addition to unlimited opportunities afforded to those individuals who will come to know English in speech, Hirsch addresses the capabilities of serving both economic and political life, of which he states:

These practicalities will require from children after they become adults, an ability to communicate effectively with others in a nation's policy and economy. Those Americans who lack effective mastery of English including mastery of the shared background knowledge that enables its nuanced use, are destined to stay poor and alienated from mainstream social and political life. (pp. 2-3)

A good understanding of subtle American nuances in communication, such as interpreting a slight or full head motion or nod and knowing the meaning behind both is part of what Hirsch seeks to explain.

Contemporary Eurocentric Curriculum Issues

After a review of literature comprised of Jackson (2001), Hacker (1992), Nelson, Palonsky & Carlson (2000), Karenga (1993), Asante (1998), Weil (1998), Banks (1999), Hayes (1997), and Fullinwider (1996), the following statements are presented as major contemporary issues challenging the Eurocentric-American curriculum framework:

A disproportionate number of Eurocentric worldviews in the curriculum when viewing cultural events, themes, concepts, and issues.
Lack of a dominant Eurocentric voice in selecting educational contributions.

These issues derive from the length of time the Eurocentric curriculum framework has wielded considerable influence and definitive power in education. Producing and promoting an ethnocentric worldview socio-historically, economically, politically and educationally once gave the Eurocentric curriculum the title and distinction as "the standard curriculum model" in education. However, what would it take today for a curriculum to sustain that distinction in education? (Karenga, 1993, Fullinwider, 1996, Weil, 1998 and Nelson, et al., 2000)

METHODOLOGY

A qualitative relational content analysis was chosen for this study because of its multidimensional use for word examination. It can be used to determine the presence of certain concepts within texts, documents or journals, as identified by the research questions and the relationship between the concepts and/or themes. The relationships are evaluated for their strength, their sign (positively or negatively related), and the direction of the relationship, for example, which concept influences the other (Wise, 2002).

This type of methodology can also take into account the frequency with which certain words or particular phrases occur in the text as a means of identifying message characteristics. In addition, the methodology provides a process for making inferences about the messages in the texts, the author, the audience, the culture, and the particular time to which the messages or terms belong. This method of inquiry is an accepted method in curriculum development and is often used in research pertaining to quantitative analysis of message characteristics. Its applicability in many areas of inquiry expands its range from analyzing naturally occurring language, to analyzing approach strategies used in personal ads (Neuendorf, 2002).

Procedure for the Content Analysis

The procedure for the qualitative relational content analysis follows the Neuendorf (2002) model. The model design represents a nine-step process that involves assessing theory and rationale, conceptualization of themes and concepts, operationalization (measure), developing a coding scheme, and form, sampling a pilot study, training coders to test for pilot reliability, coding, assessing for reliability, and concluding the process by making inferences about the results.

The data used in this study was collected following a two-stage process. In the first phase of the process coders were randomly selected to tally a sample number of 34 major themes and concepts related to culture from four writings of each curriculum advocate. From that sample of terms, the top ten themes and concepts were selected. During the literature review process, the coders discovered that certain themes and concepts related to curriculum had a consistent occurrence. For example, under Africentric curriculum, themes such as *Afrocentricity*, *Eurocentric-American culture*, and *African American people* topped the list. The top concepts under Afrocentric consisted of *culturally centered/centricity*, *segregation*, and *culture*. Under Multiculturalism, themes such as *Multiculturalism*, *Ethnic/Black Studies*, and *curriculum reform* led the way. Concepts under multiculturalism consisted of *cultural*, *race*, and *history*. Under Eurocentric, themes such as *Western Civilization*, *American Education/History*, and *European History* led the way. Concepts under Eurocentric consisted of *history*, *self-esteem*, and *culture*.

The Statistical Program for the Social Sciences (SPSS) was used to assess for reliability of the sample pilot used in this research. An essential step in the relational content analysis is to test for reliability of the sample so that the research can make inferences from the words selected for the research.

The relational connection between these themes and concepts and the inferences that can be drawn from that content substantiate the reasons for choosing the themes and concepts for this study. During an analysis of the themes and concepts presented in the coders' review, I also realized that certain themes and concepts had a consistent occurrence. Some of the theories and perspectives that indicate this type of message content, and were significant for further study, derive from mass media communications such as books, radio and television, and educational institutions because of their power in molding public opinion.

The second stage of the process involved research questions and their affect on six common curriculum characteristics. The goal of the research questions is to determine how close or far apart the views of the curriculum advocates are, and to deduce what each advocate stressed most in equitably serving all students. The research questions for this study are:

How are the views of six advocates of three curriculum models similar?

How are the views of six advocates of the three curriculum models dissimilar?

What do the similarities and differences imply about what is emphasized in the curricula?

The six common curriculum characteristics for the study are: *Definition of the curriculum*, *Purpose of the curriculum*, *Key emphasis of the curriculum*, *Curriculum decision making*, *Criteria for judging proficiency and mastery*, *Implications of the curriculum*. These characteristics were selected based on how best each contributes to cultural assessment in each curriculum model, and how that assessment is attributed to the development of knowledge for learners.

The advocate's curriculum ideology is viewed in light of the six curriculum characteristics. A matrix was adapted from the work of Worthen and Sanders (1973). The matrix purpose is to highlight and provide a clear visual representation of how each advocate compares and contrasts on the six common curriculum characteristics (e.g., curriculum trends and deviations).

Curriculum Matrix Chart

This part of the study forms a presentation of the similarities and differences of the three curriculum models in a matrix. The matrix is developed to assist in the comparison and contrast of the work of six curriculum advocates. The matrix is based upon literature reviews pertaining to the three fields of curriculum and the views of the advocates towards six predetermined curriculum characteristics. Following the matrix, the findings section summarizes the answers and discussions to two-stage process.

Curriculum Models and Advocates	Africentric: Asante and Hilliard	Multicultural: Banks and Marable	Eurocentric: Schlesinger and Bennett
Characteristics:	Africentric	Multicultural	Eurocentric
Definition of Curriculum: The way in which each advocate defines curriculum.	An Africentric curriculum is defined as one that is based on the concept of Afrocentricity as a frame of reference wherein phenomena pertaining to education such as the arts, the humanities the sciences, history or cultural influences are viewed from the perspective of the African person. (Asante, 1987).	A Multicultural curriculum calls for full inclusion of victimized groups, based on race, class, gender and or sexual orientation into Western institutions giving them equal opportunity representation in the curriculum, and a reform of these institutions so that their practices are more consistent with their democratic ideals. (Banks, 1992).	A Eurocentric curriculum is traditionally discipline centered that provides a frame of reference where phenomena pertaining to education, such as history, the humanities, the sciences, the arts, values or cultural influences, are emphasized, viewed and taught from the perspective of the European person. (Bennett, 1999)
Purpose of Curriculum: The advocate's view of the goal of curriculum based on intent and desired outcome.	The goal of the Africentric curriculum seeks cultural ways to center African American children as a way of making learning interesting and personal. It further seeks to give to the children a view of themselves as subjects rather than objects in education, and to present authentic voice and knowledge pertaining to names, issues, plights and past and contemporary events that sustain particular affects of people of African descent.	The goal of the Multicultural curriculum seeks to close the gap between Western democratic ideals of equality and justice and social practices that contradict those ideals such as discrimination based on race, gender and social class (Banks, 1991/1992).	The goal of the Eurocentric curriculum seeks to emphasize the study of Western civilization and all it embodies, e.g., its heroes, heroic events, political leaders, revolutions, wars, westward expansion, laws and some non-Western cultures and events.
Key Emphasis of the Curriculum: The advocate's view of the major distinguishing attributes or characteristics of curriculum.	The key emphasis of the Africentric curriculum is its common vision between educators concerning the use of teaching methods and views that call for placing students of African descent within the setting of their own cultural references as a way to empower them and connect them socially and psychologically to other cultural phases.	The key emphasis of the Multicultural curriculum is content integration, knowledge construction, prejudice reduction, equity pedagogy and empowering school culture and social structure. In addition, the practice of cross-cultural literacy and awareness of diverse groups' significance to understanding the American experience	The key emphasis of the Eurocentric curriculum is high expectations, a structured plan for learning, a flow of consistent knowledge from one grade to the next, a common vision between principals and teachers, and what children are expected to learn each year.

		from the bottom up.	
Relationship to Instructional Objectives or Curriculum Decision Making: The advocate's explanation of goal specifications and priorities and areas of success and failure.	The relationship to instructional objectives include: the development of a Sankofa mindset which calls for returning to and learning proven African sources of knowledge and values and even returning to the days of segregation in American education (regardless of that barriers objective to promote failure) and utilize those methods that helped African American students succeed based on teacher knowledge of centering students in cultural ways.	The relationship to instructional objectives include: developing and use of a multicultural perspective that enables students and teachers alike to understand the connectedness of various groups and their histories alike. Recognition and elimination of failures that revolve around a mainstream- centric voice used to defining other cultures histories, values and ways and when and where they fit into textbook histories.	The relationship to instructional objectives include: teaching children how to think for themselves, respond to questions, solve problems, pursue an argument and weigh alternatives. Helping them develop those habits of mind and traits of character prized in American society for preparing them to enter into the community of responsible adults. Instead of neglecting to prescribe what is academically important and holding out a structured plan for learning.
Curriculum Criteria for Judging Proficiency and Mastery: The advocate's standards to determine mastery of the intended learning or skills.	The Africentric curriculum criteria for judging proficiency and mastery evolve around culturally friendly testing, mastering selected histories and historical facts, writing skills, technical and legal and ethnic knowledge, norms and values concerning African and other cultures.	The Multicultural curriculum criteria for judging proficiency and mastery evolve around culturally and gender friendly testing, mastering diverse history and historical facts with an emphasis on gender inclusion, writing skills, technical and legal knowledge and norms and values on a culturally diverse scale.	The Eurocentric curriculum criteria for judging proficiency and mastery evolve around standardized and integrative testing, mastering selected history and historical facts, writing skills, technical and legal and ethnic knowledge, and norms and values concerning the majority culture.
Implications of the Curriculum: The advocate's ideas of the structure, procedures and content of curriculum.	Implications of the Africentric curriculum call for assuring language and concepts are relevant, content emphasizes African civilizations, raising self confidence levels, developing test taking skills, setting standards of excellence, procedures follow Africentric format.	Implications of the Multicultural curriculum call for structure to provide an equal chance for male, female and diverse, racial and ethnic cultural groups to achieve academically in school, content would emphasize world/ global civilizations, procedures follow a diverse format.	Implications of the Eurocentric curriculum call for putting academics first, set high but attainable standards, teach fundamental skills, general knowledge about important people, ideas, events and terms, procedures follow from a traditional/Eurocentric format, content emphasizes Western civilization.

K-12 OUTREACH: ATTITUDES TOWARDS GAMING EDUCATION

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ABSTRACT

This article explains a survey about considering the use of gaming to teach Science, Technology, Engineering, and Mathematics (STEM) in public education. The researchers for this study wanted to identify the attitudes about gaming and its utilization in education, as well as the need to have gaming as a platform for integration of subject matter. Participants included students, teachers, administrators, and parents from around the world. The survey was launched from a website created to give students and teachers the needed resources for integrating gaming into the technology education classroom and participate in a student organization's new competitive event in game art and design. Findings from the survey show that many people from different walks in life see gaming a valuable tool for instruction. Over 90% of the 258 participants of the study indicated that they support the use of computer/video game development in education.

INTRODUCTION

Gaming is a major research focus area for many different disciplines in education as a tool that attracts students at all levels and can make learning fun. Although this current trend is just starting, a substantial amount of research has already been done on the use and effects' gaming has in the classroom. Considering the future growth of gaming in education, the researchers for this study wanted to find out the attitudes people from all walks of life have towards the use of gaming as a way to teach or reinforce content related to science, technology, engineering, and mathematics (STEM) disciplines.

Gaming is now a nine billion dollar industry with over 65% of all American households playing both video and computer games on a regular basis. With 94% of all computer games being played by people under the age of 18, and 40% being women, it was felt by the researchers of this study that games can become a valuable tool for encouraging scholarship in students. Considering that over 63% of parents see gaming as having a positive effect in their children's lives, maybe gaming can be used to enhance topics in STEM related disciplines (ESA, 2008). Gaming can redefine and reform what we know as education today. Scientists consider gaming the next great discovery, since it captivates students for hours and they will spend this time learning on their own using games. The Federation of American Scientists see gaming as redefining education and can help develop those skill sets employers want: analytical thinking, team building, multitasking, and problem-solving (Ben Feller, Associated Press on Gaming, 2006).

The researchers for this study feel that since gaming has become so popular with today's youth, maybe it could be a motivator for students that are struggling with learning and are in danger of dropping out of school. Knowing that students must pass both mathematics and science courses to graduate from high school, the researchers felt that enhancing the study of gaming through the use of game technology might be a way to work with students deemed at-risk. Therefore, this study was developed to see the effects gaming can have on the classroom and the attitudes that students, teachers, parents, and administrators have about the use of this new and evolving technology as a pedagogy tool.

Gaming in Education

Scientists consider gaming the next great discovery, a way to captivate student interest so that they will spend time learning on their own. Also, the Federation of American Scientists, which typically weighs in on matters of nuclear weaponry and government secrecy, recently stated that video games can redefine education. The theory behind this is that the study of gaming can teach life skills for the 21st century that employers want: these include analytical thinking, team building, multitasking, and problem-solving under duress (Ben Feller, Associated Press).

So, why have gaming in secondary education and especially a part of Career Technical Education (CTE and technology education? Gaming has the ability to make learning entertaining for most students and increase their motivation, especially those that seem at-risk of dropping out of school. It can also provide a quick and specific feedback system that can help student succeed in many subjects; and as the researchers found in their gaming

studies, STEM disciplines are no exception to this need. Games use story, characters, and other environmental elements that produce a unique experience that will allow them later to better recall subject matter they have learned. According to Moyneux (Bentley, 2006) “whereas traditional blackboard learning sees the learner as a passive recipient of knowledge, games-based learning allows” ... students to become an active member of their education.” Henry Jenkins from the Massachusetts Institute of Technology states that gaming can teach systematic things much better than just learning the facts being taught (2008).

Research in gaming has been on-going for many years as it relates to education but only in the past decade have we seen results that show the value gaming brings to the classroom as either a tool to learn subjects by (i.e. STEM disciplines), or as a career awareness area. Current research shows many things that are useful in the development and integration of gaming into any discipline. First, no indications of undesirable behaviors or critical attitudes or values (i.e. violence and sexism) have been found at a significant level for games. Many researchers have found gaming instrumental in psychomotor development and helping students create good spatial orientation skills that are needed for many careers. Also, psychomotor coordination and stress relieve (i.e. sports and dynamic games) have been seen in gaming research, as well as the ability to help students to think and reason logically (i.e. puzzles and question type games). Many instructors have found gaming and game development as a good supplement for traditional lecture. When used as a supplement, many teachers see an increase in student interest, motivation, retention, and improved higher-order thinking skills (Kritz & Hense, 2006; Prensky, 2003; Randel, al et, 1992). Considering all the above factors about gaming in education, the researchers decided to investigate and develop a two-year game art and design curriculum that will highlight all the above factors, and provide good technological literacy and 21st century skills.

METHODOLOGY

The process for developing the online survey about people’s attitude towards gaming began with extensive research in gaming and the use of games in education. The researchers visited both professional conferences and industries related to gaming, as well as conducted data mining for information related to the topic. Once the background research was conducted, the researchers began the process of developing the online survey instrument that targeted people who were attached to a website for gaming within the discipline of technology education. The website’s title “STEM: Gaming in Education” was used as a springboard to conduct research on people’s attitude towards the use of gaming in the classroom and was developed by the researchers of this study. The survey instrument was developed using a variety of similar types of instruments used to find information about a vast and diverse population. Research on both gaming content and online surveys was conducted in order to properly develop an instrument for the study. Once completed, the online survey was tested and reviewed by experts in the field of survey research, technology education, and educational psychology. This allowed the researchers to edit and refine the instrument before posting it on the website. Once approved by the institutional review board from the university, a link from the STEM website was activated with a security password system for participants taking the questionnaire. Participants were found by posting on technology education listservs, announcements at difference conferences, national workshops, and by simple word-of-mouth. The online survey was completed in the spring of 2008 with over 258 participants from a variety of backgrounds, cultures, and locations.

FINDINGS

The survey instrument collected a variety of information from its participants over a six month period that ended in the spring of 2008. A total of 258 participants volunteered to participate in the survey from 20 different states and four countries. These included participants from North Carolina, Florida, North Dakota, Georgia, Oregon, Virginia, Wyoming, Texas, Virgin Islands, Pennsylvania, New Jersey, New York, Washington, Illinois, Arkansas, Maryland, South Carolina, Iowa, Alaska, Ohio, Indiana, Brazil, Jamaica, and Guatemala. Sixty percent or 155 were students, 17% or 44 were teachers, five percent, or 13 were parents and three percent, or nine were administrators. Fifteen percent or 37 did not fill in the subject information area associated with the study.

The majority (60% or 151) of those participants that responded to the survey questions were between the ages of 14-18, male, and in high school. Table 1 shows the overall demographic information about participants in the study.

The survey asked participants what they felt would be a good definition for gaming from a menu of items that they could choose more than one answer from. Of the 258 that responded, most (77% or 199) indicated that gaming

was in the entertainment media category, but the category of computer-video technology was a close second with 75% or 193 selecting this category. Forty-two percent or 108 participants selected the category of gaming as an educational resource. The categories of violent and addictive were the least selected by participants. Violent having 19%, or 50 participants considered it as part of the definition of gaming and 35%, or 90 stating additive should be in the defining gaming. The survey gave participants an opportunity to give a free response. Selected responses from the question that asked what gaming is included the following: "computer programming based on the game industry," "you play games on the computer, phone, or outside," "gaming is a tool we can use to enhance our student's and our knowledge of the technology at hand," "something fun to do to kill extra time," "usually recreational," "having fun." The survey asked participants how many hours per day do they spend playing video and computer games. From the 258 that responded, 66%, or 129 indicated rarely to one to two hours per day. The range for this question was from zero time spent with 19%, or 43 participants to three percent or 10 indicating from four to six hours per day spent playing games each day.

Table 1
Demographic information about respondents to the survey.

Category	Freq.	Percent
Under 10 years	1	0%
11-13	12	5%
14-18	151	60%
19-22	17	7%
23-30	11	4%
31-40	10	4%
41 and over	50	20%
Male	188	73%
Female	64	24%
No Response	6	3%
Middle School	31	12%
High School	138	53%
Associate Degree	7	3%
Bachelors Degree	31	12%
Graduate Degree	45	18%
No Response	6	2%

Note: n for age categories is 252; for gender and education n=258

The focus of the study was to find out the value of gaming as a learning tool, especially for STEM disciplines. The results show that most participants, 74% or 190 agree or strongly agree that gaming is a valuable resource and learning tool for students. Forty-eight percent or 125 participants indicated that they have an interest in developing computer-video generated games. Seventy-two percent, or 187 participants agreed or strongly agreed that outside classroom homework assignment that use computer-video gaming development could be useful for student learning. Table 2 shows the frequencies and percentages associated with the topics on the value of gaming in education.

Table 2 Data collected from survey questions about the value of using gaming in education.
Valuable resource as a learning tool for students

Category	Freq.	Percent
Strongly Disagree	4	2%
Disagree	6	2%
Neutral	50	19%
Agree	107	42%
Strongly Agree	83	32%
No Response	8	3%

I have an interest in developing computer-video generated games

Category	Freq.	Percent
Strongly Disagree	17	7%
Disagree	40	15%
Neutral	64	25%
Agree	76	29%
Strongly Agree	49	19%
No Response	12	5%

Outside classroom homework assignments that use computer-video gaming development could be useful for student learning

Category	Freq.	Percent
Strongly Disagree	7	3%
Disagree	12	5%
Neutral	44	17%
Agree	114	44%
Strongly Agree	73	28%
No Response	8	3%

Note: n for each question is 258.

The next series of questions dealt with using gaming to teach subject matter in STEM related disciplines. As indicated in Table 3, the majority of survey participants agreed or strongly agreed with statements that asked if gaming can be used to teach these subjects. Seventy-one percent, or 183 participants indicated that they agree that gaming can be used in science as a way of instruction. In technology, 82% or 210 indicated the same thing about using gaming as a way to teach technology education subject matter. Seventy-one percent, or 184 participants agreed that mathematics can be taught through gaming in the classroom. As for combining the three disciplines together in an integrated curriculum of mathematics, science, and technology education, 77% or 199 participants agreed that gaming can help with integrated instruction for these disciplines. Table 3 shows the survey questions and the frequency and response rate for each of these STEM related questions.

Table 3 Data collected from survey questions about the value of using gaming in teaching STEM related disciplines.

Computer-video gaming can be used to teach students science

Category	Freq.	Percent
Strongly Disagree	3	1%
Disagree	10	4%
Neutral	50	19%
Agree	121	47%
Strongly Agree	62	24%
No Response	12	5%

Computer-video gaming can be used to teach students about technology

Category	Freq.	Percent
Strongly Disagree	1	0%
Disagree	5	2%
Neutral	31	12%
Agree	103	40%
Strongly Agree	107	42%
No Response	11	4%

Computer-video gaming can be used to teach students mathematics

Category	Freq.	Percent
Strongly Disagree	4	1%
Disagree	13	6%
Neutral	47	18%

Agree	114	44%
Strongly Agree	70	27%
No Response	10	4%

Computer-video gaming can be used to combine and teach concepts of science, technology, and mathematics education all together

Category	Freq.	Percent
Strongly Disagree	5	2%
Disagree	10	4%
Neutral	34	13%
Agree	107	41%
Strongly Agree	92	36%
No Response	10	4%

Note: n for each question is 258.

The survey asked participants about the future of gaming in education. The question stated “what is your opinion on the use of computer-video gaming development, do you believe it has a future in education?” Eight-nine percent, or 230 participants indicate that yes, games do have a future in education while seven percent, or 18 participants indicated no that gaming does not have a future in education. Four percent or 10 participants did not answer this question. Next, the survey asked participants to give a free response about the future of gaming in education. The following is a selected sample of those responses given by the participants: “no, video games are pointless”; “if structured properly, it could be very useful to the education arena as another tool to utilize in reaching out to different types of learning styles”; “it is a way for teachers to come up with a creative way that students would enjoy to learn”; “I’m concerned about the addictive nature of the games.”

In the final series of questions asked to participants, the researchers wanted to know if people would support or oppose the use of gaming in education. The actual question asked in the survey was “would you support or oppose computer-video gaming development in education?” Ninety percent or 233 participants said they would support gaming and its use in education, while six percent or 14 participants indicated that they oppose gaming use in education. Four percent or 11 participants did not answer this question. The final question asked participants for a free response on whether or not they support or oppose computer-video gaming development in education. Selected statements for this question are as follows: “video games prevent you from being physically active;” “there is so much you can learn from the environment around instead of playing some waste of life video game;” “it would be a greatly beneficial tool if there were a way to regulate the violent content;” “students learn through hands-on activities such as gaming or building.”

CONCLUSIONS

The survey data shows that gaming can be a useful tool for getting and keeping students interested in all areas of STEM education. From the self reported information provided by the participants of the study, it seems that many want to see gaming become a part of the pedagogy practiced used in our schools and a means to “reinforce” what is being taught. Technology education discipline especially is one area that sees this need and I would encourage technology teachers to pursue the integration of gaming into their existing curricula. Do consider that the population for this study came from targeted backgrounds in technology or related fields and had a direct interest in subjects like gaming. Therefore, more research is needed in this new and emerging area of education; new strategies for reaching students in the 21st century.

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HOLLYBUSH ACADEMY: A CASE STUDY IN SELECTED NOT-FOR-PROFIT ACCOUNTING ISSUES

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ABSTRACT

The purpose of this case is to help students explore accounting issues often confronted by auditors of not-for-profit organizations. Given certain facts, the goal of the case is require students to analyze the footnotes prepared by the auditors and discuss the presentation, classification and valuation of items not reflected on the financial statements prepared by the client. The case is intended for students who are taking an advanced accounting or not-for-profit accounting course.

INTRODUCTION

Hollybush Academy is a private coed religious college preparatory high school located on a 78 acre property in Windy Hills, New York, a wealthy suburb north of New York City. It is affiliated with one of the Protestant churches and is an educational corporation established under a certificate of incorporation issued by the State of New York in 1925. It has an approximate enrollment of 210 students and is supported by tuition and related fees, contributions, and income from endowment investments. The annual tuition excluding fees is \$26,000 per year.

The School has a history of high academic standards and consistently has gotten its graduates into the finest colleges and universities in the country including sending a number of students to Ivy League universities each year. Its alumni are very successful and many have achieved recognition in medicine, law, investment banking, accounting, and sundry other professions. Its alumni include prominent college professors, judges, partners in CPA and law firms, famous surgeons, and TV personalities. Moreover, the alumni are very involved in the School's activities, and are very appreciative of the education that they received. Accordingly, they give back handsomely to the School.

Present Situation

Since the School has never had the need to be audited as they had no existing bank loans, had no Form 990 (annual report for non profit organizations) requirements (religious organizations are exempt from filling Form 990), quarterly and annual financial statements were prepared by the Chief Fiscal Officer. For years, the Board of Trustees operated as a "rubber stamp" board and merely reviewed the financial statements, approved the budget for the following year, and made a number of minor recommendations.

Having served the School for 25 years as President, Mrs. Joyce Reynolds recently retired. At the same time, several new members were appointed to the Board of Trustees. These new Board members had a more business like approach, and accordingly, insisted on conducting an extensive search for a replacement. Their goal was to hire someone with a keen understanding of current trends in education and who possessed the ability to further implement technology into the classroom. In addition, at the same time the Board members started to ask probing accounting and finance questions and thus came to the conclusion that the present Chief Fiscal Officer did not provide satisfactory answers to their questions and was unable to furnish schedules and information requested by them. Consequently, the Board redefined the duties of the Chief Fiscal Officer and decided to conduct a search for a Vice-President of Finance. The chief fiscal officer did not object to downgrading her position and actually appeared to welcome being the second in charge. Although the net expense would be much higher, the Board was insistent on doing things in a more business like manner. Since the chief fiscal officer's assistant in the accounting department, who handled many of the general bookkeeping duties, was leaving as her husband was being transferred to Ashville, North Carolina, the moves proposed by the Board was not as costly as the assistant was not replaced.

After a number of interviews, a president (Dr. Robert Stevenson) was hired. He had extensive experience in both education and business. He received his Ed.D degree from a prominent university in New York City and then pursued an MBA. He taught high school and worked for a Fortune 500 company. However, his first love was education. His desire was to get into supervision where he could use his knowledge of both education and business. The Board was able to lure him away from his comfortable job as principal at a very prestigious prep school in New York City.

At the same time the Board was able to hire an outstanding person at a very reasonable price as Vice President of Finance. Ms. Susan Kennedy was formerly a CFO of a hedge fund. She has her CPA certificate, and made enough money (a fortune by many people's standards) to be comfortable for the rest of her life. Being only 45 years old, her desire was to work for a not-for-profit organization and "give back", if you will, to society. She wanted to work for a place where she could add value. Hollybush Academy was a perfect place for her. Besides she was more than satisfied with her \$100,000 salary as money was not a factor.

The new Board's business approach to the School resulted in a number of reforms. Working closely with the new President and Vice President of Finance, they established several committees including ones for Finance, Investment and Plant activities. Being concerned with corporate failures, such as WorldCom and Enron, and bank failures such as Countrywide Bank, and Bear Sterns due to the subprime mortgage fiasco, they became concerned with the potential for misstatements in the financial statements, and the possibility of fraud. They were aware that the Sarbanes Oxley Act did not apply to them (being a nonpublic company and a not-for-profit organization). However, they wished to act as if it did. Therefore, they established a mandate that the financial statements should be audited and that the auditors should issue a management letter to detail any suggestions for improvements in internal controls, if any.

Requests for proposals were sent out to several CPA firms who concentrate on not-for-profit organizations. The firm of Arthur Novak & Company from New York City was selected. After interviewing a number of firms, the Finance Committee recommended AN&Co as auditors due to their extensive experience with not-for-profit organizations, particularly schools and religious organizations.

AN&Co commenced their audit for the year ended June 30, 2007 on August 1, 2007. They obtained the School's trial balance as of June 30, 2006 since it was necessary to satisfy themselves to the Statement of Activities (asset, liability and net asset numbers as of the beginning of the year). In addition, they obtained the trial balance as of June 30, 2007 along with the financial statements prepared by the School. These statements were prepared by the Chief Financial Officer as the new President and Vice President were not scheduled to begin their jobs until September 1, 2007.

Findings by Auditors

The School's major assets are cash and cash equivalents, promises to give receivables, investment securities, bequests receivable, and premises and equipment. Its major liabilities are accounts payable, accrued expenses, accrued severance benefits, and deferred income. However, the accounting by the School in several of these areas was deficient in that current pronouncements (Financial Accounting Standards, particularly FAS #116, #117 and #157) were not followed. Although the bookkeeping was accurate, the accounting was misleading and not in accordance with generally accepted accounting principles established in the United States.

Work by Auditors

The auditors reviewed the trial balances as of June 30, 2006 and June 30, 2007, and noted that the comparative financial statement (Exhibit A) was prepared by the Chief Fiscal Officer from the respective trial balances.

During the engagement, the auditors found that the bookkeeping was generally accurate, but there were many financial reporting deficiencies. After much reconstruction of the accounting, the auditors were able to draft financial statements for the year ended June 30, 2007. The footnotes attached to the financial statements are below:

1. Organization

Hollybush Academy is a private coed religious college preparatory high school located in Windy Hills, New York, a wealthy suburb north of New York City. It is affiliated with one of the Protestant churches and is an educational corporation established under a certificate of incorporation issued by the State of New York

in 1925. It has an approximate enrollment of 210 students and is supported by tuition and related fees, contributions, and income from endowment investments.

2. Summary of Significant Accounting Policies

Basis of Accounting and Use of Estimates

The accompanying financial statements are prepared on the accrual basis of accounting. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and reported amounts of revenues and expenses during the reporting period. Actual amounts could differ from these estimates.

Basis of Presentation

The School follows established standards for external financial reporting by not-for-profit organizations. Accounting standards require that unconditional promises to give be recorded as receivables and revenues and require the organization to distinguish between contributions received for each net asset category in accordance with donor imposed restrictions. Conditional promises to give are recognized when the conditions on which they depend are substantially met. The three net asset categories are unrestricted net assets, temporarily restricted net assets and permanently restricted net assets. Unrestricted net assets have no donor-imposed restrictions. Temporarily restricted net assets have donor-imposed restrictions that are satisfied either by the passage of time or expenditures that meet the donor-specified purpose. Permanently restricted net assets have donor-imposed restrictions that do not expire.

Federal Income Taxes

The School is exempt from taxes pursuant to Section 501(c)(3) of the Internal Revenue Code as an educational, charitable and religious entity. Accordingly, no provision for income taxes has been recorded in the statement of activities and changes in net assets.

Expiration of Donor-Imposed Restrictions

The expiration of a donor-imposed restriction on a contribution or on endowment income is recognized in the period in which the restriction expires and at that time the related resources are reclassified to unrestricted net assets. A restriction expires when the stipulated time has elapsed, when the stipulated purpose for which the resource was restricted has been fulfilled, or both. In addition, the School follows the policy of reporting donor-imposed restricted contributions and endowment income whose restrictions are met within the same fiscal year as unrestricted support.

Cash and Cash Equivalents

The School considers all highly liquid investments with a maturity of three months or less when purchased to be cash equivalents.

Concentration of Credit Risk

The School maintains its regular and restricted cash balances and certificates of deposit with one highly respected financial institution. However, these deposits at times exceed the Federal Deposit Insurance Corporation (FDIC) insurance limit of \$100,000 per institution. As of June 30, 2007, the School's balances on deposit with this financial institution were \$600,000 in excess of the FDIC insurance limits.

Concentration of credit risk associated with investment securities is considered low due to the credit quality of the financial institution holding these investments.

Accounts and Promises to Give Receivable

The School provides allowances for doubtful receivables equal to the estimated collection losses that will be incurred in collection of all receivables. The estimated losses are based on historical collection

experience coupled with a review of the current status of the existing receivables, including promises to give.

Investment Securities

Investment securities are recorded at fair value. The fair value of equity and debt securities is based on the quoted market value of the underlying securities. Gains and losses are realized as of the trade date for investments.

Premises and Equipment

Acquisition of land, buildings, improvements, and equipment are stated at cost, or at the fair value at date of contribution if acquired by gift. Donated services related to the School's construction projects are capitalized at the fair value of such services. Depreciation expense has been computed using the straight-line method. Estimated useful lives of the School's premises and equipment are as follows:

	<u>Years</u>
Building and building improvements	30
Furniture and equipment	3 - 7

Revenue Recognition

The School records tuition and related fees as services are rendered through the academic year. Payments received in advance prior to June 30 which relate to the subsequent year are included in deferred income and other liabilities in the accompanying statement of financial position.

Advertising Costs

Advertising costs are expensed as incurred and amounted to \$13,400 for the year ended June 30, 2007.

Volunteers

A number of volunteers have made significant contributions of time to the School's program and support functions. The value of this contributed time does not meet the criteria for recognition of contributed services and accordingly, is not reflected in the accompanying financial statements.

3. Promises to Give Receivable

These amounts, less an appropriate allowance for uncollectible promises, are recorded at their estimated fair value with amounts due later than one year at the present value of estimated future cash flows. Promises to give receivable at June 30, 2007 are as follows:

Promises to Give Receivable expected to be collected in--	
Less than one year	\$ 837,400
One to five years	3,000,000
Thereafter	2,750,000
	<u>6,587,400</u>
Less - allowance for uncollectible promises to give	(250,000)
Less - discount at 5%	(1,277,000)
Net Promises to Give	<u><u>\$ 5,060,400</u></u>

4. Investment Securities

An analysis of the School's investment securities by fund at June 30, 2007 is as follows:

	<u>Fair Value</u>	<u>Cost</u>	<u>Fair Value Over (Under) Cost</u>
Mutual Funds	\$ 18,862,600	\$ 16,522,400	\$ 2,340,200
Equities	7,996,200	5,699,700	2,296,500
	<u><u>\$ 26,858,800</u></u>	<u><u>\$ 22,222,100</u></u>	<u><u>\$ 4,636,700</u></u>

An analysis of investment return for the year ended June 30, 2007 is as follows:

Interest and dividends	\$ 723,300
Realized gains	250,800
Unrealized gains	3,066,500
	<u>\$ 4,040,600</u>

5. Beneficial Interest in Charitable Trusts

The School is the irrevocable beneficiary of two charitable trusts that are subject to certain split-interest agreements. At June 30, 2007, the School had an asset of \$336,000, respectively, for its beneficial interest in these trusts which has been calculated on a present value basis using a 5% discount rate and the estimated mortality of the applicable donors.

6. Bequests Receivable

The School has been named as a beneficiary under the wills of two deceased alumni. Collection on the proceeds of these bequests is proceeding subsequent to the balance sheet date. Bequests receivable in the amount of \$6,200,000 have been recorded based on the available information from estate administrators.

7. Premises and Equipment

An analysis of premises and equipment as of June 30, 2007 is as follows:

Land	\$ 3,000,000
Building and building improvements	24,697,400
Furniture and equipment	1,796,700
	<u>29,494,100</u>
Less--accumulated depreciation	(14,970,400)
Total	<u>\$ 14,523,700</u>

8. Accrued Severance Benefits

During 2007, the School entered into severance agreements with seven faculty members. Accordingly, the School has agreed to pay these individuals a percentage of their regular salary in addition to providing medical coverage until the age of 65.

Severance benefits expected to be paid in --

Less than one year	\$ 324,300
One to two years	270,000
	<u>594,300</u>
Less - discount at 5%	(12,900)
Net Amount Payable	<u>\$ 581,400</u>

9. Contingencies

From time to time, the School may become involved in legal claims arising in the ordinary course of its activities. In the opinion of management, the outcome of any legal proceedings are covered by the School's insurance policies and accordingly, would not have a material effect on its financial position or results of operations.

Other Audit Findings



Review of tuition receivable at June 30, 2007 revealed that the provision for uncollectible tuition should be approximately \$63,000. The School has been employing the direct write off method when accounting for bad debts.

Promises to give receivable relate to a capital campaign, the purpose of which was to raise money for scholarships so that more financial aid could be given to promising students in addition to providing resources for building improvements, particularly technology upgrades.

Inventories relate to auxiliary services (bookstore and cafeteria). The School never took an actual count of the textbooks, clothing and supplies in the bookstore or of the non perishable cafeteria supplies at year end. They merely estimated the amount based on the relationship between bookstore purchases and sales and cafeteria purchases and sales.

The School has a rather large endowment fund (Investment Securities) resulting from a number of major gifts from prominent alumni in addition to transfers each year of a portion of the excess of revenues over expenses. The School has been recording this amount at cost of the investments.

Beneficial interest in charitable trusts relate to two trusts set up by an alumnus from the class of 1951 and another from the class of 1939. The beneficial interest in these trusts at June 30, 2007 was \$336,000. At June 30, 2006, the beneficial interest was \$243,000.

Teachers work 10 months (September to June), but are paid over 12 months. At June 30, 2007, salaries applicable to July and August, 2007 amounted to approximately \$420,000. The corresponding amount for July and August, 2006 amounted to \$404,000.

The School offered a severance package to teachers in order to provide an incentive to get a number of teachers to retire. Seven of the faculty members took advantage of the School's offer.

Prior to June 30, 2007, the School collected \$490,000 relating to tuition for the following school year. The corresponding amount for the year ended June 30, 2006 was \$380,000. The School recorded the tuition as revenues when received.

The net assets of the School were segregated into three funds, namely operating, plant and endowment funds.

Instructions

Review Statements of Financial Standards #116, (*Accounting for Contributions Received and Contributions Made*), #117 (*Financial Statement Format*), #157 (*Fair Value Measurement*), and the AICPA Audit and Accounting Guide (*Not-for-Profit Organizations*). Note that FAS #157 was effective for years ending after November 15, 2007; however, it was decided to apply early adoption of this pronouncement. Accordingly, analyze the auditors' footnotes and additional information provided and answer the following:

What account descriptions specifically would appear in the June 30, 2007 statements? How would these accounts be classified and valued? Cite references to SFAS #116, #117, #157 and the AICPA audit guide. You do not have to revise the client's statement (Exhibit A); merely, describe what is wrong with the client's statement and also what information determined from your analysis should appear in other statements.



Exhibit A

**HOLLYBUSH ACADEMY
BALANCE SHEETS
JUNE 30, 2007 AND 2006**

	2007	2006
Assets		
Cash	\$ 690,200	\$ 576,300
Cash equivalents	1,000,000	1,000,000
Tuition receivable	173,100	152,500
Other receivables	258,600	278,900
Inventories	97,000	97,000
Prepaid expenses	20,900	18,800
Investment securities	22,222,100	20,747,700
Premises and equipment	14,523,700	14,884,100
Total Assets	\$ 38,985,600	\$ 37,755,300
Liabilities and Fund Balances		
Liabilities--		
Accounts payable	\$ 122,300	\$ 137,400
Other liabilities	17,500	12,700
Total Liabilities	139,800	150,100
Fund Balances--		
Operating	2,100,000	1,973,400
Plant	14,523,700	14,884,100
Endowment	22,222,100	20,747,700
Total Net Assets	38,845,800	37,605,200
Total Liabilities and Net Assets	\$ 38,985,600	\$ 37,755,300

TEACHING NOTES

The best way for students to start this case is to ask three basic questions, namely:

1. What is wrong with the comparative financial statement prepared by the client?
2. Why was emphasis placed on FAS #116, #117, #157 and the AICPA Audit and Accounting Guide, *Not-for-Profit Organizations*?
3. How does one ensure that most of the relevant points are addressed?

The students should familiarize themselves with the main items addressed in FAS #116, #117, and #157. They should discover that the financial statement prepared by the client was deficient because it addressed the statement as balance sheet instead of statement of financial position. Secondly, it was prepared using a fund balance approach instead of the recommended net assets (unrestricted, temporarily restricted, and permanently restricted).

If the students then follow the footnotes and the other audit findings point by point, they could list the deficiencies and cross-referenced them to the applicable areas in accounting literature. For example—

Note 1 -- Organization

Note 2 -- Summary of Significant Accounting Policies

Full Disclosure Principle and APB #22 -- "Disclosure of Accounting Policies"
Companies should disclose information about accounting policies and include those that users of financial statements find essential in order to make economic decisions.

Some students will cross reference specific policies to particular pronouncements. For example, concentration of credit risks was included in response to FAS #107, "Disclosures About Fair Values of Financial Statements".

In addition, reasons for disclosures about volunteers and advertising costs could be found in the AICPA Audit and Accounting Guide.

Note 3 -- Promises to Give Receivable

After reading FAS #116, students should find that promises to give (pledges) if in writing, must be recorded as a receivable at the net present value. Thus they should indicate that this item belongs on the Statement of Financial Position as an asset at net promises to give. They will also find out and indicate that if this were the first year of the campaign, contributions would be recorded at \$5,060,400 in the Statement of Activities. If the organization had promises to give in the prior year, the change would be debited or credited in the contributions line in the Statement of Activities.

Note 4 -- Investment Securities

Assuming that these are trading securities, they should



be reported at fair value in the Statement of Financial Position and Unrealized Gains/Losses should be reported in the Statement of Activities along with Interest and Dividends and Realized Gains/Losses. Students should cite FAS #115, "Accounting for Certain Investments in Debt and Equity Securities" and FAS #157, "Fair Value Measurement. The client erroneously recorded these investments at cost.

Note 5 -- Beneficial Interest in Charitable Trusts

Students should find information about split-interest agreements in the AICPA Accounting and Audit Guide. Research would reveal that this amount should be included in the Statement of Financial Position as an asset at its net present value. The change between years should be reflected in the Statement of Activities as Change in Beneficial Interest in Charitable Trusts as a revenue item. The client did not include this item on its financial statement.

Note 6 -- Bequest Receivable

Likewise the client did not include this item on its financial statement. Research in the AICPA Accounting and Audit Guide will reveal that it is a proper receivable assuming the wills have been probated.

Note 7 -- Premises and Equipment

Students could simply mention "historical cost principle" and "full disclosure principle". In addition, they could possibly refer to APB #12 - "Omnibus Opinion-1967", which stated that companies should disclose the average useful life of the property and corresponding depreciation.

Note 8 -- Accrued Severance Benefits

This item did not appear on the financial statement prepared by the client. However, an expense of \$581,400 should appear in the Statement of Activities with a corresponding liability in the Statement of Financial Position. This is a long-term liability and, accordingly, should be recorded as its net present value. It is based on services rendered prior to June 30, 2007 and thus is an expense of that period. Student should reference FAS #106, 'Employers Accounting for Post-Retirement Benefits Other Than Pensions'.

Note 9 -- Contingencies

Students could possibly cite FAS #5, "Accounting for Contingencies".

Other Audit Findings

Tuition receivable

The auditors found that the School was employing the



	<p>direct write-off method to account for bad debts. It should be pointed out that this is not GAAP. Accordingly, a reserve of \$63,000 should be established with a corresponding bad debts expense of \$63,000.</p>
Promises to Give Receivable	<p>FAS #116 would reveal that this is a temporarily restricted asset as it has a donor imposed restriction that is only satisfied by the passage of time. Therefore, this amount should be reflected in net assets as part of temporarily restricted net assets.</p>
Inventories	<p>The School should take an actual count of its bookstore and cafeteria inventory at the end of the year and reflect the appropriate cost on the Statement of Financial Position.</p>
Investment Securities	<p>This should be stated at fair values as explained above.</p>
Beneficial Interest in Charitable Trusts	<p>This was explained above. The difference the asset at June 30, 2007 and the amount at June 30, 2006 should be reflected in the Statement of Activities as "Change in Beneficial Interest in Charitable Trusts". This could either be a revenue or expense depending on whether it was an increase or decrease from year to year.</p>
Accrued Salaries	<p>The client has no amount for accrued salaries on the financial statement that it prepared. There should be an accrual for \$420,000 and \$404,000, respectively, at June 30, 2007 and 2006.</p>
Accrued Severance Benefits	<p>This was explained above.</p>
Unearned Income	<p>These amounts were incorrectly recorded by the client. They employed the cash rather than accrual method of accounting. Therefore, \$490,000 and \$380,000, respectively should be included as unearned tuition at June 30, 2007 and 2006.</p>
Net Assets	<p>The client broke down its fund balances between operating, plant and endowment. According to FAS #117, the proper categories are unrestricted, temporarily restricted, and permanently restricted net assets.</p>



U.S. REGULATORS' RESPONSES TO THE FINANCIAL REPORTING NEEDS OF GLOBAL INVESTORS

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ABSTRACT

The purpose of accounting is to provide information that is useful for making business and other economic decisions. Globalization has increased the need to communicate in financial terms across borders. Global differences in accounting practices have given rise to the need for “transnational financial reporting.” In response to this need for “global” financial statements, standard setting organizations around the world are working toward making a uniform set of accounting standards to be used across national borders a reality. This paper discusses the problems that transnational financial reporting creates and also discusses the ways in which the Securities and Exchange Commission (SEC), the Financial Accounting Standards Board (FASB), the International Accounting Standards Board (IASB) and other international organizations are improving the usefulness of financial statement reporting. Also discussed are the ways in which standard setting organizations around the world are working to make “harmonization” of accounting standards a reality.

INTRODUCTION

The purpose of accounting is to provide information that is useful for making business and other economic decisions. Globalization has increased the need to communicate in financial terms across borders. Just as languages create real barriers to communication, so too have the national differences in accounting systems created barriers to effective communication across borders in the various financial markets worldwide. These differences in accounting practices have given rise to the need for “transnational financial reporting.” This refers to reporting across national borders to user groups located in a country other than the one where the company is headquartered.

Companies prepare the financial statements in their annual report directed toward the needs of their primary users. Financial statements produced in different countries not only look different but report different information. Moreover, even if companies in different countries orient their financial statements toward similar user groups, there are still likely to be differences in accounting practices and in the presentation of the annual reports (Gernon and Meek, 2001). Because the Generally Accepted Accounting Principles (GAAP) of no two countries are the same, financial information does not travel well internationally. *Measurement* and *disclosure* are the two dimensions of the subject matter of financial accounting and around which the problems created by diversity in accounting systems are most prominent. *Measurement* concerns economic events and transactions whose effects are reflected directly on the three basic financial statements (i.e. the balance sheet, income statement, and cash flow statement) (Gernon and Meek, 2001). *Disclosure* is the process of divulging accounting information so that the content of financial statements is understood (http://www.nyssepa.org/prof_library/guide.htm#D)

WORK OF STANDARD SETTING AGENCIES AROUND THE WORLD

Standard setting organizations around the world are working toward making a uniform set of accounting standards to be used across national borders a reality. To address the need for financial statements to be useful to global users the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) have embarked on a joint project to make changes in the presentation of financial statements. The objective of this joint FASB/IASB project is, as the FASB points out, “to establish a common, high-quality standard for presentation of information in the individual financial statements (and among the financial statements).”

Change is geared toward improving the ability of investors, creditors, and other financial statement users to understand an entity’s present and past financial position, to understand the past operating, financing, and other

activities that caused an entity's financial position to change, and the components of those changes, and to use that financial statement information (along with information from other sources) to assess the amounts, timing, and uncertainty of an entity's future cash flows. The standard will address the presentation and display of financial statement information, including the classification and display of line items and the aggregation of line items into subtotals and totals (http://www.fasb.org/project/financial_statement_presentation.shtml#objective).

Along with the FASB and IASB, the U.S. Securities and Exchange Commission (SEC) established the SEC Advisory Committee on Improvements to Financial Reporting in July 2007 to examine the U.S. financial reporting system with the goals of reducing unnecessary complexity and making information more useful and understandable for investors. The advisory committee is charged with examining the U.S. financial reporting system in order to provide recommendations about how to improve its usefulness for investors and reduce unnecessary complexity for U.S. companies.

The SEC is also responding to many investors who have expressed the concern that as financial reporting has become more complex, it is often difficult to understand the financial reports of companies in which they invest. Likewise, companies have expressed concerns that it is difficult to ensure compliance with U.S. GAAP and SEC reporting rules when preparing financial reports. (SEC Release No. 2007-154, 2007).

Arguments For and Against Harmonization

Proponents of standardized accounting financial statements argue that diversity in accounting practices increases the possibility of misunderstood financial communication across borders. Critics however, point to the fact that accounting, as a social science, is a product of its environment. Many scholars and practitioners believe that complete uniformity would not necessarily yield the best results; it might actually distort financial statements by stressing form over substance. In fact, many differences in financial reporting methods are far from arbitrary, reflecting divergences in economic "infrastructures" as well as cultural habits (Haskins, Ferris and Selling, 2000). Other critics argue that enterprises competing in international markets will spontaneously disclose financial information in order to be competitive; therefore, regulated disclosure is unnecessary (Zarzeski, 1996).

These critics may be right. In September 2006, Ernst & Young (E&Y) published its *Observations on the Implementation of IFRS* (International Financial Reporting Standards) in which E&Y reviewed the 2005 financial statements of some of the largest companies in the world to, among other things, assess the degree of consistency and comparability among companies that has resulted from IFRS adoption. More than 8,000 listed European Union (EU) companies have implemented IFRS since 2005. One key trend that emerged from the E&Y review was that IFRS financial statements retain a strong national identity, although the review also found that there was significantly greater consistency in accounting recognition and measurement and far greater disclosure of information in financial statements. The review also concluded that the 2005 implementation of IFRS has been a resounding success overall.

The E&Y review also determined that financial statements prepared under IFRS are significantly more complex than financial statements based on national accounting standards. If the SEC is moving toward accepting IFRS-prepared financial statements, this complexity goes counter to the SEC and FASB's goal of making financial statements more decision-useful since complexity threatens to undermine this objective.

IFRSs [IASs] are now accepted from foreign registrants on a large number of stock exchanges, including those in Australia, London, Germany, Hong Kong, Kuala Lumpur, Singapore, and Zurich, while several stock exchanges do not even require any additional disclosure reconciling IFRSs [IASs] to their country's own domestic GAAP (Larson, 1993). The SEC is the only regulatory authority in the world that requires all firms listed on U.S. stock exchanges to conform their financial statements to U.S. GAAP or reconcile to U.S. GAAP.

These requirements, established by the SEC in 1982, have been criticized for imposing higher listing costs on foreign companies which reduce U.S. competitiveness by causing these firms to stay away and list their stocks in other less costly markets. Thus, the SEC, FASB and IASB have established a goal to eliminate the reconciliation requirements for financial statements of non-U.S. issuers by 2009. The SEC identified in an April 1996 statement, "SEC Statement Regarding International Accounting Standards", three elements that will be critical for acceptance of IFRSs [IASs] for US filings are:

The standards must be of "high quality" – they must result in comparability and transparency, and they must provide for full disclosure.

The standards should include a core set of accounting pronouncements that constitute a comprehensive, generally accepted basis of accounting.

The standards must be rigorously interpreted and applied (Teets, 2000).

In September 2007, the SEC issued a Concept Release to obtain public comments on whether U.S. registrants should be permitted to file financial statements prepared in accordance with IFRSs. The SEC's comment period on the proposal to allow foreign issuers to list without U.S. GAAP reconciliation closed on September 24, 2007. Conrad W. Hewitt, SEC Chief Accountant and John W. White, SEC Director, Division of Corporation Finance, when speaking before the Subcommittee on Securities, Insurance, and Investment of the U.S. Senate Committee on Banking, Housing, and Urban Affairs pointed out that the Commission received approximately 120 comment letters in which the vast majority of commenters agreed that, overall, the use of high quality globally accepted accounting standards was an important and worthwhile goal in helping the global capital markets function effectively (Hewitt & White, 2007).

In testimony before the House Financial Services Subcommittee on Capital Markets, Insurance and Government Sponsored Enterprises, Marshall Carter, New York Stock Exchange (NYSE) Group, Inc. Chairman noted the steady decline in global foreign initial public offerings (IPOs) that are SEC-registered and listed on a U.S. exchange. In addition, he noted that more IPOs are global-and fewer are listed in the U.S. Among other reasons, Mr. Carter believed that the loss of listings on U.S. financial markets is due to the lack of convergence in international accounting standards (Carter, 2006).

Impact of Sarbanes-Oxley Act

The Sarbanes-Oxley Act of 2002 (SOX) has added its own burden to the cross-listing of international companies in U.S. markets. Because SOX does not distinguish between domestic and foreign issuers, neither does it exempt foreign issuers, the provisions that apply to U.S. issuers also apply to non-U.S. issuers unless they are specifically excluded by a related provision of the Exchange Act or the Securities Act. These SOX provisions include compliance with, among other things, financial reporting, CEO and CFO certifications, internal controls, risk management, the composition of audit committees, and corporate codes of ethics, whistleblower protection, and attorney conduct. During the implementation of SOX, however, the SEC realized that in some instances it was impossible for some foreign issuers to comply with both the laws of their home country and the terms of SOX (Zhu and Small, 2007).

Zhu and Small's (2007) research on the impact of SOX on cross-listed companies' decisions to delist from the U.S. stock exchanges showed that the number of American Depositary Receipt (ADR) delistings began to increase while the number of domestic delistings began to level off and actually fell in 2005, providing some evidence that SOX has had a chilling effect on the decision of foreign companies to stay listed in the U.S. Some companies blame the "overreaching requirements" of SOX for the increase in financial statement restatements that have occurred since 2001. The number of restatements rose from 92 in 1997 to 225 in 2001. A study conducted by Glass, Lewis & Co., a corporate governance research firm showed that in 2005, public company restatements hit a record high of 1,295 – almost double the 2004 total of 650. However, the researchers of this same study disclosed that in 2005, over half of the companies that restated their financial statements had also disclosed at least on material weakness in their internal controls over financial reporting (Garner, McKee and McKee, 2008, p. 216).

SOX notwithstanding, Richard G. Ketchum, Chief Executive Officer, NYSE Regulation, Inc., has noted that the U.S. exchanges' shares of the global market cap of listed companies has shrunk from 46% in 1999 to 39% in 2006 due, in part, to foreign investors' concerns regarding the impact of excessive private litigation and regulation in the U.S. (Ketchum, 2007).

Cooperation between FASB and IASB

The FASB and IASB have made significant progress in their goal to harmonize U.S. GAAP with international accounting standards. Their published joint *Memorandum of Understanding*, published in 2006, indicates that a common set of high quality global standards remains the two organizations' long-term strategic priority. There, however, remains no firm target date for the true convergence of U.S. and international accounting standards, while the European Union (EU) is already requiring financial IFRS for its listed companies. Nearly 100 countries, including all member states of the EU, have adopted international Financial Reporting Standards (IFRS), as their home country GAAP. The IASB publishes IFRS in approximately 40 languages and a number of countries which have adopted IFRS have made country-or industry specific modifications to the IASB version of IFRS (Sullivan &

Cromwell, 2007). The EU and the SEC have agreed that the U.S. would accept IFRS by 2009 and the EU would continue to accept US GAAP.

One challenge that faces U.S. companies should the SEC allow IFRS reporting, will be the substantial amount of training that will be needed for compliance with these standards. Another challenge will be the learning curve of working with IFRS financial statements without U.S. GAAP reconciliation. However, the improved comparability of financial information is expected to ultimately result in a reduction of the cost for companies of raising capital.

The objective of the FASB-IASB project is to establish standards for the presentation of information in financial statements that would improve the usefulness of that information in assessing the financial performance of a business enterprise (FASAC, 2005). The IASB has made suggestions to change financial statement presentations to improve their decision usefulness to include, among other things, that a complete set of financial statements would include (a) a statement of financial position (previously 'balance sheet'); (b) a statement of recognized income and expense; (c) a statement of changes in equity; and (d) a statement of cash flows (previously 'cash flow statement').

The Boards also agreed on working principles regarding the quality of information that is presented in financial statements such that financial statements:

Portray a cohesive financial picture of an entity.

Allow for comparability over time.

Allow for comparability across entities.

Help a user assess the liquidity of an entity's assets and liabilities (nearness to cash or time to conversion to cash).

Separate an entity's financing activities from its operating and other activities and further separates financing activities into transactions with owners in their capacity as owners and all other financing activities.

Help a user understand the measurement attributes used to measure assets and liabilities; the relative dispersion of the measurements of individual assets and liabilities; what causes a change in reported amounts of individual assets and liabilities (such as transactions or remeasurements).

Disaggregate items into groups that respond similarly to changes in the same economic condition, and presents subtotals and totals where appropriate (FASAC, 2006)

CONCLUSION

The trend toward foreign investment is not only expected to continue, but to explode. Increasingly, many companies are choosing to raise capital globally. The amount of capital raised by foreign issuers with a SEC Rule 144A (which covers private resales of securities to institutions) component grew from \$57 billion in 2004 to over \$137 billion in 2006 (Ketchum, 2007). The IASB, FASB and SEC continue to work towards meeting the needs of their global constituents and meeting the necessary changes needed to support global capital markets while trying to effectively protect global investors.

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ENTERPRISE RESOURCE PLANNING (ERP) SYSTEMS & ACCOUNTING INFORMATION SYSTEMS (AIS): DO THESE BUSINESS SYSTEMS HAVE THE POWER TO CHALLENGE ACCOUNTING CURRICULUMS TO MORE PEDAGOGICAL RELAVANCY?

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ABSTRACT

Significant criticism has been levied regarding the slow movement shown by U.S. higher education towards the integration of information technology and systems into accounting curriculums and pedagogy. Accounting curriculums have come under great scrutiny during the decade, for perceived technology, ethics, and various other deficiencies.

Numerous accounting professional organizations and firms have commissioned studies, prepared white papers and research project/papers, written about the lack of proper courses, materials, and focus in the accounting curriculums. This paper relates the chronology of these efforts and critical factors against their adoption.

As a potential major influence, Enterprise Resource Planning Systems (ERP) have become the de facto information systems standard during the past decade for major organizations and are making significant inroads to the small and middle sized enterprises (SME) marketplace. Accounting Information Systems (AIS) are often modules of an ERP or “stand-alone” systems. Both of these reflect accounting reporting requirements that are significant in an accountant’s daily functions and are becoming more sophisticated and complex. Given these factors, inertia for change still exists in accounting programs.

INTRODUCTION

Enterprise Resource Planning Systems (ERP) are widely adopted information processing and planning systems that integrate all departments and functions in an organization, and have many component modules. ERP systems are based on “best practice” business processes. Components include classic Accounting Information Systems (AIS) integrated with Customer Relations Management (CRM), Supply Chain Management (SCM), Human Resources Management (HRM), Production Management (PM) and many other functions. ERP systems are implemented in public and private companies, colleges and universities, not-for-profits organizations, retail, wholesale, and manufacturing sectors (Bodnar & Hopwood, 2001; Davenport, T., 2001). ERP systems are maturing and currently entering the *Third Wave* (Deloitte, 1999), after initial implementation and a “Second Wave” of business process changes and operational enhancements.

Legacy systems are long existing dedicated mainframe systems where each organizational subdivision may have its own dedicated computer system and often are not integrated with other existing systems. Contrastingly, ERP systems combine all organizational divisions into a cohesive single integrated program. This integration is typically accomplished with a single computer mainframe system, or a distributed database system that uses state-of-the-art programming and systems management techniques to fully integrate all data. That data is shared throughout the organization, and if done properly, reaps potentially large benefits for the organization in cost containment, efficiencies, and other benefits both quantifiable and perceived (Bingi, Sharma, & Godla, 1999).

The majority of ERP systems were implemented in the mid-1990’s to the current day in large-scale organizations, and generally were undertaken to overcome the millennium date problem (the Y2K initiative). These were viewed by a majority of enterprises as a panacea for their organizational business process deficiencies. Many were failures for a number of reasons, while some implementations were limited successes. There were many implications to managements of these organizations and having a profound effect on the accounting functions and financial and managerial reporting efforts.

In the post-Enron years, Congress passed the Sarbanes-Oxley (SOX) legislation that also strongly impacted organizations from a reporting and control perspective and audit issues. High-level executives including the CEO and CFO are now held responsible for the financial reporting results plus attesting to a strong and effective internal control system. Much of this relies upon a strong management information system and ERP is generally the vehicle

for this compliance (McCann, T. & Graziano, C., 2003). Concomitant to this effort was the need to develop college graduates with requisite knowledge and skills with ERP to meet wide-ranging organizational needs in accounting, general business management, finance, human resources, production management, marketing, etc.

There are other relevant factors such as accreditation issues for business programs. For example, The Association to Advance Collegiate Schools of Business (AACSB) accreditation process recommends strong MIS program offerings and promotes the cause of ERP systems (Stephens, C. & O'Hara, M., 2001). Approximately 400+ colleges and universities in the United States have this accreditation.

Finally, the American Institute of Certified Public Accountants (AICPA), the American Accounting Association (AAA) and the Institute of Managerial Accountants (IMA) have commissioned studies during the past ten-twenty years to examine the need for education of accountants, both public and private, in advanced concepts of information systems (AICPA, 1998; AAA, 1986; IMA, 2000; Albrecht, W. & Sack, R., 2000).

There is a current movement to accept Extensible Business Reporting Language (XBRL) as a future standard for reporting to the SEC and IRS and various other reporting requirements to industry and government groups. XBRL would be/is a part of the accounting functions found in ERP and stand-alone AIS systems (Cheney, G, 2005; Garbellotto, G. & Hannon, N., 2005; Hannon, N., 2004). Further, the SEC passed Regulation FD in 1999 and it promulgates the fair disclosure of information to all interested parties (Trites, 2004). XBRL as a facilitating tool in both AIS and ERP systems assist accounting professionals meet these requirements and regulation parameters (XBRL International, 2006).

Currently there are approximately 800+ colleges and universities in the United States offering accounting as a major at the undergraduate, masters, and doctoral levels, and the majority are accredited by the AACSB (Hasselback, J., 2006). Accountants have recognized the need to move to stronger information technology based curriculums to foster an understanding of organizations' data generation process and recognize the various benefits accruing to the organizations from reporting and control perspectives.

SAP, the largest of the global ERP software vendors, created a program known as the SAP University Alliance and this program now has in excess of 100 United States colleges and universities among its participants out of the approximate 800 colleges and universities in the U.S. possessing an accounting program (McLanahan, C. & et. al., 2001). These large-scale systems and other programs promoted by Microsoft and various other software organizations, targeted to smaller companies (SME marketplace), have similar audiences and goals. Microsoft has entered this ERP marketplace, albeit at the lower levels with its Dynamics Academic Alliance. Its software products such as Great Plains and Solomon are geared to the SME market with primary differences of scale, features and performance.

The SAP Alliance program was designed to augment the training of ERP skilled graduates at both the undergraduate and graduate levels, promote active academic research initiatives, and to provide a resource database for schools to draw upon for creation and expansion of curriculums. Additionally, many other schools have integrated various elements of ERP, Accounting Information Systems (AIS), and other MIS initiatives for curriculum development and contemporary educational factors for their students within their curriculum pedagogy (Lederer-Antonucci, 1999). This effort is a global endeavor and is not limited to the United States. In fact, there are nearly 500 schools in the SAP University Alliance Program throughout the world (Hawking, P., McCarthy, B., & Stein, A., 2004).

The AACSB has developed some guidelines on this issue and recommends an MIS related course at the master's level (Stephens, C. & O'Hara, M., 2001). The organization accredits accounting programs, but does not yet accredit information technology programs. The Accreditation Board for Engineering and Technology (ABET) has accredited computer science and computer engineering for years. This is an important factor since many accounting/business programs are organizationally integrated by MIS/IT/IS offerings, sometimes within the same departments/organizations (Landry, J., et. al., 2004).

The integration of these systems into the curriculums has been a relatively new phenomenon with most of these ERP programs existing for only the past ten to fifteen years. This has the effect of raising the bar for accountants and their understanding and implementation of such systems, and creating a need for recruiting students with backgrounds and basic levels of knowledge, at a point further than simple EXCEL training.

As the AICPA, the SEC and software industry groups, mature and refine the XML software initiatives and its attendant XBRL reporting opportunities that they are jointly developing and implementing (the current SEC goal is to have all public companies report their results in XBRL format to the EDGAR system), it is conceivable that this effort will expand.

The American Institute of Certified Public Accountants (AICPA) in various reports on accounting education including the landmark 1998 *CPA Vision Project: Focus on the Horizon*, the 1986 American Accounting Association - Bedford Report and the 2000 Accounting Education Series #16 - *Accounting Education: Charting the Course Through a Perilous Future*, supports and recommends this course of action (AICPA, 1998; AAA, 1986; AAA, 2000).

The Institute of Management Accountants (IMA) provided further endorsements in reports issued in 1994, 1996, and 1999 (IMA, 2000). Each of these reports expanded the expectation of accountants understanding and abilities to work in these technological environments.

Finally, the Big 5 (now Big 4) professional accounting firms supported this concept in an industry wide white paper (Big Four Accounting Firms, 2004). Each of the above added support for this concept with professional realization that the rapidly metamorphosing business environment required changes to traditional accounting education.

This approach also supplements the professional accountant's needs for "soft skills" which include critical thinking, team building, and communications, further bridging gaps between academia and the accounting profession. Adoption of ERP systems in the accounting curriculum further exposes students to current technologies, and "best practices", and provides additional emphasis on the "real world". This additional focus element at least slightly minimizes the traditional GAAP and GAAS approaches to accounting education, that has been so widely criticized.

There are other impacts here including: AACSB accreditation, research grants, endowed accounting educational chairs, distinguished professor status, faculty and student recruitment, integrated MIS/IT/IS programs with accounting, possible CPA exam required coverage, Sarbanes-Oxley legislation compliance, faculty recruitment, and faculty research opportunities, to name a few.

SIGNIFICANCE TO ACCOUNTING PROGRAMS

Historically, accounting programs are characterized by a very traditional GAAP/GAAS rule oriented approach to education and the emphasis is on manual accounting systems and attendant internal controls. Most texts used for accounting courses ignore or give only superficial coverage to the existence of AIS and ERP systems (David, J., et. al, 2003), while giving students some spreadsheet analysis exposure.

However the industry/profession has been dramatically impacted during the past twenty years by rapid growth of information technology, not only with ubiquitous local processing power, but the dissemination of information within organizations. Information in the form of financial and operational statistics and metrics, is shared by multiple concurrent users in diverse organizational subunits and has transformed the nature of accounting control. Complicate these issues with Sarbanes-Oxley 404 legislation implementation and we find a profession/academic curriculum, rapidly being tested and asked to respond with qualified and well-trained graduates, entering an increasingly dedicated technological environment.

Educational institutions have historically trailed market realities by as much as ten years. The 150 credit hour CPA requirement and industry/profession commissions and studies notwithstanding, the issue is how well are accounting curriculums responding to these changing market conditions, and aggressively developing programs which generate new graduates at least minimally trained in essential skills (Taylor, V. & Rudnick, M., 2005; Wygal, D & Hartman, B, 2003; David, J. et. al., 2003). If the curriculums are not responding, what appears to be the restraining forces, for example: funding, qualified faculty, facilities, lack of pedagogical tools and text books, research studies, stagnant programs, etc.

LONG-RANGE CONSEQUENCES

It is conceivable that many schools may never implement the integration of ERP/AIS systems within their accounting curriculums. Schools and faculties need an understanding of the issues of ERP/AIS systems and evaluate if they should be a part, major component, or totally missing from the pedagogy and content of the accounting courses.

Schools will certainly encounter some of the suggested barriers to entering this type of program, determined by similar studies examining original adoption of AIS initiatives. Those studies suggested a series of constraints certainly not limited to technological infrastructure issues, funding shortfalls, lack of full-time faculty expertise in

the discipline, philosophical objections to the content, lack of flexibility in current curriculum to “fit” the course or courses, plus any number of other objections or constraints (Groomer, S., & Murthy, U., 1996).

It is hoped that schools will consider adopting this ERP concepts/initiatives into their curriculums as an element of agreement with the Albrecht and Sacks findings and recommendations (Albrecht, W. & Sack, R., 2000). Doing so will validate that accounting curriculum studies were representative of the current business environments. Additionally, it is hoped that schools will use their advisory councils to discuss and consider these ERP/AIS systems for inclusion. Also these accounting programs will perform some environmental studies to determine the benefits to their schools, programs, student recruiting efforts, external funding sources, a new avenue for faculty research, an opportunity to actively cooperate with business organizations for student and program enhancements, and experience the prestige of supporting such an integration to their programs.

RECENT ACCOUNTING LITERATURE

Accounting curriculums are influenced by a number of factors including recommendations by the AICPA for various course and pedagogical changes. NASBA, the National Association of State Boards of Accountancy, highly influences course requirements. For example, their influence has resulted in ethics courses becoming a requirement within the 150-hour course requirements. The AACSB has also influenced the content and pedagogy of the accounting curriculums with recommended courses, assessment methods, etc.

Certainly business and market conditions influence colleges and universities especially in areas where major businesses recruit undergraduate and graduate students, but also in financial support for programs, institutes, and Accounting Advisory Boards participation. This effort is a combination of private/public businesses, the Certified Public Accounting firms, and governmental bodies such as the IRS, SEC, PCAOB, and the influence of legislation such as the Sarbanes Oxley laws (Gabbin, 2002).

The majority of the accounting curriculum research and literature that exists in the past ten years has been devoted to the issues of: 1) the 150-hour accounting curriculums, 2) the impact of Sarbanes Oxley (SOX) on the profession and indirectly the influence on the accounting curriculum, 3) as a result of SOX, the inclusion of specific ethics courses or the infusion of ethical discussion within all course in the accounting curriculum, and 4) the technical accounting issues aspects such as updates into the pedagogy for changes to FASBs, SEC pronouncements and IRS guidelines.

ACCOUNTING EDUCATION BACKGROUND

The earliest activity related to examining accounting curriculum change occurred in 1986 with a study from the American Accounting Association (AAA) related to the future structure of accounting programs and emphasized the concept that learning to learn is a primary objective. It was the first report to recognize deficiencies in the traditional approach to accounting education (American Accounting Association, 1986).

In 1990, researchers suggested that the accounting profession had changed fundamentally and the profession and its curriculum was experiencing continual challenges in a business environment characterized by advances in technology and global expansion. They posed that the basis of accounting education was static, increasingly irrelevant, and could generate a corporate backlash where employers would seek other academic backgrounds rather than accounting (Patton & Williams, 1990). A year later, Deppe et. al. (1991) echoed this observation and recommended that the accounting curriculum needed to be modified to meet the growing needs of the accounting profession. They suggested seven academic areas needing expansion of scope and delivery: 1) communication skills, 2) information systems, 3) decision-making skills, 4) greater understanding of accounting, auditing, and tax, 5) knowledge of the changing business environment, 6) professionalism, and 7) developing leadership skills.

Elliot (1991) furthered this thinking by indicating that if these challenges are met by the accounting curriculums, then accounting will create the critical knowledge workers the economies and business desire. Elliot also concluded that creating knowledge workers also assumes that the pedagogies will adapt to a learning model, that faculties will recognize they must also teach the students how to learn. Mock et. al. also described accounting curriculum development characterized by a systems approach (1991).

Flaherty and Diamond (1996) indicated in the Accounting Education Change Commission (AECC) Position Statement Number One, “accounting programs should prepare students *to become* professional accountants, not to *be* professional accountants”. They also indicated that accounting programs should focus on information development and the communication process. They identified four major elements for accounting programs

probably as elements of a master's level program: 1) decision-making, 2) design and use of information systems, 3) financial information and public reporting, and 4) knowledge of the profession.

Russell, Siegel, & Kulesza, (1999) analyzed the 1999 Practice Analysis, and discussed the knowledge, skills and abilities (KSAs as established in the 1995 study). They identified the most important factors for undergraduate accounting students: 1) communication skills, 2) teamwork, 3) analytical skills, 4) solid understanding of accounting, and 5) understanding of business functionality. Interestingly, almost 50% of the respondents to the study identified that computer skills/technology were the most sought after new skills for their KSAs.

Additionally the 1999 report identified that expected changes included: 1) less reporting of information; more planning and analysis, 2) more computerized information /technology/software, 3) more partnering and consulting in management decisions, 4) more involvements with operations, and 5) more analysis of profitability and performance (Russell, Siegel, & Kulesza, 1999).

In the spring 1995, the AACSB developed a Faculty Leadership Task Force whose charges included: 1) identifying problems, issues, and constraints slowing the faculty members from providing leadership for changes in management education, 2) establishment of alternate strategies and tactics to ameliorate these constraints, 3) identifying specific facilitating factors to overcome the strategy constraints. The Task Force identified the primary difficulty faced by faculty was their failure to stay current with the needs of business and align their individual and collective faculty skills to these changes. The first of four recommendations suggested that accounting departments/curriculums develop closer links to business and technology with the faculty hopefully grasping a stronger and more intuitive understanding of the operating environment and challenges practitioners face daily (AACSB, 1996; Wade, Long, & McGuire, 2006).

AACSB revised their standards in 2003 for accounting accreditation indicating "all accounting academic unit faculty must demonstrate sufficient ongoing professional interaction to support their role in achieving the accounting academic unit's mission and each program's educational objectives....the accounting faculty as a whole maintains a portfolio of relevant practical experience in business and accounting consistent with the accounting academic unit's mission and each program's educational objectives" (Wade, Long, & McGuire, 2006).

Accounting education: charting a new future course

In 1990, the American Accounting Association (AAA) established the Accounting Education Change Commission, a committee of appointed business leaders, with the purpose of examining the accounting education curriculums and provide recommendations for evolution to reflect current realities. They recommended to accounting faculties that accounting majors needed a fundamental understanding of accounting systems and their interrelationship with business processes (Dillon & Kruck, 2004).

As a result of this commission's recommendations, many undergraduate schools of accounting provided one or more of the following responses: 1) significantly increased coverage of information systems in accounting classes, 2) created AIS courses (Cummings, Bennett, Normand, 2001), 3) provided greater graduate course components to accounting systems, and 4) incorporated a significant degree of cross-discipline content, combining accounting and information systems educational departments (Khan, Cianciolo, & Peacock, 2000).

The accounting profession, long a bastion of conservative thought and approach commissioned a report, *Accounting Education: Charting the Course through a Perilous Future* in 2000 authored by Albrecht and Sack (2000). It served to form the background of many subsequent research projects. Essentially supported by major accounting professional associations and employers, this large-scale project was the result, at least in part, of a significant decline (50% over 10 years) in the number of accounting students in U.S. colleges and universities. Additionally, graduated accounting students indicated in large numbers that they would have chosen another major if they would be able to chose their educational directions again (Myers, 2005). Recently this trend has reversed most probably due to a vigorous job market as a result of greater compliance reporting, e.g. SOX.

Albrecht and Sack addressed many complex issues faced by the accounting profession and prospective accounting students, and ultimately the colleges and universities providing the education and training for these future professionals. Specifically, Wilkin, Farmer & Collier (2005) quote the Albrecht and Sack report indicating: (1) accounting academics "*understand information systems and...excel at teaching the oldest and most established information system. We need to move beyond financial accounting and help business and our students to develop the information systems they need to make critical, strategic decisions;*" (2) "*we need to...help businesses and our students to develop new ways of interpreting and using their data,*" which contributes to a "*need to renew our*

commitment to skill development;” and (3) there is a need to shift from encouraging students to memorize towards encouraging critical thinking skills (Wilkin, Farmer & Collier, 2005).

Interestingly and alarmingly to the accounting profession, Albrecht and Sack (2000, p.3) candidly advised “*we cannot save accounting education by continuing to do more of the same.*” Furthermore, they referenced prior studies, in this case specifically the AICPA (1998) *CPA Vision Project: Focus on the Horizon*, performed from various sponsoring organizations and highlighted one particularly fascinating area by noting the accounting profession impact: “*many of the traditional, essential skills of CPAs are being replaced by new technologies that are increasing in number and being rapidly developed*” (AICPA, 1998).

There have been suggestions that accounting curriculums in colleges and universities are integrating technologies and computing concepts into the body of knowledge taught to accounting majors (Bromson, 1994). Although in 1994, the majority of these concepts were related to spreadsheets and databases, some introduction was available to accounting information systems (AIS), the predecessors to ERP systems.

Albrecht and Sack (2000) were judicious in this effort not to promote detailed recommendations to accounting educators, but contrastingly suggested an environment in accounting departments of colleges and universities to assess their curricula and degree offerings, also considering the 150-hour accounting requirement, and create a strategic response to these issues. The response as documented by a number of accounting researchers (Hawking & McCarthy, 2000; Becerra-Fernandez et. al., 2000; Rosemann & Watson, 2002; Watson & Schneider, 1999) who demonstrated how the SAP educational alliance among other such programs, provided the impetus for a new and refreshed approach for accounting students characterized by a spate of hands-on systems experience. Further, employers anecdotally reported favorable learning curve enhancements by their graduate hires having experienced this metamorphosis. Milliron and Lean (2001) reported that this experience and training in accounting information systems should instigate a greater demand for accounting graduates with educational specialization in AIS.

Often, there is a perception that this systems specialization is easily quenched with an ability to be creative and provide solutions using office productivity software, e.g. MS Office Suite. However, the expertise envisioned includes a more complex integrated systems approach including AIS as embedded in ERP with an understanding of DBMS systems and in the future such advances as XBRL reporting initiatives. Further, these goals will not be attainable by one or two dedicated accounting/MIS faculty members, but only via a concentrated team effort within accounting curriculums (Rosemann & Watson, 2002).

Others suggest that accounting is really based on an information system, arguably back to the 15th century with the creation of double entry bookkeeping by Pacioli (Wilkin et. al., 2005). This information system should be the basis for this integrated accounting approach but with the adoption of sophisticated computerized software solutions, namely ERP systems.

Without doubt there is resistance to change (Gabbini, 2002). He notes that academia and its pervasive culture is inherently resistant to change. A mitigating factor may be a close association with alumni CPAs, often through accounting advisory boards, who may be able to shed “real-world” expertise and guidance regarding the need for change.

Accounting programs, i.e. departments, divisions, or accounting schools should embark on a four faceted approach to these issues: 1) Each program should execute an environmental analysis including an assessment of the faculty’s strengths and weaknesses, identify organizations as likely primary employers of future graduates, and identify current and future student profiles, 2) conduct a program analysis and determine if a school needs to offer both undergraduate and graduate programs and should the graduate program be a concentration in accounting or a more generalized MBA, 3) program should assess if its curriculum and attendant courses are relevant, and 4) assessment of the change. AACSB and regional accrediting organizations emphasize the establishment and operation of a systemized approach to assessment (Ainsworth, 2001).

Accounting pedagogy

Historically, accounting education adhered to the behaviorist approach to teaching (similar to many other educational disciplines in business, liberal arts and sciences) where a traditional lecture format existed. Students attended these sessions to be instructed in the various theories and techniques. This was followed by recitation classes based on in-class exercises and regurgitated feedback to demonstrate mastery of the material. These approaches are now being rejected by educational theorists as new constructivist approaches are advocated. In these more contemporary views, the student is actively engaged in making meaning for themselves (Jonassen & Lund, 2000).

Wilkin et. al. (2005) also suggested alternative pedagogy. They first visited the concept of “situated cognition” (Brown et. al., 1989), where the objective is to motivate students with authentic problem solving responsibilities. The students “*negotiate meaning for themselves and with others.*” In 1984, Kolb provided an approach that focused on problem solving and taking actions to “*facilitate adaptation and learning.*” However, their paramount goal was to seek and implement a “student-centered” educational and experience environment where many educational theories overlapped and complemented each other.

A further limiting argument to truly experiential learning is that at the undergraduate level of accounting, students are somewhat hampered by the lack of an experience base in a live business to base their learning and conclusions. Frequently, students have never operated in a business environment, had little computer systems background or experience, had little exposure to business processes, procedures and systems, and do not have a sense or feel for the complexity of these especially as they overlap and integrate. Secondly, a student must have prerequisite understanding of accounting concepts, principles and standards, theories, and procedures taught in undergraduate classes. Collectively, these help formulate the mental and behavioral processes that an accountant utilizes to formulate decisions upon in an informed manner (Wilkin, Farmer & Collier, 2005).

The accounting curriculums have not kept pace with the realities of the world (Tatikonda, 2004). Most curriculums are based on preparing accounting students for the CPA exam, yet the overwhelming majority of students never sit for the exam (Taylor & Rudnick, 2005). Further, the current content of the courses is directed to 1) recording of business events and 2) summarizing recorded events and a lesser degree to converting the data into usable financial information. Each of these activities lends itself dramatically to both outsourcing and elimination by automation. The true value in accounting education is based on 1) turning information into knowledge and 2) making value-added decisions. Each of these has a high value to cost relationship and yet they possess a low emphasis in accounting education.

The role of technology in accounting education

Albrecht and Sack (2000) specifically discussed the role of technology in accounting education in *Charting the Course Through a Perilous Future* with the following observation:

“Accounting is still taught as if information is expensive. Information is inexpensive, and that part of the curriculum devoted to information gathering and recording is wasteful and sends the wrong message to students. Students are not exposed enough to the impact of technology on business and the ways that technology can be leveraged to make business decisions.”

In an attempt to provide both sides of the accounting curriculum argument, Steven Kachelmeier, the director of the accounting Ph.D. program at the University of Texas, provided reasonable and sound arguments to the contrary. He indicates that through research, admittedly somewhat dated, the old model of accounting curriculum based on traditional courses and approaches is still viable. He appears to dismiss the “disconnect” between academia and real world other authors and researchers have elucidated. Further, he makes little to no mention of the role of technology except for the ability to facilitate applied research skills in technical aspects, e.g. FASB pronouncements research (Kachelmeier, 2002).

Barry Melancon, the AICPA President and CEO spoke before a group of business professionals and media in New York in 2002, and provided details of “a new accounting culture”. He identified a number of programs in the post SOX era and these included items such as a new fraud research and discovery program at University of Texas, the need for stronger standards, improved financial reporting and a role in promoting strong corporate governance and internal control systems. Virtually none of these addressed any changes in accounting curriculums and only obliquely addressed technology in comments about internal control and fraud systems. Essentially the focus was on traditional auditing and fraud controls (Melancon, 2002).

College and University Alliance/Cooperative Programs

A number of the software companies offering ERP solutions at the mainframe or SME level have created University alliance or cooperative programs with intention of linking higher education institutions with contemporary software (Hensel & Alexander, 2000). In this alliance, the schools usually receive some level of the software applications or the underlying data base management systems (DBMS) for adoption into the curriculum pedagogy. This software is either free or acquired on some highly discounted basis.

These schools then join the Alliance specifically and may attend annual meetings or training sessions, participate in conferences, utilize or add to existing database of cases and problems for inclusion in specific courses, and obviously train students at various levels related to screens, concepts etc. This generates a potentially valuable commodity, graduates at various degree levels that have a familiarity or expertise with the software, and can be hired with an already accelerated learning curve.

Obstacles to implementing academic alliance programs

There are a number of documented obstacles to engaging in curriculum integration with an academic alliance program offered by an ERP software vendor either at the mainframe or SME level. These obstacles are related to both the student and faculty, and indirectly the college or university.

From the college or university perspective, the faculty face a daunting task, identifying technical expertise needed either in existing faculty or new hires. This expertise is the combination of accounting and business information systems experience and expertise. Other than the most experienced systems faculty, instructors new to the process encounter a steep learning curve. Unfortunately, this learning curve is not conducive to traditional career advancement, where the professor typically engages in not only teaching requirements, but also the requirements of publishing, research and presentations. Subsequently, only a minimum of faculty may be interested due to the perceived and/or real financial and career costs of engaging in such activity. Conceivably the most junior of faculty members, i.e. the new hires, possibly specifically for these course purposes, are the most appropriate to utilize. Paradoxically, their deep involvement may preclude other essential activities necessary for survival and tenure at colleges and universities (David et. al., 2003; Bromson et. al., 1994).

Unfortunately, there is little expertise at most institutions of accounting professors with information systems and technology backgrounds. In addition, there appear to be relatively few faculty prospects in current Ph.D. programs pursuing this alternative, most choosing to address the traditional accounting education approach. Consequently, resources are scarce and it becomes critical to utilize these resources most effectively to avoid failure. Large programs (>10 full time accounting faculty) offered AIS in 84% of the curriculums, medium programs (6-10 faculty) saw AIS offered in 67% of the programs, and small programs (1-5) reported AIS in 44% of the programs (O'Donnell & Moore, 2005). This study concluded that a significant number of graduating accounting students do not possess competencies and knowledge in IT control functions.

David et. al. suggest that the best-case scenario would find "technology-savvy" faculty working with other non or less "technology savvy" faculty to develop course materials and programs for use in the curriculums. Even with increased financial support to colleges and universities from software alliance sponsors and direct financial inducements for their curriculums, many schools have still found the task formidable if not impossible.

There are efforts to share resources and course materials among the alliance members, but this still leaves countless other institutions to "go-it-alone". An additional impediment is that there is virtually no integration of technology other than Excel spreadsheets, within most accounting texts. Hence, the accounting faculty and curriculums face a degree of inertia trying to overcome the problems as established by Albrecht and Sack. Various institutions such as Michigan State, Brigham Young, and Arizona State universities have attempted to provide in-house solutions and funding for retraining of accounting faculty to better understand and integrate the technology. Essentially, the goal of these and similar institutions is to significantly accelerate the pace of technology innovation in accounting curriculums (David et. al., 2003).

Overcoming pedagogical obstacles

David et.al. suggest a philosophy of action that would effectively penetrate accounting programs, enhance and accelerate technological innovation within accounting curriculums, and develop shareable educational products and materials. Specifically, they enumerate the following precepts: 1) contemporary businesses have dramatically changing and diverse supply and value chains; introduce students to these evolving business models, 2) specifically addressing the accounting core courses, emphasize the critical nature of strategic ERP products and modules and their interrelationships to various aspects of accounting (White, 2005), 3) create a clear and focused emphasis on data-driven decision making (Siegel, 1999), 4) maintain the current emphasis on core accounting courses and their attendant competencies, however, supplement these with technology, and 5) create products and materials for the courses that would allow minimally technology competent faculty to achieve effective and laudable student satisfaction (David, et. al., 2003).

The curriculum deficiencies addressed by a survey conducted by Hastings, Reckers and Solomon (2003) found that 50+ businesses indicated the topics of emphasis should include: ERP systems, business process analysis, e-business concepts and financial analysis. Specifically, ERP's inclusion was to demonstrate how these systems become value-added tools by promoting superior strategic business decision-making (Siegel, 1999). Further, they support cost reductions through automation of data entry and data manipulation.

Wygall and Hartman (2003) discuss the infusion of ERP systems in the accounting curriculum and specifically address SAP's Advancing Curriculum Change in Technology (ACCT) as a change agent for schools to consider. Specifically ACCT is an industry/academic partnership whose objective is to advance the status of information technology and create essential skill-sets for accounting students and professionals.

Essentially, the ACCT program promotes the integration of technology across the accounting curriculum using a progression of interactive CDs. These are tied to educational websites and cover a multiple course sequence. Ultimately, the faculty teaching these courses should be able to demonstrate methods to leverage technology for decision-making purposes (Siegel, 1999) without the need for data entry or manipulation. This is accomplished using ancillary materials to augment textbooks and it fosters understanding of accounting principles and procedures while utilizing ERP applications (Wygall & Hartman, 2003).

Implications of ERP planning and implementation

There have been a few publications addressing the planning and implementation activities of ERP within an accounting curriculum. Hackworth (2000) discussed the SAP University Alliance Program within a curriculum setting. Lau, Rosacker and Tracy (2000) also discussed the details of choosing and implementing ERP within the business program, as an effort to discuss the interdisciplinary need for planning and implementation. McLanahan et. al. (2001) provided details regarding the entire process of making an application to SAP through implementation and training of faculty and staff. It is somewhat dated but provides a reasonable structured approach to alliance membership and continual expansion. This paper discussed in detail the pitfalls and dedication necessary to support and maintain such an effort, particularly in a relatively small school with restricted resources and faculty challenged by competing responsibilities.

Accounting Information Systems course analysis

Accounting Information Systems (AIS) courses have been part of accounting curriculums for at least ten-fifteen years. These courses cover a wide range of topical areas and likewise cover a range of students. Groomer and Murthy (1996) performed the most extensive survey of these courses and delineated between undergraduate and graduate level courses.

The researchers also conducted a survey of the faculty teaching these courses and established a number of parameters to describe their backgrounds, qualifications, and ability to teach and integrate these courses. They discovered that at the time of the survey in 1996, more than half of the faculties were assistant professors, i.e. not long-time tenured faculty. Additionally, the survey indicated that the vast majority of these instructors were self-taught, without the ability to attend training sessions and without any software developer university alliance programs to support their efforts. Less than 10% of the faculty surveyed had doctoral degrees in information systems. Almost half of the respondents indicated that they had information systems experience in industry. A full third indicated that they had CPA firm information systems experience. This study was significant because it was the most detailed and extensive review of the state of AIS instruction in the United States. There have been some follow-up surveys done on a far less extensive basis. None however have addressed the nature and extent of ERP adoption in United States accounting programs.

SUMMARY

Researchers, some faculty members, the CPA profession and accountants in general agree that little has been accomplished in the past two decades relative to a overhaul of accounting curriculums as they relate information systems. Research indicates and delineates the steps that can be taken to modify course offerings to better prepare accounting students for postgraduate employment. Unfortunately, programs have not done so. Some of these obstacles are real, i.e. funding deficiencies and lack of trained faculty. Other obstacles can simply be traced to

inertia on traditionalist faculty and programs. Relevancy will certainly always be a topic of debate until accounting programs become proactive in their offerings and pedagogical approach.

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INAPPROPRIATE REVENUE RECOGNITION AND THE MISSTATEMENT OF REPORTED EARNINGS

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ABSTRACT

The accounting profession has invested a significant amount of time and effort in attempts to define the requisites for revenue recognition. Despite these efforts, accountants have found that some companies still misstate reported earnings by failing to record revenue in accordance with existing revenue recognition criteria. Many of these misstatements deal with inappropriate accounting for routine sales transactions, and the author believes a close examination of these irregularities may provide the accounting profession with insights that could lead to improved accounting and auditing standards. This paper investigates the misuse of the bill and hold method of revenue recognition. The investigation was conducted by reviewing the Securities and Exchange Commission's Accounting and Auditing Enforcement Releases (AAERs) issued since 2000. The paper reviews existing revenue recognition criteria for bill and hold transactions and describes the major problem areas identified by the SEC.

INTRODUCTION

Fraudulent financial reporting adversely impacts public confidence in capital markets and can devastate those firms subject to the fraud. One of the primary means by which this type of fraud is perpetrated is through the overstatement of revenues. The Committee of Sponsoring Organizations of the Treadway Commission (COSO) issued a report in March of 1999 entitled *Fraudulent Financial Reporting: 1987-1997 An Analysis of U. S. Public Companies*. The Committee found that over half of the frauds in the study involved overstating revenues. Similarly, the study *Analysis of SEC Accounting and Auditing Enforcement Releases*, published in 2000 by the Panel on Audit Effectiveness, found that around 70% of the cases they studied involved the overstatement of revenues.

Given the past proclivity for firms to misstate revenues and the continual pressure on managers to achieve revenue forecasts, it is important for accountants and auditors to both: (1) agree on a generally accepted definition of what constitutes revenue and, (2) have a thorough understanding of the requisites for revenue recognition. Perhaps a better understanding of past failures and their causes will reduce future occurrences of revenue-related fraud. This paper provides a review of existing revenue recognition criteria, with specific emphasis on bill and hold sales, a particularly troublesome type of revenue transaction. Next, the paper reports on the results of the author's study of recent revenue misstatements in the area of bill and hold transactions. This study was conducted by reviewing revenue-related Accounting and Auditing Enforcement Releases (AAERs) issued by the Securities and Exchange Commission (SEC) since 2000, and extracting those dealing with bill and hold sales. These were then examined to determine the specific reason(s) revenue recognition was deemed inappropriate. The paper concludes with a summary of the research findings and provides recommendations for reducing future misstatements in reported earnings.

REVENUE RECOGNITION CRITERIA

Currently, comprehensive guidance on revenue recognition does not exist in the United States. This lack of a general standard on revenue recognition has fostered some inconsistencies between the broad theoretical foundation for accounting set forth in the Financial Accounting Standards Board's (FASB) *Concept Statements* and the detailed guidance provided in the authoritative literature of a variety of other standard-setting bodies. In hopes of eliminating, or at least narrowing, this gap between its conceptual guidance and other authoritative literature, the FASB, in 2002, adopted the Revenue Recognition Project. Working jointly with the International Accounting Standards Board (IASB), the Project's goal is to develop coherent conceptual guidance for revenue recognition and issue a comprehensive statement on revenue recognition based on those concepts. The FASB staff hopes to publish an initial due process document (preliminary views/discussion paper) by the third quarter of 2008 and an exposure document by the second half of 2009.

SEC Staff Accounting Bulletin No. 101

Given the lack of comprehensive guidance on revenue recognition, what criteria does the SEC look to for guidance in evaluating purported revenue transactions? The SEC provided an answer to that question when they issued Staff Accounting Bulletin (SAB) No. 101, *Revenue Recognition in Financial Statements*, in 1999, which was subsequently updated in 2003 with the issuance of SAB No. 104, *Revenue Recognition, Corrected Copy*. In these Bulletins the SEC staff stated that if a transaction is within the scope of specific authoritative literature that provides revenue recognition guidance, that literature should be applied. Lacking such authoritative literature addressing a specific arrangement or industry, the staff stated they will consider existing authoritative accounting standards as well as the broad revenue recognition criteria specified in the FASB's conceptual framework. This position is consistent with the staff's earlier position set forth in AAER No. 846, issued in 1996, stating that financial statements contained in Commission filings must comply with Regulation S-X and, therefore, must conform to Generally Accepted Accounting Principles (GAAP). What, then, is GAAP?

In specifying what it considers to be GAAP, the FASB issued Statement of Financial Accounting Concepts No. 5 (CON 5), entitled *Recognition and Measurement in Financial Statements of Business Enterprises*. It concludes that revenue should be recognized when it is both realized (or realizable) and earned. Paragraph 80 of CON 5 states that revenue is realizable when a product is "...exchanged for cash or claims to cash" and revenue is earned "when the entity has substantially accomplished what it must do to be entitled to the benefits represented by the revenues." Paragraph 84a states that revenues from manufacturing and selling activities are commonly recognized at the time of sale, usually meaning delivery.

AICPA Statement of Position 97-2

While SAB No. 101 reaffirmed the staff's support for the criteria contained in CON 5, it also more closely delineated the necessary requirements for determining if the criteria had been met. The staff went beyond CON 5 and chose to incorporate the four basic criteria for revenue recognition contained in the American Institute of Certified Public Accountant's (AICPA) Statement of Position 97-2, *Software Revenue Recognition*. The staff stated its belief that revenue is generally realized or realizable and earned when all of the following criteria are met:

Persuasive evidence of an arrangement exists;

Delivery has occurred or services have been rendered;

The seller's price to the buyer is fixed and determinable; and

Collectability is reasonably assured.

The SEC staff stated that the issuance of SAB No. 101 does not change any of the accounting profession's existing rules on revenue recognition but does explain how the staff applies those rules, by analogy, to certain transactions that the existing rules do not specifically address. One of the Bulletin's examples of the staff's application of existing rules to specific revenue recognition issues is in the area of bill and hold transactions. The staff's revenue recognition criteria for bill and hold transactions are presented in the next section.

REVENUE REQUISITES FOR BILL AND HOLD TRANSACTIONS

As noted earlier, in the normal situation, revenue is recognized when the products are completed and delivered to the customer. However, in the case of a bill and hold transaction, the customer commits to purchasing the product but the seller retains possession until the buyer requests shipment. While this type of sales arrangement is not a violation of GAAP, past auditor experiences indicate that the risk is high that the seller may be attempting to manipulate revenue in such situations because no shipment has occurred. Consequently, the auditor should be skeptical about accepting such revenue as legitimate and, accordingly, should ascertain how and why a company

maintains that a bill and hold sale is justified. Furthermore, the SEC has concluded that GAAP does not allow bill and hold transactions without the purchaser having a compelling business purpose for requesting delay in delivery. In attempting to judge the propriety of purported bill and hold transactions auditors, and the seller's accountants, may seek guidance by referring to SAB No. 101. The guidance provided by the SEC staff in SAB No. 101 is based, almost entirely, on revenue recognition criteria set forth previously in AAER No. 108.

On August 5, 1986, the SEC issued AAER No. 108. In that release the SEC set forth a number of conditions a purported bill and hold transaction must meet before it can be considered for revenue recognition. These conditions are as follows:

The risks of ownership must have passed to the buyer;

The customer must have made a fixed commitment to purchase the goods, preferably reflected in a written document;

The buyer, not the seller, must request that the transaction be on a bill and hold basis. The buyer must have a substantial business purpose for ordering the goods on a bill and hold basis;

There must be a fixed schedule for delivery of the goods. The date for delivery must be reasonable and must be consistent with the buyer's business purpose (e.g., storage periods are customary in the industry);

The seller must not have retained any specific performance obligations such that the earnings process is not complete;

The ordered goods must have been segregated from the seller's inventory and not be subject to being used to fill other orders; and

The equipment must be complete and ready for shipment.

The SEC went on to say that while these conceptual criteria are important, they are not a check list and a transaction meeting all of them might still fail to meet the requirements for revenue recognition. The Commission also believes those responsible for the financial statements should consider these six additional factors set forth in AAER No.108.

The date by which the seller expects payment and whether it has modified its normal billing and credit terms for this buyer;

The seller's past experiences with, and pattern of, bill and hold transactions;

Whether the buyer has the expected risk of loss in the event of a decline in the market value of the goods;

Whether the seller's custodial risks are insurable and insured;

Whether Accounting Principles Board Opinion No. 21, pertaining to the need for discounting the related receivable, is applicable; and

Whether extended procedures are necessary in order to assure that there are no exceptions to the buyer's commitment to accept and pay for the goods sold, i.e., that the business reasons for the bill and hold have not introduced a contingency to the buyer's commitment.

The next section of the paper presents the results of the investigation into purported bill and hold sales and the reasons why revenue recognition was deemed to be inappropriate. As noted earlier, this investigation was conducted by reviewing Accounting and Auditing Enforcement Releases issued by the SEC since 2000.

MISUSE OF BILL AND HOLD TRANSACTIONS

The review of the SEC's AAERs uncovered a total ten AAERs citing the inappropriate recognition of revenue from purported bill and hold transactions. While an in-depth reporting and analysis of these AAERs is beyond the scope of this paper, this section does list them and relates why the SEC's staff found revenue recognition to be inappropriate.

AAER No. 1243

AAER No. 1243, issued in March, 2000, concluded that Digital Lighthouse, Inc. ("Digital") improperly recorded revenues of \$1.5 million on 40 of 60 units contained in a June 30, 1997 order. This \$1.5 million represented around 28% of the company's total sales for that quarter. Although Digital treated the entire sale as a bill and hold transaction, the SEC found that the sales letter agreement failed to meet revenue recognition requirements for the following reasons:

Risk of ownership had not passed to the customer;

Digital had structured the transaction as bill and hold, not the customer;

The units were not complete and ready for shipment at the time revenue was recognized;

The sales letter contained specific performance obligations on the part of Digital;

There was no fixed delivery schedule; and

Payment for the shipment was not required until five months after the sale was recorded as revenue.

The Commission also found that on September 30, 1997, the last day of the third quarter, Digital improperly recorded \$3.475 million in revenue from another purported bill and hold sale. This sale constituted approximately 42% of Digital's third quarter revenues. This second "bill and hold" transaction was structured much in the same way as the first one and failed to satisfy revenue recognition criteria for the same reasons.

AAER No. 1393

This Release, issued on May 15, 2001, addresses a variety of improper earnings management techniques employed by the management of Sunbeam Corporation from the last quarter of 1996 through June of 1998. Among the fraudulent accounting practices employed by Sunbeam was the improper recording of bill and hold sales. This practice began in the second quarter of 1997 and was repeated in the first quarter of 1998. In these purported bill and hold transactions Sunbeam offered incentives to customers to persuade them write purchase orders before they would have otherwise. The Commission concluded that these inducements to purchase meant that it was really the seller, Sunbeam, not the purchaser, that had requested the bill and hold arrangement. Also, because Sunbeam typically paid the cost of storage, shipment and insurance of the product, the risks of ownership were deemed not to have passed to the buyer, one critical criterion for the proper recognition of a bill and hold transaction. The "bill and hold" sale recorded in 1997 contributed to the approximate \$62 million in fraudulent income reported in 1997. To avoid reporting a sales decline in the first quarter of 1998, Sunbeam again misused bill and hold transactions. In this instance they recorded \$35 million in fictitious sales.

AAER No. 1422

Release No. 1422, issued in July of 2001, deals with numerous fraudulent activities that materially increased annual and quarterly revenue and net income at American Bank Note Holographics, Inc. (ABNH). These activities led to materially misleading financial statements for fiscal years 1996 and 1997 as well as for all of the quarterly statements for 1997 and the first three quarters of 1998. The AAER reports that in mid to late January, 1997, the management at ABNH realized that the company had failed to meet its fourth quarter budget and forecasts for

revenue. Consequently, around January 30, 1997, after the 1996 fiscal books had been closed, ABNH improperly accrued revenue for two bill and hold transactions. It was determined that ABNH and the two customers, one with a recorded sale of \$231,00 and the other for \$404,250, had not entered into a sales contract before December 31, 1996. On top of that, the transactions still would not have qualified as bill and hold sales because ABNH had requested the bill and hold basis and, furthermore had failed to segregate the holograms sold to these customers from its general inventory.

As further evidence of its intent to commit fraud, ABNH provided outside auditors with signed audit confirmations from the two bill and hold customers that falsely attested that the transactions had been entered into as of December 29, 1996. The largest improperly booked transaction recorded by ABNH in the next year (fiscal year 1997), was a bill and hold transaction of approximately \$6million, which should have been recorded as revenue in 1998. The \$6 million was deemed not to be revenue in 1997 because the related holograms were not completed until 1998.

AAER No. 1456

Issued in September of 2001, this Release deals with a Denver, Colorado company named Vari-L. For the period 1996 through the first quarter of 2000, Vari-L showed consistently increasing revenue and earnings. This pattern of improving performance, however, was based on financial reporting fraud, not actual company operations. It was a multitude of accounting misstatements that allowed Vari-L to report cumulative pretax income of \$17.1 million instead of a cumulative pretax loss of \$14.4 million from 1996 through the first quarter of 2000. Among the revenue recognition deficiencies Vari-L was cited for was the improper use of bill and hold sales. One major reason for disallowing revenue recognition on these “bill and hold” transactions was management’s misrepresentation that the customers had requested these arrangements.

AAER No. 1637

FLIR Systems, Inc. was the focus of AAER No. 1637, issued in September, 2002. The Portland, Oregon based corporation was found to have engaged in improper revenue recognition practices throughout 1998 and 1999 in order to meet internal earnings projections. A significant portion of FLIR’s misstatements was due to its improperly recognizing \$6,228,000 as revenue in 1998 and 1999, based on non-binding letters of intent or other non-binding documents, in violation of bill and hold requirements. FLIR used these non-binding letters of intent as a basis for recording sales when, in fact, the letters simply evidenced the customers’ intent to purchase at some point in the future. Thus, these letters did not represent binding commitments to purchase and, therefore, FLIR should not have recognized revenue.

AAER No. 1699

Release No. 1699, issued in January of 2003, involves Anika Therapeutics, Inc.’s improper recognition of approximately \$1.5 million in revenue from sales of its product, Orthovisc, to a distributor in 1998 and 1999. In April and July, 1998, Anika received orders from the Distributor for 15,000 units of Orthovisc. In early September of 1998, Anika recommended to the Distributor that Anika invoice for the 15,000 unit order under Anika’s normal payment terms, but that Anika would hold the units as unlabeled, unpackaged, filled syringes, until the Distributor desired shipment. On September 24, 1998, Anika invoiced the Distributor for \$545,600 and received payment in November of 1998. However, the order was not shipped to the Distributor until March 1999. Anika treated this arrangement as a bill and hold sale and recorded revenue for this sale on its books for the quarter ended September 30, 1998. The \$545,650 was subsequently reported as revenue in its third quarter 10-Q and its 1998 Form 10-K.

The Commission found that the transaction did not satisfy all of the criteria set forth for bill and hold transactions and should not have been recorded as revenue in 1998. More specifically, the Commission found the arrangement failed to meet the following criteria necessary for revenue recognition:

The full risk of ownership had not yet passed to the buyer because Anika agreed that it would bear responsibility for any loss of product during packaging, a process that the Distributor inventory had yet to undergo;



At the time of revenue recognition, Anika and the Distributor had not agreed to a fixed schedule for delivery of the goods;

Anika retained specific performance obligations such that the earnings process was not complete. The labeling, packaging and sterilization process that the Orthovisc still needed to undergo consisted of approximately 20% of the total manufacturing cost of the product;

Anika failed to properly segregate the Distributor's Orthovisc units from other stored units of the product;

The product was not complete and ready for shipment at the time Anika recognized the revenue.

The improper recognition of revenue from dealings with this customer continued into 1999. The Distributor bought an additional 41,100 units of Orthovisc. These additional units were divided into two invoices, one dated June 30, 1999, paid for in August, and the other on September 30, 1999, paid for in November, 1999. The Distributor even went so far as to request these two purchases be treated as bill and hold transactions. Anika, in its June 30, 1999 10-Q prematurely recognized approximately \$365,000 in revenue from the June invoice and, in its third quarter filing, prematurely recognized over \$633,000 from the September purported bill and hold sale. The Commission found that, even though the Distributor had requested the bill and hold arrangement, the sale did not satisfy all the bill and hold revenue recognition criteria. Similar to the 1998 transaction, the Commission found that the risk of ownership had not passed to the customer; a fixed delivery schedule had not been agreed to; and the manufacturing process was not complete.

AAER No. 1911

Issued in November, 2003, this Release involves misleading disclosures and false financial information reported by Gateway, Inc. in order to meet or exceed Wall Street analysts' expectations in 2000. Gateway's improper accounting actions inflated its reported revenues by 6.5% and its pre-tax income by as much as 30% during the third quarter of 2000. Among the various schemes employed to accelerate revenue to bridge the gap between actual performance and analysts' expectations was an arrangement Gateway solicited with a rent-to-own consumer leasing company. Gateway persuaded the leasing company to issue a \$16.5 million purchase order on September 21, 2000. The leasing company was to be billed in September 30, 2000 and take possession of the PCs by October 31, 2000. The parties agreed that the leasing company would not take the product until the fourth quarter, after it had issued subsequent purchase orders from individual stores, as had been its practice in the past. They also agreed that the leasing company would be invoiced and pay on the subsequent store purchase orders, not on the \$16.5 million company-wide purchase order. When the \$16.5 million purchase order was issued it provided that the equipment would be shipped to "local warehousing for subsequent distribution." The shipping terms were FOB destination. Gateway then "shipped" the equipment by segregating it in third party warehouses located next to its manufacturing facilities. The leasing company never had any contact with the warehouses.

The Commission found that Gateway improperly recognized revenue of \$16.5 million on the third quarter purported sale. The Commission determined that the "sale" failed to satisfy three criteria for revenue recognition. One was the fact that the leasing company lacked any substantial business purpose for ordering on a bill and hold basis. Secondly, Gateway had specific performance obligations regarding the purchase order that it did not discharge during the third quarter. Finally, the leasing company did not request the transaction be on a bill and hold basis and did not pay the cost to warehouse.

AAER No. 2460

In 2006, AAER No. 2460 was issued in the matter of Endocare, Inc. It describes the reporting of false financial information and other misleading disclosures caused by an Endocare regional sales manager in reports filed with the Commission for fiscal years 2001 and 2002. Throughout this period Endocare engaged in improper revenue recognition practices and improperly understated expenses to inflate earnings. Revenue was overstated by at least 16% for fiscal year 2001, by 17% in the first quarter of 2002, and by 33% for the second quarter of 2002. Among the improper practices cited were purported bill and hold transactions in which the product was shipped to

an Endocare-controlled storage facility until the equipment could be resold or until it generated sufficient revenues to support payment.

AAER No. 2740

AAER No. 2740 was issued on October 15, 2007. The Commission's complaint against Nortel Networks Limited (Nortel), a Canadian company, charges that from late 2000 through January 2001, Nortel fraudulently accelerated revenue into 2000 to meet its publicly-announced revenue targets for the fourth quarter of 2000 and for that year. The complaint alleged that Nortel inflated their revenues by approximately \$1.4 billion. The SEC concluded that improper bill and hold transactions were at the center of the scheme.

AAER No. 2801

This Release, issued in March of 2008, charged Canadian pharmaceutical company Biovail Corporation with engaging in a number of fraudulent accounting schemes and making a series of misstatements to analysts and investors. The complaint alleges that three accounting schemes affected reported earnings for periods from 2001 to 2003, and that each of these schemes had a material effect on Biovail's financial statements for the relevant quarters and years. In one of these schemes, Biovail is accused of concocting fictitious bill and hold transactions to record approximately \$8 million in revenue in the second quarter of 2003.

CONCLUSIONS

The review of AAERs conducted in this research indicates that inappropriate revenue recognition and the misstatement of financial statements continues to be a problem for the accounting profession. It is likely that most of these revenue misstatements are fraudulent in nature and result from management's perceived need to meet one or more sets of internal or external earnings expectations. At least that appeared to be the primary motivating factor in the bill and hold AAERs examined for this study. It seems somewhat surprising to find companies misusing bill and hold sales, because it is this very type of revenue transaction that should be viewed with a high degree of skepticism by accountants and auditors alike.

While the FASB has yet to complete its Revenue Recognition Project and produce a general standard on revenue recognition, there is no lack of revenue guidance for bill and hold transactions. The SEC has set forth, in SAB 101, a fairly detailed number of conditions a bill and hold transaction must meet before it can be considered for revenue. Thus, both accountants and auditors may refer to an "authoritative" list or set of specific bill and hold conditions to guide them in determining the appropriateness of revenue recognition. Remember, however, that the SEC also said that a transaction might meet all of these conditions and still fail to meet the requirements for revenue. On the other hand, if a transaction does fail to meet one or more of the "must" conditions set forth in SAB 101, obviously fails the revenue test. Therefore, accountants and auditors should make certain all of the stated conditions are met as a precondition for evaluating a bill and hold transaction for revenue recognition. Given that the amount of the bill and hold sale is material; this would include direct confirmation with the customer to determine if all of the relevant SAB 101 conditions have been met.

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A COMPARISON OF TWO STANDARDS OF QUALITY FOR EDUCATION: AACSB-INTERNATIONAL AND ISO9001

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ABSTRACT

ISO 9000:2000 is the European standard for quality that has been expanded worldwide. It is applicable to all organizations including educational institutions. Within the United States there are 6 regional accrediting organizations that evaluate universities and grant certifications. The Council for Higher Education Accreditation ([CHEA](#)) is a private organization that coordinates the regional accrediting organizations, as well as the accrediting organizations in specific academic subjects. In addition to these accreditation bodies, there are also accrediting organizations for academic degrees in some specific subject. A sample of these specialized certificates is AACSB (The Association to Advance Collegiate Schools of Business) for business schools. In this paper, ISO 9001 standard is compared to AACSB. The specific questions are: Do these two standards require different structures? If a university is ISO 9001 certified, can it be qualified for AACSB Accreditation? Can we replace ISO 9001 for AACSB?

INTRODUCTION

ISO 9001:2000

In the late 1970s and early 1980s, Europe found itself in a position similar to that of the United States. European producers of products were finding the Japanese to be formidable competitors and realized they needed to change. Because of radical differences in infrastructure, politics, and business practices, it is easy to over generalize. ISO 9000:2000 is the European standard for quality that has been expanded worldwide as a standard. Two types of quality recognition are widely used in Europe: the European Quality Award (EQA) and ISO 9000:2000 certification. The following eight principles provide the foundation for ISO 9000:2000 [1]:

Principle 1: Customer focus: Organizations depend on their customers and should, therefore, understand current and future customer needs, meet customer requirements, and strive to exceed their expectations

Principle 2: Leadership: Leaders establish unity of purpose and direction. They should create and maintain an internal environment in which people become fully involved in achieving the organization's objectives

Principle 3: Involvement of people: People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit

Principles 4: Process Approach: A desired result is achieved more efficiently when activities and related resources are managed as a process

Principle 5: System approach to management: Identifying, understanding, and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives

Principle 6: Continual Improvement: Continual improvement of the organization's overall performance should be a permanent objective of the organization

Principle 7: Factual Approach to decision-making: Effective decisions are based on the analysis of data and information

Principle 8: Mutually beneficial supplier relationships: An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

ISO-9000:2000 has six requirements and three standards. The three standards are ISO 9000:2000, ISO 9001:2000 and ISO 9004:2000. ISO 9001:2000 consists of five clauses, which include:

Clause 4: Quality Management System

Clause 5: Management System

Clause 6: Resource Management

Clause 7: Product Realization

Clause 8: Measurement, analysis, and improvement

AACSB International (The Association to Advance Collegiate Schools of Business)

AACSB promotes continuous quality improvement in management education. The Association was founded in 1916, and the standards for business administration were first set in 1919. In 1980, AACSB adopted additional standards for undergraduate and graduate degree programs in accountancy to address the special needs of the profession. A collegiate institution offering degrees in business administration or accounting may volunteer for AACSB accreditation review.

AACSB is recognized by the Council for Higher Education Accreditation (CHEA). According to AACSB, a high quality degree program is created when students interact with a cadre of faculty in a systematic program supported by an institution. Accreditation observes, recognizes, and sometimes motivates educational quality created within the institution.

AACSB standard is divided into several standards [2]:

Standard one: Institutional Mission and Goals, Planning and Effectiveness

Standard two: Educational Program and Its Effectiveness

Standard three: Students

Standard four: Faculty

Standard five: Library and Information Resources

Standard six: Governance and Administration

Standard seven: Finance

Standard eight: Physical Resources

Standard nine: Institutional Integrity

COMPARING THE TWO STANDARDS

There are a lot of similarities between the two standards and of course some differences.

Similarities

Both standards require the organization to publish a mission statement or its equivalent that provides direction for making decisions. The mission statement derives from a process that includes the viewpoints of various stakeholders. It is also required that the organization periodically reviews and revises the mission statement as appropriate. The review process involves appropriate stakeholders.

ISO 9001:2000 requires that the organization establish, document, implement, and maintain a quality management system and continually improve its effectiveness in accordance with the requirements of the standard. AACSB requires the same type of system; however, it is not called a quality management system.

Both standards require the organization to provide resources appropriate to, and sufficient for, achieving its mission and action items. AACSB defines resources in the framework of financial, staff, and faculty resources while ISO 9001:2000, talks about needed resources in general. Clause 6 of ISO 9001:2000 is all related to resource management.

ISO 9001:2000 under the requirement of clause 4.2 requires the organizations to have documentation of their systems including quality policy and quality objectives, a quality manual, documented procedures, documents to ensure effective planning, operation and control of processes, and records required by international standard. AACSB also requires documentation of the systems almost the same way as ISO 9001. Under faculty management and support AACSB states that: The school has well-documented and communicated processes in place to manage and support faculty members over the progression of their careers consistent with the school's mission. These include: determining appropriate teaching assignments, intellectual expectations, and service workloads, providing staff and other mechanisms to support faculty in meeting the expectations the school holds for them on all mission-related activities, providing orientation, guidance and mentoring, undertaking formal periodic review, promotion, and reward processes, and maintaining overall plans for faculty resources. There are additional clauses related to items such as curricula. The school uses well-documented, systematic processes to develop, monitor, evaluate, revise the substance and delivery of the curricula of degree programs, and to assess the impact of the curricula on

learning. Curriculum management includes inputs from all appropriate constituencies which may include faculty, staff, administrators, students, faculty from non-business disciplines, alumni, and the business community served by the school.

ISO 9001 puts a burden of management for managing and controlling the system under item 5 of the standard. This includes customer requirement, resource allocation, defining authorities and responsibilities, and review of the management system. AACSB implements the same idea by expressing the following under a clause related to Aggregate Faculty and Staff Educational Responsibility. The business school's faculty in aggregate, its faculty subunits, and individual faculty, administrators, and staff share responsibility to: ensure that adequate time is devoted to learning activities for all faculty members and students, ensure adequate student-faculty contact across the learning experiences, set high expectations for academic achievement and provide leadership toward those expectations, evaluate instructional effectiveness and overall student achievement, continuously improve instructional programs, and innovate in instructional processes.

As part of clause 6.2, ISO 9001:2000 requires that workers will be provided necessary education, training, skills and experience. This is true for AACSB as it defines criteria for faculty and administrators.

ISO 9001:2000 provides several clauses related to suppliers and incoming goods to ensure that inputs to the system follow written criteria and specifications and the organization has enough procedures in place to control the conformity of the incoming goods and services [3]. In the case of academia this translates into the admission policy and selection of faculty and staff and other resources for the university. AACSB requires that the policies for admission to business degree programs offered by the school be clear and consistent with the school's mission. It also requires that the faculty has, and maintains, intellectual qualifications and current expertise to accomplish the mission and assure that this occurs; the school has a clearly defined process to evaluate individual faculty member's contributions to the school's mission.

One of very important clauses of ISO 9001:2000 relates to Product Realization, in which the organization shall plan and develop processes for product realization, determine requirements as specified by customers, plan and control the design and development for its products, plan and carry out production and services under controlled conditions, and determine the monitoring and measurements to be undertaken and the monitoring and measuring devices needed to provide evidence of conformity of product to determined requirements. In the case of educational institutions this item relates to operations and AACSB foresees the following [4]: *Student retention:* The school has academic standards and retention practices that produce high quality graduates. The academic standards and retention practices are consistent with the school's mission; *Individual faculty educational responsibility:* Individual teaching faculty members operate with integrity in their dealings with students and colleagues, keep their own knowledge current with the continuing development of their teaching disciplines, actively involve students in the learning process, encourage collaboration and cooperation among participants, ensure frequent, prompt feedback on student performance.

Clause 8 of ISO 9001:2000 is about measurement, analysis and improvement standards. This clause requires a system of monitoring, measurement, analysis and improvement for continual improvement and conformity to requirements. AACSB also requires the same type of system to be in place.

Differences

Considering the fact that ISO 9001:2000 has been designed for both manufacturing and service environments, we do not expect to see major differences between these two standards. However, more research on this issue is underway.

CONCLUSION

ISO 9001:2000 ISO focuses on product and service conformity for guaranteeing equity in the marketplace and concentrates on fixing quality system problems and product and service nonconformities. AACSB provides an integrated system that can help business schools establish some standards of quality in different areas covering nine different standards about: Institutional Mission and Goals, Planning and Effectiveness, Educational Program and Its Effectiveness, Students, Faculty, Library and Information Resources, Governance and Administration, Finance, Physical Resources, and Institutional Integrity. Many of these areas are covered by ISO 9001:2000. The only two areas that are not strongly covered by ISO are the Finance and physical resources. However, ISO includes business processes that can indirectly cover the two mentioned standards. In general, using ISO 9001 can satisfy the requirements of AACSB standards, if some specific definitions are made. It is important to pay more attention to the



process of preparing the quality manual to ensure the inclusion of related items. Further research and study in this area can validate this proposal.

References will be provided upon request by authors

TEACHING THE SECOND COURSE IN BUSINESS STATISTICS: STUDENT KNOWLEDGE, USE OF STATISTICAL SOFTWARE, AND STUDENT SATISFACTION

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ABSTRACT

This paper focuses on three themes. The assumption theme discusses both the statistics knowledge students have carried forth from their first statistics course and what computer skills they currently have in using statistical software packages/graphing calculators. Survey results show that competency in statistical software/calculators varies among students and between software packages.

A second theme relates to statistical software packages/ calculators. What are the advantages of using computer-based technology in the teaching of statistical concepts? Which software product is the best one for business majors? How useful is statistical software in simulating real-life processes to learning?

Thirdly, how satisfied are business students with the teaching of their statistics class? Survey results, obtained by a nationally-recognized firm during the past five years from graduating business majors, will relate their level of satisfaction with the quality of teaching of statistics to their undergraduate major.

INTRODUCTION

Students enrolling in a second-level business statistics class arrive with varying levels of competencies that are largely the result of a significant time gap between when they took their introductory class and when they take their second level course. These students also come equipped with a variety of software skills, because their skill level in a particular software product depends on the instructor they had in the introductory class. It has been generally accepted, anecdotally, that most students are not satisfied with the teaching in their statistics class. Evidence from a survey show that this is not necessarily the case.

Theme One. The assumption theme.

Each of our business majors is required to take a second-level course, ECO 231, Applied Business Statistics. Its pre-requisite is STAT 215, Statistical Inference, which, in turn, has one semester of business calculus as its pre-requisite. STAT 215 covers the traditional material found in the introductory statistics class and spans topics from introductory descriptive statistics through statistical inference and simple linear regression. Multiple regression and analysis of variance are not covered in STAT 215.

ECO 231 starts out with a review of basic concepts and then concentrates on regression, both simple linear and multiple, model building, time-series forecasting, and analysis of variance. The analysis of variance portion covers three designs, the completely randomized design, the randomized block design and the two-way factorial design.

A wide range in statistical knowledge and understanding exists in the students as they begin their studies in ECO 231. There are a few reasons for this range.

First, our business curriculum assumes that our business majors will enroll in ECO 231 within one or two semesters of their completion of STAT 215. However, a close look at class rosters reveals a typical pattern in which about 40% had STAT 215 more than one year prior. Many haven't had STAT 215 for three years. A few for four years!

This long time-gap between the completion of STAT 215 and enrollment in ECO 231 results in students forgetting much of the STAT 215 material. It's the "If you don't use it, you lose it." syndrome. Couple this with the fact that only one other course in the business curriculum, econometrics, has ECO 231 as a pre-requisite and one

sees most students delaying enrolling in ECO 231. Consequently, the instructor has a classroom full of students who need a significant amount of review prior to discussion of second-level topics.

The time-gap, referred to above, affects students' appreciation of the use of their calculus knowledge too. That is, two interesting reinforcements of calculus concepts actually occur in the discussion of multiple regression and quadratic regression. For example, in a multiple regression, in which cost is the dependent variable the regression coefficients for the independent predictors represent marginal costs and marginal cost is a topic in business calculus.

The other example, found in quadratic regression involves using the first derivative test to find the maximum or minimum point on the scatter plot.

The reality is that instructors teaching a second-level course in business statistics must assume that students have probably forgotten some or many concepts learned earlier and recognize the need for some degree of review of basic statistical concepts and certain ideas from business calculus before diving into new material.

Theme two. The technology theme.

Why is technology used? What advantages does technology offer? What technologies should be used?

To say the least, there is a plethora of technologies available today for anyone enrolling in a course such as statistics. What do these technologies offer?

First, we are no longer constrained to using small, artificial data sets. Students have access to large, real-world sets of data already in the format required by the software. We have data sets for such software as SAS, Excel, and Minitab. Data entry is largely a thing of the past unless a student actually performs an experiment or takes a survey. Even then, many web sites offer automatic data gathering for the investigator.

Second, the chore of doing complex, tedious and error-prone calculations has been removed (unless a teacher feels that doing these calculations long-hand is pedagogically useful.) One of the complaints about statistics is that these complicated algebraic formulas distract from learning the concepts and ideas of statistical thinking.

Third, a student can investigate fitting data to different models ranging from linear to non-linear ones. Model building becomes less of a burden and more an experimental exercise.

Fourth, technology allows students to simulate real-world processes. One excellent simulation is a very simple one used to show that a regression equation, obtained by least squares, is actually an estimate of the 'true' regression line. This simulation is described by A. Watkins, R. Scheaffer, and G. Cobb, 2004.

Here is how it works. Growth charts, available online from the Centers for Disease Control, show that children between the ages of 8 and 13 grow two inches per year, on average, with a standard deviation of 2 inches. The average height of an 8-year old is 51 inches. Because the CDC has such a wealth of data over many decades, we can safely conclude that the 'true' regression line is $\text{height} = 2 \cdot \text{age} + 35$ for these ages. Thus the true slope is 2.

Now for the simulation. One can pretend to bring an eight-year old into the nurse's office at school and measure his/her height. How is this simulated? Generate a random number with mean = 0 and standard deviation = 2 and add this to the average height of an eight-year old. This simulates an eight-year old who is either a little higher or a little lower in height, or maybe equal to the average height.

Do the same for ages 9, 10, 11, 12, and 13.

Now, perform a simple linear regression of these simulated heights against the ages. This obtains an estimate of β , the true slope relating age and height for these ages.

Have student teams of two do this with Excel or a graphing calculator. You will get 15 or so estimates of β depending upon your class size. After a few semesters, you will have quite a collection of β estimates. Their average is β .

This simulation supports the concept that a regression coefficient is normally distributed with mean β and has a standard error. (All regression assumptions must be met of course.) Indeed this simulation enables students to realize that a regression analysis is just one experiment and is just an estimate of the truth that lies behind the sample.

Fifth, technology offers instant visual reinforcement of concepts. Graphs and tables become readily available. Students can change data inputs and see immediate results from that change. This visual appeal is particularly illustrated in java applets.

Sixth, students who use technology, especially computer software, may make the leap to learn how to compose computer programs. That is they may see that computer programming is very useful.

My first theme, above, underscored assumptions that instructors need to make about the backgrounds of incoming students. Another assumption arises about students' skills in using technology. Certainly we have advanced beyond the excuse that many students don't have access to technology. Experience has shown that virtually every student in college now has access to technology. A practical problem for instructors in the second-level business statistics class arises as students, coming into the second-level course, have some skill in some technology that often depends on who taught them in their introductory class.

A class of 30 students will appear with individual skills in using Excel or Statistica or SPSS or SAS or Minitab or etc. There is no common software! Different students have different software skills!

Surprisingly, faculty in our school of business are not united as to which software and technology ought to be taught to students. They all have their own favorites. Some say Excel is perfectly fine, but this has been refuted by authorities (Burns, 2007 and Pottell, undated). Other faculty feel strongly that business students should be well-versed in more robust software such as SAS, SPSS, or Statistica; products that are true statistical packages.

As for calculators, typically no one, except the few who had AP statistics in high school, will have any idea of how to use their graphing calculator to do statistical inferences. Usually, about 10% of students in the second-level business statistics class have had AP Statistics.

Additional technologies abound! Over the past years, a large number of papers have been presented or written that describe how new and various technologies have been used to enhance the teaching and understanding of statistics. A non-exhaustive list would include:

- Active learning through using java applets.
- Online statistical calculators.
- Online analysis of data.

Theme 3. The student satisfaction in the teaching of statistics theme.

Table 1, on the next page, shows percentages of graduating senior business majors in seven levels of satisfaction for each major over five years. The satisfaction is in the teaching of statistics. The survey instrument does not explicitly direct students to rate the teaching of ECO 231 only. It is possible that a student may rate teaching in both STAT 215 and ECO 231. However, most likely, students had a mind set to rate satisfaction in ECO 23, because the survey instrument placed this question in among 12 others, all of which deal exclusively with required business courses.

Table 1 is quite busy and doesn't lend itself to pattern detection. A briefer summary, in Table 2, below, gives five-year averages for each major grouped into three broader levels: dissatisfied, neutral, satisfied.

Table 2. *Average Percentages of Dissatisfaction, Neutral, and Satisfaction*

Major	Dissatisfied	Neutral	Satisfied	Comments
Accounting	30.2	17	52.8	more satisfied
Bus. Admin.	37.8	18	44.4	more satisfied
Economics	23.6	7.8	68.6	much more satisfied
Finance	29.4	14.8	55.8	more satisfied
Int'l. Bus.	35.8	22.8	41.2	slightly more satisfied
Management	42.4	19.8	37.6	slightly less satisfied
Marketing	38	23.4	38.6	equal

The fact that the first five majors show more satisfaction than dissatisfaction is noteworthy, especially that of economics majors. International business majors show slightly more satisfaction whereas management majors show a slightly less degree of satisfaction than dissatisfaction. Marketing majors show equal percentages of satisfaction and dissatisfaction.

This summary is a bit surprising in that it is commonly thought that students are generally dissatisfied with the teaching of statistics, let alone the subject itself. Generally, students in accounting, economics, and finance tend to be more quantitatively oriented so there is no surprise in their tendency to be more satisfied than dissatisfied in the teaching of statistics. On the other hand, students in business administration, international business,

management, and marketing tend to be more people-oriented and less quantitatively oriented. This is suggested as the reason they are less satisfied than the other majors with the teaching of statistics.

CONCLUSIONS

Instructors of second-level business statistics classes must deal with students who have a wide range of statistical knowledge and a wide range of technology skills. But, they can find a certain level of assurance that their students are satisfied with their teaching on average.

Table 1. *Student Satisfaction with the teaching of Statistics in the School of Business, percentage*

Major	Year	Very Dissatisfied	Moderately Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Moderately Satisfied	Very Satisfied	#
Acct	2004	9	3	19	31	19	3	16	32
	2005	5	15	15	15	32	20	0	41
	2006	8	6	19	17	19	22	8	36
	2007	12	6	6	9	12	36	18	33
	2008	8	8	13	13	13	34	11	38
	2004	8	13	13	28	13	18	10	40
	2005	19	13	13	23	21	6	6	53
	2006	21	9	12	18	24	9	9	34
Bus. Ad.	2007	12	8	24	12	16	12	16	25
	2008	9	9	9	9	26	22	17	23
	2004	0	22	0	11	11	33	22	9
	2005	0	20	20	0	20	20	20	5
	2006	0	17	17	0	17	17	33	6
	2007	0	0	0	20	60	20	0	5
	2008	8	0	15	8	15	31	23	13
	2004	0	10	18	18	24	18	12	50
Fin	2005	9	5	25	14	18	17	12	65
	2006	10	4	16	8	27	29	6	51
	2007	12	10	12	24	16	18	10	51
	2008								
	2009								

	7								
	200								
	8	6	2	11	10	19	29	23	62
Int'l	200								
Bus.	4	0	6	17	44	22	11	0	18
	200								
	5	17	25	0	25	17	13	4	24
	200								
	6	17	8	17	25	8	17	8	12
	200								
	7	7	7	29	0	14	36	7	14
	200								
	8	10	0	20	20	10	20	20	10
Man	200								
	4	15	15	15	22	15	15	4	27
	200								
	5	13	19	23	26	10	10	0	31
	200								
	6	12	18	6	12	18	24	12	17
	200								
	7	17	8	17	21	8	21	8	24
	200								
	8	18	9	9	18	9	23	14	22
Mkt	200								
	4	23	10	10	17	21	15	4	52
	200								
	5	22	22	15	20	9	11	2	46
	200								
	6	3	14	17	21	38	3	3	29
	200								
	7	0	15	15	38	12	12	8	26
	200								
	8	11	0	13	21	21	24	11	38

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ENGAGING STUDENTS WITH WEB 2.0 TECHNOLOGIES

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ABSTRACT

The unique feature of many Web 2.0 applications is that it harnesses the collective intelligence of users. Students become part of a global human network in which they can harness the collective intelligence of people in the world that could have never been possible previously. Students can interact with other students, gain from their experiences, and then construct their own knowledge. The advent of Web 2.0 technologies allows teachers to empower learners and create exciting new learning opportunities. This paper provides a brief overview of Web 2.0 development, explores the use of Web 2.0 in education, and discusses numerous Web 2.0 tools that have potential in teaching and learning.

INTRODUCTION

Today's college students are known as "digital natives" and are also known as members of the Millennial Generation. The digital natives are highly connected, increasing mobile, and technological savvy; and they see technology as an essential part of their lives. According to a 2003 survey by the Pew Internet & American Life Project, more than 53 million American adults or 44% of adults had used the Internet to publish their thoughts, respond to other, post pictures, share files, and otherwise contribute to the explosion of content available online (Richardson, 2006). Prensky (2001) stated, "Our students have changed radically. Today's students are no longer the people our educational system was designed to teach" (p.1). To help the digital natives to learn better, many educators advocate that teaching and learning should be moved away from conventional methods by which students are told what to learn, when, where, and how. Instead, knowledge should be actively constructed and students should be made responsible for their own learning. The opportunity for instant and global publication of information, thoughts, opinions, and ideas is something our "digital native" students take for granted as normal and commonplace.

Web 2.0 has profound potentials in education because of their open nature, ease of use and support for effective collaboration and communication. Web 2.0 technologies change the traditional view of human knowledge and open up great opportunities in teaching and learning. Web 2.0 will affect how colleges and universities go about the business of education, from learning, teaching and assessment, through contact with school communities, widening participation, interfacing with industry, and maintaining contact with alumni (Franklin & Harmelen, 2007). With Web 2.0 applications, students become creators of content, and not just consumers. Web 2.0 provides opportunities for students to create, innovate, collaborate and participate in learning activities.

WEB 2.0

The early World Wide Web (Web 1.0) was static or read only sites where information could be accessed, searched, and retrieved. Web 1.0 has demonstrated powerful capability to connect people. For the past three years, there has been shift from a Web that is "Read Only" to a Web that is being described as the "Read Write Web," "User-Generated Web," or Web 2.0. Web 2.0 allows users to create content as easy as to consume it. Also, users can connect not just to content but to people, ideas, and conversations.

There is no universal definition of Web 2.0. Web 2.0 can be described as any site, service, or technology that promote sharing, collaboration, and social networking. Web 2.0 encompasses a variety of different meanings that include a strong emphasis on user-generated content, data and content sharing and collaborative effort, together with the use of social networking and interactive Web-based applications, and the use of the Web as a platform for generating, re-purposing and consuming content (Franklin & Harmelen, 2007). According to the inventor of the Web, Tim Berners-Lee, Web 2.0 was nothing new because Web 1.0 was all about connecting people. His original

vision of the Web was very much of a collaborative workspace where everything was linked to everything in a single global information space. However, the content sharing aspects of the Web was not included in order to speed up the process of adoption within CERN. This left people thinking of the Web as a medium in which a few content authors published content for a wide audience of relatively passive readers (Anderson, 2007).

The concept of "Web 2.0" began with a conference brainstorming session between Tim O'Reilly and his vice-president, Dale Dougherty, in 2004. A year later, O'Reilly (2005) published his paper, *What is Web 2.0: Design Patterns and Business Model for the Next Generation of Software*, in which he explored the meaning of Web 2.0 and identified seven principles of Web 2.0. However, Tim Berners-Lee and many critics argued that the ability to implement Web 2.0 is all based on "Web 1.0" standard. Although the term of Web 2.0 suggests a new version of the Web, it basically continues to use Web 1.0 technologies and concepts and does not refer to an update to any technical specifications. The term of Web 2.0 only changes in the ways software developers and end-users utilize the Web.

WEB 2.0 IN EDUCATION

Web is no longer an information repository or a place to search for resources. The new Web is a place to find other learners, to exchange ideas and thoughts, to demonstrate creativity, and to create new knowledge. With Web 2.0 data sharing the Web also becomes a platform for social software that enables students to socialize, collaborate, and work with each other (Franklin & Harmelen, 2007). According to a 2007 national study by the Pew Internet and American Life Project (2007), 55 percent all online American youths between the ages of 12 and 17 have created a personal profile online and used social networking sites such as Facebook or MySpace for communication. Of those, 91 percent use the sites to stay in touch with friends they see frequently. Another recent study by the National School Boards Association (NSBA) indicates that American kids are spending almost as much time using social networking services and Web sites as they spend watching television. Ninety-six percent of students with Internet access engage in social networking. Almost sixty percent of students say they use the social networking tools to discuss classes, learning outside school, and planning for college. Students also report using chatting, text messaging, blogging, and online communities such as Facebook and MySpace for educational activities, including collaboration on school projects (National School Boards Association, 2007).

Web 2.0 tools can provide students with an opportunity to collaborate, publish, and share resources for academic enrichment. The common Web 2.0 tools used in education are blogs, collaborative tools, podcasts, multimedia sharing, social bookmarking, social networking, virtual world, and wikis. As of August 28, 2008, there are 2,652 Web 2.0 applications found in the Web 2.0 directory compiled by Go2Web20.net (2008). Table 1 shows some of the popular Web 2.0 tools that have potential in teaching and learning.

Table 1. *Free Web 2.0 Tools for Teaching and Learning*

Category	Tool	Web Address
Blogging	Blogger	http://www.blogger.com
	Wordpress	http://www.wordpress.com
Collaborative Tool	Google Docs & Spreadsheet	http://docs.google.com
	Zoho	http://www.zoho.com
Podcasting	Podomatic	http://www.podomatic.com
Multimedia Sharing	Flickr	http://www.flickr.com
	Photobucket	http://photobucket.com
	YouTube	http://www.youtube.com
Social Bookmarking	Bibsonomy	http://www.bibsonomy.org
	Delic.io.us	http://www.delicious.com
Social Networking	Facebook	http://www.facebook.com
	LinkedIn	http://www.linkedin.com
	Ning	http://www.ning.com
Virtual World	Second Life	http://secondlife.com
Wiki	Wetpaint	http://www.wetpaint.com
	Wikispaces	http://www.wikispaces.com/

Blogs

A blog, or weblog, is a regularly updated journal published on the Web. Blogs allow a single author or a group of authors to write and display time-ordered articles (called posts) publicly. Readers can add comment to posts. Blogs are powerful because they allow millions of people to easily publish and share their ideas and opinions, and millions more to read and respond. They engage the author and readers in an open conversation. Blogs are easily to create, update, and publish to the Internet. Pictures, videos, and links to other sites can be added to a blog entry. Blog is one of the most widely adopted Web 2.0 tools. As of August 2008, Technorati.com, one of many blog tracking services, listed 112.8 million blogs and over 250 million pieces of tagged social media. The Web is incredibly active, and according to Technorati data, there are over 175,000 new blogs every day. Bloggers update their blogs regularly to the tune of over 1.6 million posts per day, or over 18 updates a second (Technorati.com, n.d.).

Educational blogging can open the classroom walls. Many teachers and students have incorporated blogs into their classrooms. Teachers can use a blog for course announcements, news and feedback to students, lecture notes, questions and assignments, and class discussions. Students can use a blog to complete group assignments, share course related resources, reflect learning experiences, and offer their opinions and ideas with others from a different school or even from a different country. Blogs can be used to showcase student work, collaborate, demonstrate analysis and synthesis, and develop peer involvement.

Collaborative Tools

Collaborative tools allow users in different locations to create a document and collaboratively edit the same document at the same time. Examples of these tools are Google Docs & Spreadsheets and Zoho. Teachers and students can use these tools to collaborate on word processing documents, spreadsheets, and presentations over the Web, either simultaneously or simply to share work edited by different individuals at different times (Franklin & Harmelen, 2007).

Podcasts

Podcasting is a unique distribution of audio or video files, such as radio programs or music videos, over the Internet using RSS or Atom syndication. Users can listen, view these files using a media player program on the computer, or easily move them to a mobile device. Podcasts can be enhanced through the use of images, video as well as links to Web site content. Since the birth of podcasting technology in 2004, podcasts have become a very popular medium for news, information, and entertainment. Many colleges and universities have begun podcasting pilots for instructional delivery. With the new generation video iPods or other portable multimedia players, it is possible to provide both video and audio contents to the students. Students can download the lectures to their iPods or even listen to them using traditional media players on personal computers and laptops. The uses of podcasting in education are found in the areas of course content dissemination, classroom recording, field recording, study support, and file transfer and storage. In addition, podcasting can be used in these areas: (a) self-paced distance learning, (b) recording lectures for syndication, (c) literary reviews, (d) video demonstrations and presentations from students and teachers, (e) class news and updates, (f) interviews with guest experts or oral history, (g) distribution of supplemental information such as speeches or music, (h) re-mediation for slower learners, (i) staff development, (j) feedback/evaluation of student work, and (k) language lessons.

Multimedia Sharing

Multimedia-sharing services store user-contributed digital media and allow users to search for and display these media content online. Users have the ability to tag and organize their photos or video clips on a media-sharing site. Also, they can embed their photos or video clips into blogs and wikis creating multimedia artifacts for public consumption. Today, millions of users participate in the sharing and exchange of the digital media by producing their own podcasts, photos and video clips. Photo gallery sites such as Flickr and Photobucket and video sharing

site like YouTube allow teachers and students to share their photos and video clips on the Internet. These media sharing sites also provide valuable resource for teachers and students looking for digital media for use in presentations, projects, learning materials, or coursework. Digital media is an important part of communication. Students can use multimedia-sharing services to upload, view, and share photos and/or video clips. Students have easy access to a pool of digital images and video clips or a place to storage the media for projects.

Social Bookmarking

Social bookmarking allows users to store and share their bookmarks or favorites in an online account accessible by others rather than searching bookmarks stored on their local computer. These bookmarks can be tagged with keywords to help define the information and improve the organization and sharing of the information. Tagging and social bookmarking is an easy and effective way of sharing and filtering interesting links. The social bookmarking site such as del.icio.us allows users to store their bookmarks on the Web and makes them accessible anywhere. Also, users can share their bookmarks with other users. Most social bookmarking sites allow users to subscribe to the bookmarks of others in their network or group, or to a particular tag assigned to bookmarks stored by others. Tagging and social bookmarking is ideally suited to classroom use as it enables groups to build up a collection of resources very easily around a particular topic such that each individual can benefit from the work of others. Teachers and students can use social bookmarking sites to build collections of resources and reading lists for their classes, conduct research and share that research with others, rate and review bookmarks on usefulness of resources, and share links to current news items that relate to classroom discussions (D'Souza, 2006).

Social Networking

Social networks allow people to network together for various purposes. Examples of social network sites such as Classmates, Facebook, and MySpace (for socializing), LinkedIn (for professional networking), and Elgg (for knowledge accretion and learning) are popular among teachers and students. Social networks connect people to one another in some form, whether it is for social or commercial purposes. Some social networks are based on specific topics or interests and a communal atmosphere is created. Social networks allow users to describe themselves and their interests, and they generally implement notions of friends, ranking, and communities (Franklin & Harmelen, 2007). Many colleges and universities have already started using social networks as a recruiting technique resource among faculty, staff, administrators and students. By creating their own community on social networking sites, they have taken the step to reach out and include them in networking and campus events. Teachers can use a social network site to keep in touch with students in class and post class information and assignments.

Virtual World

Second Life, an online 3-D virtual reality world, is currently gaining in popularity around the world. Second Life allows users or "residents" to come together to interact, play, learn, do business, conduct classes, do research, and hold conferences in an online environment which is entirely built and owned by its residents. Residents can engage in rich, sensory experiences, authentic contexts, activities, and opportunities for reflections that form an exciting new domain for a wide range of educational applications including distance education and corporate training. This unique and cutting-edge technology enables teachers to build virtual learning communities for students with the goal of helping students solve real-world problems in an experiential setting.

Second Life could be a valuable educational tool for teaching the digital natives. Second Life provides opportunity to use simulation in a safe environment to enhance experiential learning, allowing students to practice skills, try new ideas, and learn from their mistakes. Students could become interested in psychology by visiting the UC Davis Virtual Hallucinations facility or in space and physics by visiting the International Spaceflight Museum. In a virtual world, learning a language has never been easier. Students can interact with different languages as if they were studying in their land.

Wikis

A wiki is a collaborative Webspaces that allows visitors to add, remove, edit, and change content. It is essentially a fully editable Web site. Wikis allows anyone to post material without knowing HTML or have a Web

Authoring software. People who contribute to a wiki understand that their contribution may be deleted or changed by others (D'Souza, 2006). The most famous wiki is the Wikipedia, the world's largest encyclopedia, where many experts submitted information on various topics. The Wikipedia can be edited by anyone and the whole project is an on honor system basis. Teachers can use wikis to provide their students with opportunities for collaborating in conducting research, processing what they learn, and expressing their findings to wider audiences (Warlick, 2007). Also, teachers can use wikis for managing school and classroom documents, creating and maintaining a classroom FAQ, and providing a place for a classroom discussion and debate (D'Souza, 2006). Students have freedom to build on each other's work and build up resources in a genuinely collaborative way. Wikis can be used in class projects or production of collaboratively edited material including material documenting group project (Franklin & Harmelen, 2007).

SUMMARY

Web 2.0 is having a profound impact in education. The unique feature of many Web 2.0 applications is that it harnesses the collective intelligence of users. Students become part of a global human network in which they can harness the collective intelligence of people in the world that could have never been possible previously. Students can interact with other students, gain from their experiences, and then construct their own knowledge. The advent of Web 2.0 technologies allows teachers to empower learners and create exciting new learning opportunities. The "digital native" students have already found Web 2.0 applications integral to their daily life. They can use Web 2.0 applications to create, contribute, share, collaborate, connect, and participate in a learning community. Students can communicate with others and access knowledge in ways that encourage creative and reflective practices that extend beyond the classroom. As educators, we must take advantages of the Web 2.0 technologies and implement them into teaching and learning.

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THE EU-US TRADE RELATIONS: ISSUES, CONFLICTS AND SOLUTION

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ABSTRACT

The EU and the US are the two largest economies in the world. They account together for about half the entire world economy. The EU and the US are each other's main trading partners. Transatlantic flows of trade and investment amount to around E1.7 billion a day, and, jointly our global trade accounts for almost 40% of world trade. Since the European Union (EU) and the US comprise the largest percentage of international trade, it comes as no surprise that they are also the focus of a sizable number of trade disputes that come before the World Trade Organization (WTO). Another factor may be that many bilateral disputes now involve clashes in domestic values, priorities, and regulatory systems where the international rules of the road are inadequate to provide a sound basis for effective and timely dispute resolution. It is the purpose of this research to investigate trade related issues, conflicts, and solutions between two economic powers.

INTRODUCTION

The EU and US are each other's most important trading partners with the largest bilateral trade and investment relationship in the world. In the area of trade, the US is the largest trading partner for the EU, while the EU is the second largest trading partner for the US after Canada and before Mexico. The bilateral investment relationship is even more significant: the EU and the US are by far the most important source and destination for foreign direct investment for each other (Decker, 2005). The EU and US are responsible together for about two fifths of world trade. In the year 2003, the total amount of two-way investment was over E1.5 trillion, composed of E731 billion of EU FDI in US and around E772 billion of US FDI in Europe. In the year 2005, exports of EU goods to the US amounted to E250 billion, while imports from the US amounted to E250 billion. The two economies are interdependent to a high degree and over the past fifty years. Also, the US and the EU relations have become extremely intertwined. In fact, since globalization between the two continents occurred so quickly and with such intensity, it comes as no purpose for why the world views their partnership to be one of the strongest and most sophisticated developments for international trade and investment. Together, they strive towards defending our common values, promoting global stability and security, and for the overall maintenance of America and European well being. Frequent disputes over economic and foreign policies, the fear of Europe's internal enlargement and development, and even rumors of the EU's currency, the Euro, and threatening the integrity and security of the US dollar caused some to believe their relations are deteriorating, when in essence, these are occasional instances. Like any relationship, the US and EU have had their share of both good and bad times, but because their foundation is as strong as it is, they continue to dominate the world, individually and collectively, a great powerhouse. It is extremely important that the US-EU continue to use their combined efforts to shed some light and hope to people around the world that continue to suffer from oppression (Kim, 2005).

CURRENT TRADE ACCOUNTS WITH THE EU

Table 1 shows the current trade account for the 2000-2005 and in 2006, the EU27 exported 269 billion euro of goods to the US, while imports amounted to 178 billion. The most notable feature of EU-US trade over recent years has been the continued growth in the EU27 surplus, from 32 billion in 2000 to 91 billion in 2006. This increase in the surplus is due both to an increase in exports to the US (from 238 billion in 2000 to 269 billion in 2006), and to a decrease in imports from the US (from 206 billion to 178 billion). In relative terms, EU27 exports to the US fell from 28% to total EU 27 exports in 2000 to 23% in 2006, while imports declined from 21% to 13% over the same period. Almost 42% of EU27 exports to the US, and nearly 45% of EU27 imports from the US, were machinery and vehicles in 2006 (EU-US Facts and Figures-Statistics, 2007).. Most Member States recorded a surplus in trade with the US in 2006 (Ibid).

Table 1. Trade Account in Goods with the US (million euro)

	Exports	Imports	Balance
2000	238 203	206 280	31 923
2001	245 594	203 298	42 296
2002	247 934	182 621	65 313
2003	227 281	158 125	69 157
2004	235 498	159 371	76 128
2005	252 852	163 802	89 050
2006	268 905	177 711	91 195

Source: US-EU Facts and Figures, April 27, 2007, pp: 1-5.

Table 2 shows EU trade in goods with the US by product.

Table 2. EU27 trade in goods with the US by product (million euro)

	Exports		Imports		Balance	
	2000	2006	2000	2006	2000	2006
Total	238 203	268 905	206 280	177 711	31 923	91 195
Primary products:	22 635	32 748	16 491	17 482	6 144	15 267
<i>Food & drink</i>	9 229	11 323	6 143	5 472	3 086	5 851
<i>Crude materials</i>	2 342	3 632	8 105	7 793	-5 763	-4 161
<i>Energy</i>	11 064	17 793	2 243	4 216	8 821	13 577
Manufactured goods:	211 392	229 221	183 653	150 362	27 739	78 859
<i>Chemicals</i>	35 279	54 921	26 609	34 626	8 670	20 295
<i>Machinery & vehicles¹</i>	115 311	112 934	116 391	79 288	-1 080	33 646
<i>Other manuf'd articles¹</i>	60 802	61 366	40 654	36 449	20 148	24 918
Other	4 176	6 936	6 136	9 867	-1 960	-2 931

Source: Ibid.

Table 3 shows EU25 trade in services with the US.

Table 3. EU25 trade in services with the US (million euro)

	Credit			Debit			Net		
	2003	2004	2005	2003	2004	2005	2003	2004	2005
Total	112 301	119 979	122 872	104 618	109 780	115 967	7 683	10 200	6 905
Total extra-EU25	342 976	372 620	406 292	304 470	325 044	349 357	38 506	47 576	56 935
	33%	32%	30%	34%	34%	33%			

Source: Ibid.

Table 4 shows foreign direct investment (FDI) flows between the EU25⁴ and the USA show large variations, with **EU 25** investment in the **USA** of 159 billion euro in 2001, 3 billion in 2002, 51 billion in 2003, 8 billion in 2004 and 29 billion in 2005. On the other hand, **US** direct investment into the **EU25** decreased from 80 billion in 2001 to 9 billion in 2004, then rose to 17 billion in 2005.

Table 4. EU25 FDI flows with the US (million euro)

	2001	2002	2003	2004	2005
EU25 FDI in the USA (outward)	158 706	2 704	51 388	8 423	29 493
USA FDI in the EU25 (inward)	79 643	57 609	51 935	9 292	17 110
Net EU25 FDI flows (outward minus inward)	79 063	-54 905	-547	-869	12 383

Source: Ibid.

CAUSES AND EXAMPLES OF TRADE DISPUTES

Major EU-US trade disputes have varied causes. Some disputes stem from demands from producer interests for support or protection. Trade conflicts involving agriculture, aerospace, steel, and 'contingency protection' fit prominently into this grouping. These conflicts tend to be prompted by traditional trade barriers such as subsidies, tariffs, or industrial policy instruments, where the economic dimensions of the conflict predominate. Other conflicts arise when the US or the EU initiate actions or measures to protect or promote their political and economic interests, often in the absence of significant private sector pressures. Still other conflicts stem from an array of domestic regulatory policies that reflect differing social and environmental values of objectives (Ahearn, 2006). Here has always been room for argument about the precise meaning of provisions in the GATT and its subordinate Agreement. Such arguments have increased as GATT and later the WTO have attempted to keep up with the growing complexity of goods and their production methods, and with the increasing importance of services in international trade. Among the trade disputes which have arisen in the GATT and now the WTO, eight main types can be concerned. All have occurred at different times between the EU and the US (Johnson):

Direct protectionism-illegal tariff, abuse of purchasing procedures, designed to protect domestic producers from competition.



Indirect protectionisms-abuse of a domestic standard or discriminatory application of domestic taxation so as to disadvantage imported goods in favor of domestic production.

Genuine disagreements over the applicability in specific cases of agreed rules and definitions.

Attempts by one country enforce its own domestic standards overseas through the extraterritorial application of domestic regulatory law.

Complaints by one party that its exports to a trading partner are unfairly restricted in order to favor the trade of a third party.

Complaints by one party that a trading partner is distorting trade through unfair subsidy of a particular type of production.

Complaints that a partner country is abusing for protectionist purposes the agreed WTO anti-dumping provisions.

Direct conflicts in international trade between the national regulations and standards of trading partners, reflecting the social preferences of the respective societies.

Currently, 25 member countries joined the EU, which means that the US's policies are going to have to be reshaped if this new international environment is to function. Critics argue that expansion could actually damage both sides. If perhaps, the "process" for enlargement results in too many headaches, permanent scars could be left behind that could have averted some distractions in European politics for many years to come. Since the EU has development into such a supranational entity, upon entry, its member nations are expected to give up a certain amount of their sovereignty. Of the 25 current members, twelve have agreed to give up their monetary policy powers and begin using a common currency, the Euro. Some US observers feel that the Euro will someday be at least as important in the international monetary and financial systems as the US\$ is even losing ground against the Euro on a "global scale." Examples of trade disputes are (Kim, 2005):

Market access conflicts

Industrial policy conflicts

Ideological conflicts

US subsidies

Genetically-modified agricultural biotechnology products

Extra duties against US exports

Subsidies for EU steel manufactures

Ecommerce and data privacy

The Banana Dispute case was very difficult to resolve the EU's banana import regime. The long-standing banana dispute ended when the US and the EU reached an agreement April 11, 2001.

Steel Disputes: A recent market access dispute involved the US safeguard measures on imports of certain steel products. On March 20, 2002, the US announced tariffs up to 30% for 3 years against 15 steel products in an attempt to protect the US struggling steel companies The EU criticized the US unfair protectionism.

The Foreign Sales Corporation Dispute: A prominent and long-standing industrial policy dispute on the US Foreign Sales Corporation/Extraterritorial Income legislation. Prompted by complains of EU companies of the substantial tax savings for the US companies such as Microsoft, Boeing, General Electric and the Walt Disney Corporation

through FSC scheme, the EU made tried to settle the conflict through negotiations. On May 7, 2003, the DSB authorized the EU sanctions of \$4 billion on customs duties of certain products up to 100%. As of March 1, 2004, the EU countermeasures went into force.

The Beef-Hormone Dispute: The EU banned the import of meat and meat products that have been given growth hormones.

Airbus-Boeing Subsidy Tensions: On December 19, 2000, Airbus announced that it had formally launched a program to construct the world's largest commercial passenger aircraft, the newly numbered Airbus A380. In the spring of 2001, Boeing dropped its support of a competing new large aircraft. The airbus action potentially reopens a long-standing trade dispute between the EU and US about subsidization of aircraft projects that compete directly with non-subsidized US products.

Accounting Practices: The board created by the US Congress to oversee the accounting profession has announced that non-US accounting firms will be inspected by domestic authorities. The EU and elsewhere have objected to US regulation of their accounting firms.

The EU denounces US imposition of "safeguard" duties steel imports.

The EU protests the new US farm bill as protectionist.

The EU wins a \$4billion judgment against the US Foreign Sales Corporation tax provisions designed to help US exporters.

GMO Disputes: The case of the US-EU GMO soy bean trade is a classic example of the political give and take that occurs when two international powers disagree over an economic issue. The EU had to put a hold on the importation of GMO products from the US companies. September 25, 1997 the EU approved a law, which requires all foods with genetically modified soybeans and corn to have levels indicating the presence of GMO organisms.

E-Commerce and Data Privacy: The EU Council of Ministers in December 2001 reached agreement on a proposed directive on the taxation of e-commerce. US-based companies have questioned whether the proposed direct threats that US suppliers of digital products less favorably than EU suppliers. Another concern is that non-EU companies could be forced to charge higher VAT rates to European customers than would European retailers.

Future Trends: Disputes on trade will continue between the EU and the US.

DISPUTE SETTLEMENTS AND WTO

Resolution of US-EU trade disputes has become increasingly difficult in recent years. Part of the problem may be due to the fact that the US and the EU are of roughly equal economic strength and neither side has the ability to impose concessions on the other. Another factor may be that many bilateral disputes now involve clashes in domestic values, priorities, and regulatory systems where the international rules of the road are inadequate to provide a sound basis for effective and timely dispute resolution (Congressional Research Service, 2006). The two sides face difficult challenges in keeping the relationship on an even keel in 2006. A number of bilateral trade disputes have been carried over from 2005 and are expected to be considered by the World Trade Organization (WTO). These includes disputes on production subsidies for aircraft manufacturers, the EU treatment of bio-engineered foods, compliance in the long-running battle over tax breaks for US exporters, and the continuing ban on beef treated with growth hormones (Ibid.). There is no single or constant model of trade disputes, and in recent years there have been significant changes in the nature of those which arise. These considerations bear fundamentally on what can be done to resolve US-EU disputes and to avoid, or at least reduce, the risk of such disputes arising (Johnson). Major US-EU trade challenges can be grouped into five categories: (1) complying with WTO rulings; (2) resolving longstanding trade disputes involving aerospace production subsidies and beef hormones; (3) dealing with different public concerns over new technologies and new industries; (4) fostering cooperative competition policies; and (5) strengthening the multilateral trading system (ibid.). Since its inception in

1995, more than 330 disputes have been raised under the WTO Dispute Settlement System. The major players in world trade-the US and the EU-are also the busiest users of this instrument (EloP: Text 2005-012: Abstract, Economic Integration, US-EU Trade Conflicts and WTO Dispute Settlement, p.1.) As complaints, 19.4% of which concern the EU, 24% the US, and the rest concerns other countries, each not more than 8%(ibid).. Whether the WTO Dispute Settlement System was more successful than the former GATT is an open question. Some find that the WTO system was more successful than those of GATT, others question this position (Peterson, 2004). The ability of the WTO to authorize trade retaliation as a response to persistent violations is perhaps the most salient, but also the most controversial feature of its dispute settlement system (Ibid). The WTO's Dispute Settlement Understanding (DSU) evolved out of the ineffective means used under the GATT for settling disagreements among members (The International Economics Study Center). All WTO member nation-states are subject to it and are the only legal entities that may bring and file cases to the WTO. It provides strict time frames for the dispute settlement process and establish an appeals system to standardize the interpretation of specific clauses of the agreements. The WTO' procedures for resolving trade quarrels under the Dispute Settlement Understanding is vital for enforcing the rules and therefore for ensuring that trade flows smoothly. A Dispute arises when a member government believes another member government is violating an agreement or a commitment that it has made in the WTO. There are essentially four phases in the WTO dispute settlement process: consultations, the panel process, the appellate process and surveillance of implementation.

Phase 1 -Consultations: A WTO member may ask for consultations with another WTO member if the complaining member believes that the other member has violated a WTO agreement or otherwise nullified or impaired benefits accruing to it. The goal of the consultation stage is to enable the disputing parties to understand better the factual situation and the legal claims in respect of the dispute and to resolve the matter without further proceedings.

Phase 2-The Panel Process: If consultations fail to resolve the dispute within 60 days of the request for consultations, the complaining WTO member may request the Dispute Settlement Body (DSB) to establish the panel to rule on the dispute.

Phase 3 -The Appellate Process: The possibility of an appeal to an Appellate Body is a new feature of the WTO dispute settlement system. The Appellate Body is required to issue its report within 60 (at most 90) days from the date of the appeal, and its report is to be adopted automatically by the DSB within 30days, absent consensus to the contrary.

Phase 4 -Surveillance of Implementation: The final phase of the WTO dispute settlement process is the surveillance stage. This is designed to ensure that DSB recommendations are implemented. The bond between the EU and the US has proven its resilience through times of difficulty, and we continue to demonstrate global leadership and effective transatlantic cooperation in the face of the most pressing challenges of our day by promoting international peace, stability, democracy, human rights, international criminal justice, working together in conflict prevention and post-conflict reconstruction, fighting the scourge of terrorism while protecting the fundamental freedoms on which out democratic societies are built, encouraging the world's fast-growing economic powers to assume their responsibilities in the global rules-based system, fostering an open, competitive and innovative transatlantic economy, and combating climate change, promoting energy security and efficiency, helping developing nations lift themselves out of poverty, and fighting the most crippling infectious diseases (2008 EU-US Summit Declaration , 2008).

CONCLUSION

Historically, times of recession are accompanied by wanting enthusiasm for global free trade. The Bush Administration has responded bravely, creatively, and positively to the shattering events of September 11. It is critical for the prosperity of the world today that the white House more aggressively hew to a free trade line in the months ahead (Hulsman, 2001). The EU has made progress in undermining the shadow economies of conflict by tackling the illegal trade in some conflict resources. However, the EU needs to confront the structural ways in which its trade policy can inadvertently promote instability. Meanwhile, the EU needs to consider how best to exert the leverage of its trade policy to reduce conflict around world (JohnsoN).. In conclusion, it should become evident the US and the EU's relationship still remains a very powerful and important entity. A key area of the US and the EU

engagement is “economics.” Today, the US and the EU have among the most integrated and interdependent economies in the world. Given the huge volume of commercial interactions, it is commonly pointed out that trade disputes are quite natural and perhaps inevitable. While the vast majority of two-way trade and investment is unaffected by disputes, a small fraction (often estimated at 1%) of the total often gives rise to controversy and litigation. Historically, with the possible exception of agriculture, the disputes have been handled without excessive political rancor. There were, are, and will be times when the US and the EU will have their differences, but as long as they remain strong and committed to their common beliefs, the many successes that lie ahead of them are tremendous. Finally, transatlantic relations encompass more than the EU and the US relations do. The EU and the US must provide common security and well being for the world.

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INSTRUCTING AND MENTORING THE AFRICAN AMERICAN: NOTES FROM THE FIELD

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ABSTRACT

This article written by graduate and undergraduate faculty at a Historically Black College and University (HBCU) presents voices from the field, practical and contemporary approaches for challenging and motivating African American students in the college environment.

INTRODUCTION

Prior to the *Brown v. the Kansas Board of Education* decision Historical Black Universities and Colleges (HBCUs) were the principal sources of higher education experiences for African American students. Since *Brown*, Traditional White Institutions (TWIs) have opened their doors to African American students across the nation. However, over fifty years after the *Brown* decision, African American students still have significant problems completing the university experience. In the years 1986-1989, only 37% of all African American students who enrolled as first-year students graduated within six years, as compared to 59% of Whites Americans. Over a six-year period from 1989-1995, the graduation rates were 35% and 43% for African American men and African American women, respectively. In the United States, nationwide, only 14.6% of African Americans have a four-year college degree. Further, the likelihood of an African American college student graduating within six years of institutional matriculation is greater if that student attends a HBCU as opposed to a TWI. In addition, while approximately 17% of African American undergraduates attend HBCUs, 28.2% of African-Americans who receive Bachelor's degrees receive them from Historically Black Colleges and Universities. (Hunt, 1996). Therefore, improving the effectiveness of the university experience by understanding the needs and characteristics of African American students remains an important issue in our society.

In regards to African American several researchers have identified mentoring as important factor in the retention and completion rates for African American students attending postsecondary institutions (Blackwell, 1989; Faison, 1996; Lee, 1999). In fact, research in the educational settings indicates that students are more likely to succeed if they have had a mentor. Studies have revealed that for African American students, faculty mentoring was a significant factor at both HBCUs and TWIs. The similarities found between the African American student and African American mentor may serve as a foundation for developing effective communication and trust so that the relationship can be sustained over time (Kincey, 2007). This paper explores the mentoring relationship of undergraduate and graduate students at a HBCU, Florida A&M University.

CONTEXTS OF THE INVESTIGATION

The context of this investigation was a series of discussions between professors in the College of Education at Florida Agricultural and Mechanical University (FAMU). FAMU is a historically black university located in Tallahassee, Florida and is one of eleven institutions in Florida's State University System. FAMU's enrollment consists primarily of undergraduate students and the University offers 62 Bachelor's degrees in 103 majors/tracks, and 36 Master's degrees. Recently, *Black Enterprise Magazine's* in its September 2006 issue honored FAMU as the number one college for African Americans in the country. According to *Diverse Issue in Higher Education*, FAMU is the number one degree producers for All Disciplines Combined (HBCUs vs. TWIs) and the top producers of All Disciplines Combined (African American Baccalaureate) (Borden, 2008).

FAMU was established in 1887, as the State Normal College for Colored Students. It became a Land grant university in 1891 under the Second Morrill Act, changing its name to State Normal and Industrial College for Colored Students. It became an official institution of higher learning with the 1905 Buckman Act. In 1909, it became the Florida Agricultural and Mechanical College for Negroes, and in 1953 the name was changed to its current name, Florida Agricultural and Mechanical University. FAMU is noted for its College of Pharmacy, College of Journalism, and School of Business and Industry. Currently, FAMU has 620 full-time instructional faculty. The faculty in this study was from the College of Education.

MENTORING

What is Mentoring?

Although the idea of having a mentor or being a mentor has become very popular these days; there is no single definition of "mentor". Rather, most of the definitions include the function of mentors. While many of us use the term quite often, very few know the true model for its use. The term mentor and the model for its use came from Greek mythology. In fact, when Odysseus went off to the Trojan War, he charged his household manager, mentor, with the development of his son, Telemachus. Many of our great leaders participated in a mentor/protégé relationship, i.e., Socrates and Plato, Freud and Jung, Boas and Mead, Sartre and de Beauvoir, Hayden and Beethoven. Although the mentor may serve as a teacher and or sponsor, the mentor's primary function is to assist the protégé in realizing his or her potential.

The concept of mentoring is very complicated and as with all other concepts, mentoring can be defined broadly or narrowly. When defined narrowly, it can be assumed that mentors have certain characteristics and mentoring occurs in certain of situations. If mentoring is defined very broadly, e.g. mentoring is good pedagogy, the characteristics between the situation and mentors are also much broader. The broader the definition one uses, the more different situations and mentor types can be included in the definition, and the more mentoring exists. If one uses very strict definitions, the less mentoring can be assumed to exist.

Malderez and Bodoczky (1999) offer a definition of the mentor. They see the mentor as more experienced in comparison to the mentee. Mentoring happens in a one to one relationship. Malderez and Bodoczky (1999) present five types of characteristics of mentors to offer a clearer picture of this whole phenomenon. The five types of roles mentors can have are:

- Model
- Acculturator
- Sponsor
- Supporter
- Educator

All these roles have different functions. A mentor can use combination of the roles in different situations. As a model the mentor inspires and demonstrates to the mentee, being an acculturator involves showing the mentee the ropes and helping the mentee adjusting to a new environment. As a sponsor the mentor is opening doors, introducing the mentee/protégé to discuss problems or barrier success. As a supporter the mentor focuses on being there when needed, providing opportunities for the mentee protégé to let off steam and to act as a sounding board. As a supporter, the mentor focuses on emotional aspects and on the affective elements of the mentor-mentee protégé relationship, whereas acculturator and sponsor emphasize more practical aspects. The final role, educator, focuses

on the learning processes: the mentor encourages mentee's reflection and articulation of practice and helps the mentee to achieve his learning objectives.

There are two basic types of mentoring relationships – formal and the informal. The formal is organizationally arranged, structured relationships, in which the mentee is matched with a mentor based on pre-arranged criteria (Chao & Walz, 1992). The main purpose of formalized mentoring programs is to orient outsiders to the particulars of the inside culture of an organization over a designated period of time. Through these programs, mentors provide accessibility and frequent interaction, allow mentees to work with high-level leaders, insist that mentees receive feedback from mentors, acknowledge successful mentors in the program, and encourage a strong commitment to the mentoring process. All of these factors help to insure that mentees have the opportunity to receive psychosocial benefits that are often associated with formalized mentoring, as well as benefit from career development functions of the mentor (Faison, 1996). In the second form of mentoring, the informal arrangement, mentoring just happens. There are no program, no meetings to attend – just two people whose chemistry is compatible who get together to share ideas and learn with one taking the role of teacher or mentor, the other the student or protégé. In these situations, there are low expectations and the mentoring is "easier to do", but it is less effective and requires little or no training.

The practice of mentoring beginning teachers emerged in the 1980s as a professional development strategy for achieving a variety of goals. One goal focuses solely on teachers who are just entering the profession, while two others extend the benefits of mentoring to other educators in the school and district community. Mentorship promises potential benefits in three areas (Little, 1990). Others believe that mentoring is important for induction---to help transition student into the work world. Some believe that mentoring is important for career enhancement---to provide an avenue for leadership, public recognition and professional development and program innovation. Finally, having a mentor contributes to overall job satisfaction.

A mentor helps shape the growth and development of the mentee/protégé. In higher education, a mentoring relationship is a close, individualized relationship that develops over time between a student and a faculty member and includes both caring and guidance. The mentoring process has been perceived traditionally as a model for apprenticeships in graduate education, but it is now increasingly identified as a retention strategy for undergraduate education (Jacobi, 1991). Formal mentoring programs have provided the most significant increase in enrollment and retention of minority students, as well as increased their overall satisfaction with their educational experience. Faison (1996) says that successful mentoring experiences are based on participants sharing common goals, perceptions and worldviews.

In planning mentor or mentee/protégé relationships in the university setting, the program should plan for human growth and development, as well as career mentoring. According to Faison (1996), many African American students report the need to develop a strong tie with an African American faculty member. The students perceive that African American faculty understand their unique needs and are often culturally and socially different from their White faculty counterparts. The similarities found between the African American students and African American mentors may serve as a foundation for developing effective communication and trust so that the relationship can be sustained over time (Faison, 1996).

The Benefits of Mentoring

The number of mentoring programs has grown dramatically in recent years. This popularity results in part from compelling testimonials by people--youth and adults alike--who have themselves benefited from the positive influence of an older person who helped them endure social, academic, career, or personal crises.

If the mentor/protégé relationship has been beneficial and rewarding to both parties, a long-term friendship may develop; however, the contact and involvement may not be as frequent. The mentee/ protégé may internalize the admired qualities of the mentor more fully, thereby enriching himself/herself.

Because mentoring is a two-way relationship in which individuals share stories, experiences, and ideas, there are rewards for the protégé/mentee as well. Observing a person grow and learn is an affirmation of the mentor's efforts. The special bond that develops between mentor and protégé can develop into a career-long friendship.

Paglis, Green, and Bauer (2006) conducted a longitudinal study to identify the benefits that accrued to 130 doctoral students as a result of their relationship with a mentor. The study assessed the impact of mentoring on student research productivity, career commitment, and self-efficacy. The findings revealed that mentoring led to

higher research productivity for doctoral students and self-efficacy (motivation and performance), but showed no significant correlation between mentoring and career commitment.

Connections forged through mentoring open the doors to greater opportunities. Although affirmative action laws were put in place to address inequities in the workplace, they do not provide any mechanism for enabling African Americans to ascend up the corporate ladder. Most successful professionals can attribute much of their achievement to their mentoring relationships.

Further, organizations of any size can enjoy the benefits of mentoring. The quality and quantity of projects and work related initiatives are directly related to the ability of the organization's people to work together to surpass their expectations. Nurturing and collaborating through mentoring can only enhance the organization's work. As a corollary benefit, people who feel better about themselves and their work will make a better impression on customers/clients. Customers/Clients see the positive interactions and, in turn, feel better about the organization's work.

Several disciplines have researched the rewards and benefits of mentoring African Americans. The most notable are the areas of Business and Education (Davidson and Foster-Johnson 2002; Dreher & Cox, 1996, Lee 1999, Leveinson, 1978, Thomas, 1990; Zen 1994).

The question of whether same-race mentoring is better than cross-race relationships are still being debated. Davidson and Foster-Johnson (2002) acknowledge the benefits that mentoring can have for improving the experience for doctoral experience for minority students. They suggest that in academia, "students of color need mentors that are effective and influential in the department, regardless of racial background" (p.553). Recommendations from this study include recognition of differences such as race/ethnicity between mentor and protégé for cross-race relationships, and multicultural competence for the faculty.

Studies of African American executives show a direct correlation between job growth, promotions and salary increases and having mentors:

- Not having an influential mentor or sponsor was reported as one of the top barriers to advancement of African American female executives, according to Catalyst's (2002) "Women of Color in Corporate Management Report."
- The study also shows that 69 percent of those with mentors were promoted, compared with 50 percent of those with no mentors.
- According to Korn/Ferry International's study (1998), "Diversity in the Executive Suite: Creating Successful Career Paths and Strategies," formal and informal mentoring and support from superiors and co-workers are key factors that help place minority executives on the organizational fast track.
- Korn/Ferry International's study also shows that African American executives who reported having informal mentors at work (73 percent) had faster salary and total compensation growth than those without one.
- The study also shows that 69 percent of those with mentors were promoted, compared with 50 percent of those with no mentors.

Additionally, African American managers' experiences with mentoring and sponsorship, suggests it is more difficult for them to get mentors and to build the type of developmental relationships necessary to long-term career development. A survey of 397 members of the National Black MBA Association conducted by Raymond Friedman and Donna Carter in 1993 found that 53 % felt they did not have the support of a mentor. Another study of 729 African American and White MBAs also found that African Americans reported significantly less mentoring assistance than Whites. Limited access to mentoring disadvantages African Americans in terms of skill development, promotion opportunities, and career satisfaction. They do not receive the grooming they need to assume top positions.

Even when African Americans gain access to mentors, there are a number of racial dynamics that affect the quality and benefits of the relationship. David Thomas's (1990) study of developmental relationships of African American and White managers in a major public utility company provided a number of insights about the cross-race and cross-gender dynamics that occur in such relationships. He found that African American men and women had a majority of their mentoring relationships with White men. This finding is not surprising since White males dominate upper management positions in most organizations. Thus, gender seems to be an easier barrier to negotiate than race. Yet these cross-race relationships provided less psychosocial support compared to same-race relationships. As Thomas (1990) concluded, "The difficulty in developing the psychosocial support aspect of cross-racial relationships most likely contributes to and is caused by the lack of comfort that White and Black managers feel with each other."

The long-term result may be that African American managers are not given difficult and important assignments of the type that lead to high visibility and advancement because such assignments create risk to the mentor. To find psychosocial and emotional support, African American managers must venture beyond their departmental and hierarchical boundaries to establish relationships with other African Americans. In fact, Thomas's research (1990) showed that African American men and women formed relationships with other African American men and women in numbers that exceeded their proportional representation in the management workforce in the company. Because of their small numbers in organizations, senior African American managers have to assume an extraordinary burden when mentoring their junior colleagues.

Research on organizations has long documented the importance of mentoring in the development of top-level managers. Mentor-protégé relationships provide budding managers with information instrumental to career advancement and also provide "psychosocial support". A major element of the classic mentor-protégé relationship is a high level of rapport and interpersonal chemistry. Research indicates that mentors and sponsors are more likely to choose protégés who are more similar to them in terms of race and gender. To the extent that mentors tend to avoid risk in selecting protégés, stereotypes of African Americans as incompetent pose a substantial barrier to their selection as protégés.

Benefits to Mentee/Protégé

- Development of an interpersonal relationship with a caring, informed, supportive advisor
- Ability to receive constructive feedback
- Direction in defining and achieving career goals
- Acquisition of an objective and credible source of information

Benefits to Mentors

- Satisfaction in helping the mentee/ protégé define and achieve career/professional goals and objectives
- A sense of pride from observing the mentee/ protégé develop
- An opportunity to improve interpersonal communication, motivation, coaching, counseling, and leadership skills
- Pleasure in knowing the you are contributing to the success of the organization
- An opportunity to impart valuable information, expertise, and wisdom to a receptive individual

COMMENTS FROM THE FIELD

This paper was the result of discussion from members of the undergraduate and graduate faculty of the College of Education at Florida A&M University. The participants were:

Elizabeth K. Davenport, Ph.D., J.D. Dr. Davenport is a graduate of Michigan State University's (MSU) College of Education, receiving a Ph.D. in Teacher Education, Curriculum, and Social Analysis. Dr. Davenport holds a Bachelor of Arts degree in Education and a Juris Doctorate from the University of Michigan, as well as an LL.M from New York University School of Law. An Associate Professor at Florida A&M University, she also has Master's degrees in Telecommunications and Adult and Lifelong Learning from Michigan State University and is the former Coordinator of the Ph.D. program at FAMU.

Patricia Green-Powell, Ph.D. Dr. Green-Powell is an Associate Professor in the Department of Educational Leadership and Human Services at Florida A&M University. Her Bachelor degree in Speech Pathology and Audiology is from Florida A&M University and her Master of Science and Doctor of Philosophy degrees in Educational Administration and Supervision are from Florida State University. Dr. Green-Powell is the former vice president of Student Affairs at FAMU and prior to that position, was vice president for Student Affairs at Bainbridge College. She also worked as an associate business professor at South Carolina State University

Thyria S. Greene-Ansley, Ph.D. Dr. Ansley earned her Ph.D. degree from Florida State University's College of Education. She serves as Co-Chair of the Elementary Education Department and at Florida A & M University where she is a tenured professor. She teaches both graduate and undergraduate level courses in the area of teacher education. Before joining the faculty at Florida A & M University, Dr. Ansley served as the Assistant to the Vice

President for Minority Affairs at Florida State University.

Rufus Ellis, Jr., Ph.D. Dr. Ellis received his Bachelor's of Arts Degree in Psychology and Education from Morris Brown College of the Atlanta University Center, a Master's of Arts in Teaching Degree from Northwestern University, and a Doctor of Philosophy Degree in Educational Administration, Supervisions, and Curriculum Development with emphasis in School Law and Educational Policy from Florida State University. He currently serves as an Associate Professor of Education and Associate Chairman, Department of Secondary Education and Foundations, Florida Agricultural and Mechanical University (FAMU), Tallahassee, Florida. He is also Co-Director of the Center for Educational Innovations and Research, Florida A&M University

Charles P. Ervin, Ph.D. Dr. Ervin is the Chair, and a tenured associate professor of Secondary Education and Foundations in the College of Education at Florida A&M University. He holds the Ph.D. in Sociological Foundations of Education from Georgia State University. He previously served as the State Coordinator for the Education of Homeless Children and Youth for the Florida DOE. He also holds a Masters degree from Central Michigan University, and a bachelor's degree from North Carolina A&T State University.

Marian W. Smith, Ph.D. Dr. Smith received her Ph. D in Mathematics Education from Georgia State University, her Master's of Education from the University of Georgia and the Bachelor of Science degree in Mathematics from Fort Valley State College (now University). She is a Professor of Mathematics Education at Florida A&M University, where she teaches undergraduate and graduate courses in mathematics for pre-service teachers. She has been extensively involved in mathematics education throughout her career, as well as a member on various doctoral committees.

The participants had a series of discussions concerning mentoring and their affect on student achievement and retention. The professors discussed the importance in their own practice and in their relationships with students. Their comments were grouped into five categories:

- Acclimating the student to the college environment by providing a personal contact
- Providing assistance in the knowledge needs of students
- Assisting in student personal and professional development
- Providing constructive and supportive feedback
- Providing encouragement and support

There are several events and activities which mentors contributed to that affect student persistence at institution of higher education. First, mentors assist students in acclimating students to the college environment. According to comments culled from the discussions, the professors believe that university professors are on the front line of student adjustment to higher education. Therefore, they must make sure that they have the most recent copies of program's guidelines and be able to clarifying their university's expectations for coursework with their students. The faculty mentor also alerts students to possible pitfalls, especially those that may affect their academic or financial status with the university.

Second, mentors help to satisfy the knowledge-based needs of the student. The mentor can help the mentee to reflect on his or her thinking, facilitate learning process and support the cognitive processes. The mentor can also counsel the mentee and guides the student through practical situations. Many mentoring relationships will also include emotional or affective aspects such as offering the mentee support, motivation, genuine interest.

Third, the mentor helps the mentee to develop professionally and personally. Research indicates that frequent, meaningful interactions between students and faculty are important for student personal learning and personal development. (Kuh & Hu, 2001) Kuh and Hu (2001) in their study *Effects of Student-Faculty Interaction in the 1990s*, examined the character and impact of student-faculty interaction on student learning and personal development in the 1990s. They specifically focused on the (1) nature of undergraduate student-faculty interaction from the first year of college through the senior year, (2) contribution of student-faculty interaction to student satisfaction during college, and (3) how different forms of contact between students and faculty contribute to learning and satisfaction (Kuh & Hu, 2001). Students, who enter into positive mentoring relationships, have increased satisfaction with their four year institution (Kuh & Hu, 2001). By drawing upon their own life experiences, mentors can provide a living example of the importance of completing a college education, particularly for students who do not have access to anyone with firsthand experience of what it is like to go to college

Fourth, the mentor provides constructive and supportive feedback, which includes providing students with forthright assessments of their work in a timely manner because a delay in response may hinder their progress. They must also temper criticisms with praise and remind students that they, the faculty mentee, are holding them to high standards to help the student improve as a student and a scholar. Finally, if a student is falling behind in his or her work; a mentor does not automatically assume because it is due to lack of commitment, but talks to the mentee to ascertain the cause of the problem and offer assistance.

Fifth, mentors provide encouragement to students to discuss their ideas and to try new techniques and to expand their skills. They also, when necessary, act as an advocate.

Finally, mentoring according the College of Education faculty helps

- To prepare students for their careers by providing learning opportunities about the realities of a professional career from mentors. These mentors will share what it takes for success, the importance of learning from failures, working and communicating with others, and balancing careers and personal lives.
- To increase the number of African American students who graduate from the institution and find satisfying employment or post-graduate educational opportunities in their chosen fields.
- To increase the number of alumni mentors and individuals who feel more connected to the university through their volunteer, membership, and financial commitments

CONCLUSION

The research is clear; mentoring is a fundamental form of human development where one person invests time, energy, and personal know-how in assisting the growth and ability of another person. Mentors set high expectations of performance, offer challenging ideas and help build self-confidence. Mentors encourage professional behavior, offer friendship, and confront negative behaviors and attitudes. Mentors listen to personal problems, teach by example, and provide growth experiences. Mentors explain how the organization works, coach their mentee/protégés, and stand by and offer support in critical situations. Mentors offer wise counsel, encourage winning behavior, trigger self-awareness, and inspire their mentee/protégés. Mentors share critical knowledge, offer encouragement, and assist with career development.

Mentoring in higher education is a collaborative learning experience between a student and a faculty member that can be used to promote educational achievement and career development. The aim of the mentoring relationship is to facilitate and enhance learning and growth of the mentee/protégés. The frequency and quality of interaction between student and faculty has been cited as a key factor affecting encouragement, commitment, and time to degree completion.

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ARE STUDENT EVALUATIONS MEANINGFUL? A STUDY OF THE OPINIONS OF ACCOUNTING STUDENTS COMPARED TO BUSINESS PROFESSORS

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ABSTRACT

This report surveyed 36 universities that used SET as a consideration in faculty evaluations. Every university's evaluation was partially based on a Liker scale survey. This study selected six questions commonly asked on evaluations and quantified the answers. The respondents gave their preferences of what constituted a high rating. The surveyed group consisted of faculty and students. Responses to the questions were drastically different between the groups. The results indicate faculty and students disagree on what constitutes good educational delivery. Students usually rated items that were on the lower end of Bloom's taxonomy as good educational practices. Faculty tended to think that higher level skill development was the best teaching approach. Based on the results of this survey the conclusion can be made that students rate professors higher who cater to lower level skills. Faculty members who are doing a stellar job get penalized on SET for emphasizing higher level skills.

INTRODUCTION

Much has been written regarding the value of student evaluations of teaching (SET) with numerous assumptions about their validity. Based on a survey of 36 universities, there was unanimous usage of a Liker SET as part of their teaching evaluation process for tenure and promotion decisions (See Appendix A). Since this is such a key ingredient of a professor's evaluation, it would seem logical to have quantification of what constitutes excellent teaching. Past studies have assumed that there was a standard measure of teaching effectiveness and that answers based on a Liker scale indicated a level of competence in good teaching. This may account for the conflicting results from the numerous prior studies which have been performed in this area. This study quantifies good teaching from both a faculty and student viewpoint to determine how each group evaluates teaching excellence. Given the difference of opinion regarding good teaching as conveyed by students and faculty, the use of Liker testing may need to be completely eliminated or revamped in the future to obtain useable results.

This study uses the hypothesis that if quantifiable factors are included in SET, these instruments would be substantially more useful in determining the weight that should be placed on their usage in tenure and promotion decisions. Most prior studies have based their validity assumptions from answers given on a Liker scale to questions that are not quantified. The student is required to interpret the degree of agreement or disagreement to the question as stated. Since there are no quantifiable results, it simply becomes an opinion survey. This study tests the idea that what constitutes effective teaching varies based upon whether the viewpoints of students or of a professor are used. To ask students for example "if they learned a lot in this course" is much like asking if "the food tastes good". There is no measurable quantification of either question. One can only specify their opinion. Depending on past experiences the opinion may change as one gains maturity and understanding.

This study examined six commonly asked questions from student evaluations and quantified the answers. These questions were then posed to both students and faculty for their opinions of what constituted good teaching techniques. The results suggest that what surveyed students consider good teaching practices may be undesirable techniques by the professors who responded to the questionnaire.

BODY OF MANUSCRIPT

Prior Research

Numerous studies have been published on the validity of student evaluations. Some suggest that the age, race or sex of an instructor have as much to do with the evaluation results as the teaching techniques themselves. Others have suggested that what is being measured is not learning but rather perceptions of fairness and teacher motivation rather than teaching effectiveness. Another common criticism is that instructors may be “dummying down” the courses by teaching more facts but fewer high level application skills. Prior research supports all of these premises and numerous others.

Merritt (2008) stated that “studies examining instructor race and student ratings have confirmed minority faculty receive significantly lower evaluations than their white colleagues” (p. 236).

Whitworth, Price and Randall (2002) stated that one of the problems is “the focus on what is actually being measured. Often student ratings have only a slight relationship to student learning (Marchese, 1997). After all, a teacher can motivate students and be concerned, fair, enthusiastic, and prepared, yet the students nevertheless might learn very little in that class” (p.282). They went on to say that different courses seem to have different levels of student ratings and that “Further analysis based on student response to the question relating to ‘excellent instructor’ revealed that instructor gender may also come into play in student opinion” (p.282).

Everett (1997) has stated that there may be an adverse effect on faculty from stressing higher level cognitive (HLC) skills because of fear of lower student evaluations. He postulates that students, when asked if they learned a great deal in the course, consider what facts they can remember, and if a large number of facts are remembered they assumed a high level of learning. Relating this data to Blooms taxonomy, Everett (1997) states “dealing with HLC material may confuse some students, reduce clarity of communication, and hence actually lower global SET scores by reducing the percentage of students who give the instructor an acceptable rating” (p.101). This would suggest that in order to maximize student ratings a professor may avoid HLC in favor of Lower Learning Cognitive (LLC) skills to increase ratings. These results strongly suggest that student evaluations may actually lower teaching standards rather than increasing student outcomes.

Others contend that faculty course selection can effect evaluations. McPherson (2006) states that statistical tests indicate that it is inappropriate to pool principles and upper division classes when examining SET scores. This would imply that course ratings are as much a function of the courses taught as the ability to teach the courses. It was also noted that specific courses tended to generate better course evaluations.

An interesting study by Lawson and Stephenson (2005) states that “faculty members are rewarded for being perceived as easy by their students, although the marginal effect of increasing easiness is not constant” (p.485). They went on to say that faculty members who are perceived as attractive are rated substantially higher than their non attractive colleagues. If this is in fact the case the best teaching evaluations may be the result of cosmetic surgery rather than class preparedness.

In a study by Dobbins (1986) the sex of the rater was tested to see if differences in instructor rating varied based on the rater’s sex. A group of of instructors with known ratings were rated by students of both sexes. The student raters were given four vignettes of professor’s performances. The male raters scored the male professors higher than their female counterparts. Although obviously limited by the fact there was not any actual contact with the professor, it is interesting that the sex of the rater and that of the faculty member being rated would cause a significant difference in results. This study also indicates that the sex of the rater has an effect on student evaluations since male raters gave higher ratings to male professors than female professors.

There is a widespread feeling among faculty that student evaluations of teaching are not reliable. Becker and Watts (1999) found the following:

Faculty dissatisfaction with student evaluations of teaching is understandable, given the lack of agreement about their validity among psychometricians and education specialists. Moreover, many faculty members view SET ratings as popularity contests that can be manipulated by an instructor's grading policies, classroom entertainment quotient, and the choice of classroom activities shortly before and on the day of SET administration. (p. 344)

Many professors assume student evaluations are an inexpensive way to gather data but the data has no validity. Are these SET a suitable premise upon which to base tenure and promotion decisions?

What correlations exist between good teaching and effective learning? Gramlich and Greenlee (1993) studied students at the University of Michigan taking the same subject with a common grading situation. Courses were taught by teaching assistants or faculty with varying SET scores. According to Gramlich and Greenlee (1993) "The results generally confirm the previous findings of relatively little impact of SET ratings on student performance" (p. 3). That is whether the students were taught by faculty with high or low SET scores was not a factor in learning as measured by the standardized test. If this is the case then it appears that if there is something about instructors that does matter in explaining student learning, and that something is not well measured by the SET.

Some studies have suggested that there is a valid correlation between student evaluations and professor teaching qualities. Moore (2006) suggests that good teaching techniques result in good evaluations. He states that "teaching methods employed by the professor are the most important component to teaching effectiveness" (p.58). He goes on to say "Administering fair examinations and treating students with respect were additional statistically significant variables" (p.58). The basic problem with the Moore study is that it is not an evaluation of how much students learned, but rather how they felt about a teacher's effectiveness and whether they felt test procedures were fair. The evaluation instrument used no verifiable standard concerning if, in fact, tests were fair. This would lead one to believe that two of the most important questions studied were in fact meaningless. The idea of treating students with respect may be an enviable goal but does it truly have a quantifiable effect on the amount students learn? To suggest fair testing is a goal would be to assume that there is an objective method of defining a "fair test".

The idea that student evaluations can be predicted based on various factors such as age, appearance, sex, rater etc. leads one to believe that it may well be the rating instrument that is really the cause of the conflicting results of the numerous studies that have been done. Radmacher and Martin (2001) suggest that "the personality trait of extraversion is the most significant predictor of student evaluations of teaching effectiveness, even after controlling for grades, enrollment status, and student age" (p. 265). Again this study displays that learning is not the driving force behind SET scores.

Based on the constant disagreement among researchers as to what causes good or bad student evaluations, is there any reason why faculty should not doubt their value as a tool for measuring teaching effectiveness? When students are asked to measure a faculty member's teaching effectiveness on a five point scale with no definition for good or poor performance it is logical to assume that the results would make a less than convincing argument. This is much like asking if the temperature is too hot. There is no quantifiable standard for comparison. The idea of student evaluations also assumes that students are informed consumers of what value has been added by the instructor. Even though the students are not knowledgeable of what the course should teach. This is, at best, a risky proposition. Does the average patient know if a brain surgeon has done the operation in the most efficient manner?

Methodology

To measure student and faculty perception of good teaching practices a survey instrument was prepared. This instrument quantified six questions from the Austin Peay State University (APSU) SET form. Questions were reworded from the original APSU survey instrument to give grammatically correct results, but the basic substance of the SET's was maintained. (See Appendix B for a copy of the original SET). Each survey consisted of six questions followed by two answers labeled "A" and "B", respectively. Study participants were asked to choose the answer that he or she felt was most appropriate in terms of teaching excellence.

Student answers were taken from accounting classes in the School of Business at Austin Peay State University (APSU). APSU has approximately 1,000 undergraduate business majors and 22 full time faculty members. It is a public university that is a Unit of the Tennessee Board of Regents system. For this study, a sample of 123 students was taken during the spring 2008 semester. All of the students were currently enrolled in at least one accounting course. Eighty-six of these students were currently taking Principles of Accounting while the remaining 37 were in upper division accounting courses. Principles students are typically at the sophomore or junior level while the Upper Division students are at the junior or senior level. Classes were selected for the survey based on course prerequisites to keep a particular student from answering the survey in more than one class. Student responses were gathered by five different faculty members at APSU. Three APSU faculty members, in addition to the authors, voluntarily participated in the gathering of the data from students. All students were assured their selections would remain anonymous.

The faculty members who participated in the study were from Austin Peay as well as other universities in Tennessee and Kentucky. The survey results from the faculty at schools other than Austin Peay were collected at

the Annual Ken-Tenn Best Practices Conference, which was held at The University of Tennessee at Martin in February 2008. A total of 22 faculty responses were collected. The survey taken by the study participants consisted of six questions. The questions and responses are shown in Table 1 below.

Results

In comparing the results of the survey we found that of the six questions tested there was majority agreement on two items tested between student and faculty responders. The remaining four questions demonstrated an extreme disagreement between the views of faculty and students on what constitutes effective teaching.

The question with the highest level of agreement dealt with the instructor's effective use of classroom time. Faculty agree by a margin of 67% to 33% to using whatever time was necessary for all students to understand the material before moving on to another topic. Students responded with an 89% to 11% margin to this question. The reasons for response rate differences in faculty and students may be due to the fact that faculty know the total amount of material which will need to be covered in the course while students are not aware of this limitation. It may also be postulated that faculty realize that some students need more study on their own to grasp the topic being covered and that additional class time will simply bore the students who have already grasped the concept. Finally, there may be a realization on the part of the faculty member that the course is a prerequisite to a future course and that the material must be introduced in the limited class time available.

The second question with majority agreement dealt with how faculty should enhance student interest in the material. The professors by a 59% to 41% margin thought that faculty telling interesting stories about the subject would enhance interest in the subject more than having students do research to see how the material may apply to real situations. The student's response was overwhelming with 98% to 2% margin that interesting stories by faculty was a superior teaching technique compared to students researching the topic on their own. One might speculate the reason for the students' response was because their work load would be reduced by having the faculty find material related to the subject rather doing their own research.

The remaining questions surveyed showed major variations between faculty and students. These variations ranged from 62% to 92% disagreement. The question which dealt with the appropriate amount of work to be done out of class saw a large difference between students and faculty. The majority of faculty, 77%, felt that two hours of work for each class hour appropriate compared to 23% of faculty that felt one hour would be an appropriate amount of work. Students, on the other hand, by a margin of 15% to 85%, felt that one hour of work per class hour was appropriate. We see from this disparity a 62% variation between faculty and students of the proper out of class workload. Since most universities course evaluations ask a question dealing with the reasonableness of work required by a teacher, we can assume that the student ratings drops will occur for professors who require more homework than students choose to complete.

On a question asking about course content being relevant and useful there was again an overwhelming difference between faculty and students. Faculty by a 95% to 5% margin felt items which would not be covered on the test or have an immediate use to students should still be covered. Students by a similarly overwhelming margin of 31% to 69% felt that if the material was not going to be on the test the instructor should not cover the material in class. This is something that should be of particular interest to those who make decisions on faculty teaching styles. To think that a faculty member should not include items which will not be tested is a strange concept to most educators and would seem to fly in the face of good educational practices.

A question involving what constitutes good grading and evaluation techniques showed a 74% disagreement rate between faculty and students. The faculty, by an 81% to 19% margin, felt that instructors should not give makeup or extra credit work to prop up students grades. Students strongly disagreed with the faculty by a 7% to 93% margin that good evaluation techniques require extra credit and allowing students to make up missed assignments. Most students would appear to think that the best teachers are those who give the opportunity to make the highest grades. This may be a reason for the rampant grade inflation that has been occurring in many of our universities.

The final question deals with student perceptions of what constitutes an effective teacher. This question goes to the very heart of quality teaching and what constitutes good instruction. Unfortunately students and faculty

were more divided on this basic question than any other in the survey. There was a 92% disagreement rate on what constituted effective teaching. Faculty unanimously agreed that the effective instructors make a student find answers on their own. Students took the exact opposite view of effective teaching. By a margin of 92% to 8% they thought an instructor should stay with items that are relevant to test. One could assume that students should be given short compact study sheets with the answers available and not be required to research answers.

There was not a noticeable difference in response rates between principles and upper level accounting students except for one question. The majority of upper level students considered items relevant even if they were not of immediate use. Principles students desired professors to stick to material which was going to be tested. This may be because the more senior students realized that while a question may not be on the chapter test it may be relevant to a future CPA exam or their career in general.

Table 1. *Survey Results*

	<u>Principles Students</u> %	<u>Upper Level</u> %	<u>Total students</u> %	<u>Total Fac.</u> %
1. Which selection represents the best measure of instructors teaching effectiveness?				
A.) A good instructor stays with items relevant to the test.	100%	73%	92%	0%
B.) A good instructor makes you find answers on your own.	0%	27%	8%	100%
2. Which selection represents the best level of instructor enhancement of student learning?				
A.) Instructor should use interesting stories to enhance class.	100%	92%	98%	59%
B.) Instructors should have students do research papers to see how information may apply.	0%	8%	2%	41%
3. Which selection represents the best measure of effective use of class time?				
A.) The instructor should go over the material until all students understand.	87%	92%	89%	67%
B.) The instructor should cover all topics even if he has to rush through the material.	13%	8%	11%	33%
4. Which selection represents the best measure of the instructor using good evaluation and grading techniques?				
A.) Instructors should give extra credit and allow makeup work.	97%	86%	93%	19%
B.) Instructor should not give makeup work or allow extra credit.	3%	14%	7%	81%
5.) Which selection represents the best measure of whether course content was relevant and useful?				
A.) Items should be taught even if they do not have an immediate use.	20%	57%	95%	31%
B.) Instructor should stick to the information that is going to be on the test.	80%	43%	5%	69%
6.) Which selection represents the best measure of a reasonable amount of assigned work?				
A.) 2 hours of work for each class hour is a reasonable amount.	11.6%	24.3%	77%	15%
B.) 1 hour of work for each class hour is a reasonable amount of work.	88.4%	75.6%	23%	85%

CONCLUSION

This study found that the vast majority of schools use SET in tenure and promotion decisions. Since these evaluations are so important to academic careers and student learning outcomes, it would be better to measure faculty on some basis that professors and administrators value rather than survey results that most research has shown can be easily biased.

If faculty members are to be assessed based in part on student evaluations, it is recommended that the use of Liker rating not be used and instead direct questions about how an instructor runs their class be answered. Based on the proceeding comparison of faculty and student responses, it appears that what students consider good and effective teaching practices are drastically different than the views of professors. Faculty evaluation committees should consider good classroom management practice based on measures other than SET scores.

In conclusion it appears a valid argument can be made that professors who receive the lowest SET scores should not be summarily dismissed as poor teachers. Their styles may be in line with most faculty think is the correct way to manage a class. Tenure and promotion committees should look at alternate ways of evaluating professors other than though a process of averaging SET scores. These scores, when based on a Liker scale, seem to be a poor measure of teaching effectiveness.

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APPENDIX A

School	Do you require student evaluations of faculty?	Do these evaluations count toward Tenure and/or Promotion?	Are the evaluations done using a Liker scale to answer these questions?
University of Tennessee at Martin	Yes	Yes	Yes
Middle Tennessee State University	Yes	Yes	Yes
Tennessee State University	Yes	Yes	Yes
Tennessee Technological University	Yes	Yes	Yes
Rhodes College	Yes	Yes	Yes
Belmont University	Yes	Yes	Yes
Lipscomb University	Yes	Yes	Yes
U. Tennessee at Chattanooga	Yes	Yes	Yes
Murray State University	Yes	Yes	Yes
Western Kentucky University	Yes	Yes	Yes
University of Alabama	Yes	Yes	Yes
Auburn University	Yes	Yes	Yes
Mississippi State University	Yes	Yes	Yes
Duke University	Yes	Yes	Yes
University of North Carolina	Yes	Yes	Yes
University of Tennessee	Yes	Yes	Yes
Samford University	Yes	Yes	Yes
Clemson University	Yes	Yes	Yes
Columbus State University	Yes	Yes	Yes
Dillard University	Yes	Yes	Yes
University of Georgia	Yes	Yes	Yes
Purdue University	Yes	Yes	Yes
Texas A & M University	Yes	Yes	Yes
Georgia Institute Tech	Yes	Yes	Yes
Georgia Southern University	Yes	Yes	Yes
Northwestern University	Yes	Yes	Yes
Georgetown University	Yes	Yes	Yes
University of Florida	Yes	Yes	Yes
University of Illinois	Yes	Yes	Yes
Boston College	Yes	Yes	Yes
University of Texas at Austin	Yes	Yes	Yes
University of Cincinnati	Yes	Yes	Yes
University of Iowa	Yes	Yes	Yes
Oklahoma State University	Yes	Yes	Yes
George Mason University	Yes	Yes	Yes
Penn State University	Yes	Yes	Yes
University of Wisconsin-Madison	Yes	Yes	Yes
Louisiana State University	Yes	Yes	Yes



APPENDIX B

Please circle one: Principles Course Upper Division

Teaching Evaluations Survey- Spring 2008

Select the answer that you feel is most appropriate from the following six questions.

1. Which of the following represents the best measure of the instructor's teaching effectiveness?
 - A. A good instructor stays with items that are relevant to the test.
 - B. A good instructor makes you find answers on your own.
2. Which of the following represents the best measure of the instructor's enhancement of student interest?
 - A. The instructor should use interesting stories to enhance class interest.
 - B. Instructors should have students do research papers to see how information may apply.
3. Which of the following represents the best measure of the instructor's effective use of class time?
 - A. The instructor should go over the material until all students understand.
 - B. The instructor should cover all topics even if he has to rush through the material.
4. Which of the following represents the best measure of the instructor using good evaluative and grading techniques?
 - A. Instructors should give extra credit and allow makeup work.
 - B. Instructors should NOT give extra credit or allow makeup work.
5. Which of the following represents the best measure of whether the course content was relevant and useful?
 - A. Items should be taught even if they do not have an immediate use.
 - B. The instructor should stick to the information that is going to be covered on the test.
6. Which of the following represents the best measure of a reasonable amount of assigned work?
 - A. 2 hours of work for each class hour is a reasonable amount of work.
 - B. 1 hour of work for each class hour is a reasonable amount of work.

THE NATURE OF ARGUMENT AMONG FRESHMEN COLLEGE STUDENTS, SCIENCE TEACHERS, AND PRACTICING SCIENTISTS

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ABSTRACT

The study aimed to (a) elucidate college Freshmen science students, secondary science teachers, and practicing scientists' perceptions of scientific arguments and how these perceptions compare to Toulmin's (1958) formal analytical frameworks, which is often used to analyze arguments in the science education literature, and (b) characterize the nature of the criteria that participant students, teachers, and scientists deploy when assessing the "validity" of arguments. Participants were 30 (50% female) students, science teachers, and scientists. In-depth, semi-structured interviews served as the main instrument of data collection. Data analyses indicated that all participants, including scientists, did not fare well when strictly judged from the perspective of Toulmin's structural elements of argument. The findings point to a mismatch between empirically-derived conceptions of argument based in scientific practice and those derived from formal analytical frameworks often used by science educators.

INTRODUCTION

The importance of argumentation in science education has been highlighted by science educators (e.g., DeBoer, 1991; Driver, Newton, & Osborne, 2000; Jimenez, Rodriguez, & Duschl, 2000) and in current science education reform efforts (e.g., AAAS, 1993). A variety of reasons are often offered to support such a focus on argumentation. Zembal-Saul (2005, p. 3) noted that engagement with argumentation (a) helps learners experience scientific practices that situate knowledge production in original contexts, which enable them to learn not only science content, but ideas *about* science as well including an understanding of the role of language, culture, and social interaction in the process of knowledge construction (Driver et al., 2000; Osborne, Erduran, Simon & Monk, 2001); (b) makes learners' understanding and thinking visible, thus, providing a valuable tool for reflection and assessment (Abell, Andreson, & Chezem, 2000; Bell & Linn, 2000; Sandoval & Reiser, 1997; Zembal-Saul & Land, 2002); and (c) helps learners develop different ways of thinking (Kuhn, 1991, 1993).

Empirical research, however, shows that meaningful argumentation is absent from the majority of science classrooms (Osborne et al., 2001). Research indicates that students have difficulties generating "scientific arguments," which are implicitly characterized as arguments generated by scientists (e.g., Driver et al., 2000, 2001; Duschl, & Osborne, 2002; Kolsto, 2002; Zeidler, 1997). Surprisingly, beyond this inferred characterization, few criteria are advanced by researchers to define or identify what exactly is a "scientific argument."

Researchers have mostly analyzed student arguments using generic analytic frameworks advanced by Toulmin (1958) and, to a lesser extent, by Walton (1996) (e.g., Duschl & Osborne, 2002; Jimenez-Aleixandre, Rodriguez, & Duschl, 2000). Toulmin's framework is widely used because of its general applicability and relative simplicity when compared to other available frameworks (van Eemeren et al., 1996). However, a number of studies challenged the applicability and usefulness of Toulmin's model to real-life arguments mainly on the basis of the clarity and degree of differentiation between the various elements entailed in his model (Dressman, 2005; Freeman, 1991; Willard, 1976). Katzav and Reed (2004) noted that two major features characterize analytic frameworks of argumentation, such as those of Toulmin and Walton. First, these frameworks were advanced within contexts, including everyday life and jurisprudence contexts (van Eemeren et al., 1996), that differ from those of scientific communities. Second, the frameworks allow elucidating the elements and/or structure of arguments without necessarily telling much about the "validity" or "goodness" of arguments: Other criteria need to be brought to bear when researchers make claims as to student failings in generating arguments. However, the specific nature of these criteria remains somewhat vague. Clearly, perceptions of what a "scientific argument" is play a major role in

studying arguments because inevitable judgments about the adequacy and validity of student arguments would rely on criteria that go beyond a characterization of the elements and/or structure of an argument. In this regard, the circularity of characterizing a scientific argument as argument generated by scientists is unavoidable. This very circularity, nonetheless, entails a need for an empirically-grounded approach to the study of student argumentation. Thus, more attention should be directed to the ways that (a) students and science teachers perceive the nature of arguments, and (b) practicing scientists judge the adequacy of argument as a guiding framework for studying how students engage with argumentative discourse in the context of science teaching and learning. Such is the purpose of the present study.

PURPOSE AND RESEARCH QUESTIONS

The study aimed to (a) elucidate college freshmen science students, secondary science teachers, and practicing scientists' perceptions of "scientific" arguments and how these perceptions compare to the formal analytical framework of Toulmin (1958) and (b) characterize the nature of the criteria that participant students, teachers, and scientists deploy when assessing the "validity" of arguments. The following research questions guided the study: (a) What structural elements (Toulmin, 1958) are evident in arguments about a socioscientific issue generated by participant students, teachers, and scientists? (b) What are students, teachers, and scientists' perceptions of argument? (c) What criteria do participant students, teachers, and scientists draw upon when judging the "validity" of arguments? (d) How do the identified structural elements and perceptions of argument, and criteria used to judge arguments compare and contrast across the three groups? (e) To what extent do participants' perceptions of valid scientific arguments draw upon Toulmin's structural elements of argument?

METHOD

The study was exploratory and interpretive in nature. In-depth, semi-structured interviews served as the main instrument of data collection. In two separate interviews, participants first constructed arguments in defense of a certain standpoint in the context of global warming, and then provided feedback on the arguments constructed by other participants.

Participants

Participants comprised three groups from a large, Midwestern University and neighboring communities: Freshmen college students, secondary science teachers, and practicing scientists. Each group comprised 10 participants (50% female). Participant Freshmen students had completed, at least, two years of high school science. All participant teachers held BS degrees in their teaching area and had taught high school biology, chemistry, and/or Earth science for, at least, three years. The scientists comprised advanced graduate students in the final stages of their doctoral program (i.e., in the dissertation research and/or writing phase), postdoctoral fellows, and professional scientists from the biological, chemical, and geological sciences. The focus on the biological, chemical, and geological sciences was related to the context, that is, global warming, in which participants were asked to make and assess arguments.

Procedures

The study was conducted in two phases. First, during semi-structured individual interviews all participants were furnished with a scenario about global warming featuring two opposing positions (adopted from Sadler, Chambers, & Zeidler, 2004). The first used evidence about gas emissions to argue that global warming is a "myth" and the second position used other evidence also related to gas emissions to argue that global warming is a real and impending crisis. Interviewees read the scenario, stated their standpoint on the issue (which included not taking any side in the debate), and then generated an argument to support and justify their own position. Participants were given ample time to take notes and outline their argument before sharing it with the interviewer. Follow-up questions were used to probe participants' ideas and clarify any ambiguities in their statements. Next, interview transcripts were used to generate an argument map for each participant following procedures adapted from Horn (2003). An argument map features a set of visual representations corresponding to a number of independent arguments (whether fully developed or not) in a certain interview transcript. Each participant was provided with his/her argument map

and asked to verify whether the map represented the arguments he/she put forth during the interviews; the maps were modified accordingly. In addition to serving as a tool for member checking (Denzin & Lincoln, 2000), the argument maps were also used as part of the data analysis procedures described below.

During the second phase of the study, participants in each group assessed and provided feedback on the arguments generated during the first phase by three other participants: One generated by a member of their peer group and arguments generated by one member of each of the other two groups. The assignment of arguments to be examined was randomized. This examination took place in the context of a second, semi-structured interview. When examining an argument, a participant listened to an audiotape of that argument in addition to having access to its transcripts. The group membership of the arguer was not disclosed so as to avoid biases that might result from perceptions associated with assuming that the arguer has less or more knowledge or stature compared to the individual assessing the argument. The interviewee was asked to assess the merit of the argument and justify their assessment. Interviews in both the first and second phase of the study were conducted by the primary author and averaged 50 minutes in length. All interviews were audiotaped and transcribed verbatim for analysis.

Data Analysis

Data analysis comprised three phases. The **first** involved using the analytical framework of Toulmin (1958) to generate a profile of the structural elements in participants' arguments articulated during the first interview. The researchers first read the interview I transcripts for each participant and identified the structural elements in his/her argument (i.e., claims, warrants, data, backings, rebuttals, and/or qualifiers) in accordance with Toulmin's definitions. The identified elements were used to generate an argument map from this first level analysis. The argument map was then checked against the corresponding interview transcript to ensure that the map captures all the elements contained in a participant's argument. These steps were repeated for all participants resulting in an argument map per interview transcript. Next, the argument maps for each group of participants (students, science teachers, and scientists) were examined side by side to generate a full descriptive account or *profile* of these maps. A profile detailed the characteristics that cut across a set of maps. This analysis resulted in three profiles, one each for the group of participant students. Finally, the profiles were compared and contrasted to make assertions regarding ways in which students, teachers, and scientists' arguments are similar or different from Toulmin's perspective. The **second** phase focused on analyzing transcripts generated during the second interview to characterize participants' perceptions of the nature of arguments, and derive the criteria deployed by members of the three groups to judge the "validity" or "goodness" of arguments. Interview II transcripts were first read to identify statements related to two aspects: (a) Broad statements, both direct and indirect, that shed light on participants' definitions and/or conceptions of what an argument is, and (b) specific statements related to the criteria that participants used when discussing and assessing arguments put forth by other participants. Brief phrases were used to generate a first level coding of these statements. Next, the codes relevant to the three assessments generated by each participant were searched for common themes. This resulted in individual profiles as to perceptions of the nature of argument and criteria used to judge arguments. Profiles within each group of participants were searched for general patterns to generate a common set of criteria that each group used in their assessment, if applicable. These common sets were then compared and contrasted across the three groups. The **third** phase of data analysis focused on comparing and contrasting the sets of criteria derived from the second phase with those in Toulmin's (1958) framework. Analysis in this third phase was more conceptual in nature and focused on how the three groups of participants fared in terms of argumentation when their arguments are analyzed using Toulmin *versus* using the criteria derived from the second phase of data analysis.

RESULTS

Given space limitations, only an overview of the major findings will be presented here. The full paper will substantiate these findings with excerpts from interviews and argument maps. First, from Toulmin's (1958) perspective, student and teacher arguments were poorly structured. Student arguments mainly comprised claims and data that were poorly connected. While not very different from those of students, science teacher arguments did feature the use of backings, albeit not very effectively. Scientists' arguments, in comparison, comprised rebuttals and modal qualifiers in addition to a more effective use of data. However, more importantly, like participant students and teachers, scientists did *not* fare well when their arguments were compared to the full model prescribed by Toulmin for a complete argument. Second, all participants viewed scientific argument as a *process* of

investigation, but differed in characterizing such a process. For scientists, argument was a process embedded within the structures and mechanisms of scientific communities as an assessment of the fit between predictions and data. Participant teachers viewed argument either as a dynamic process in which reproducible data served as the sole referent or a process governed by “The Scientific Method.” In comparison, participant students’ perceptions of argument were rather fragmented and limited to comments on arguments being the result of “rigorous research” or useful when comprehensible to all stakeholders as compared to only members of the scientific community. Third, all participants emphasized that evidence was the major element in determining the “goodness” of arguments. However, while scientists emphasized that data must be recent, valid, and of multiple types, teachers noted that data must be “reproducible” and acquired by “The Scientific Method.” Students, on the other hand, emphasized the need for multiple sources of up-to-date data that are stated in comprehensible forms. Both scientists and teachers noted that the “validity” of arguments depends on their objectivity and lack of bias, which could be achieved by disclosing the backgrounds and credibility of the scientists involved. Scientists added that identifying the sources of funding for relevant research and using quantitative data were crucial to such validity. Students, in comparison, noted that the validity of arguments derives from giving priority to human moral and ethical issues (vs. economic and political factors) and focusing on the consequences for humans. Participants did not invoke any characteristics that are inherent to arguments (e.g., structural elements, use of such elements) as is the case in Toulmin’s formal analytical framework.

DISCUSSION AND IMPLICATIONS

Participants conceived argument in ways that differ from conceptions underlying Toulmin’s formal framework, which is often used to judge arguments in science education research. Indeed, when strictly judged from Toulmin’s perspective, scientists themselves did *not* fare well in the arguments they advanced in this study. Thus, the findings point to a mismatch between empirically-derived conceptions of argument based in scientific practice and those derived from formal analytical framework. The mismatch suggests that the consistently dismal performance of students and science teachers in terms of argumentation might stem less from know-how and abilities and more from unrealistic expectations that result from an overemphasis on the use of formal analytical frameworks in science education research. The present findings provide an initial framework for judging the validity of students’ and science teachers’ arguments. The paper argues that empirically-grounded studies of argument within scientific communities should guide the approach of science education researchers to the study of argument. For instance, our present emphasis on argument as a product needs to be replaced or, at least, augmented with an emphasis on argument as a process, which is more consistent with participants’ perceptions of argument.

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GREEN MARKETING: RISKS AND OPPORTUNITIES

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ABSTRACT

The reality of green marketing is hard to ignore. Currently, green marketers are challenged to efficiently reach consumers and effectively impact their attitudes and behaviors. Because of the risks of green initiatives, businesses are holding back on green product development. Demand for eco-friendly goods remains uncertain and companies are delaying capital investments while the regulatory environment is in flux. The popularity of green marketing arises for the anticipated benefits the organization hopes to gain, as well as the negative consequences they hope to avoid by engaging in green marketing programs, strategies, and plans. However, there are also some negative issues, challenges, and risks that business should be aware of before engaging in this type of marketing strategy. This paper examines issues of green marketing as well as the risks and opportunities of green marketing strategic choices.

INTRODUCTION

Awareness of sustainability issues is reaching a tipping point, as business across America put their weight behind the global imperative to go green (Green Purchasing Summit, November, 2007). Green marketing is a powerful convergence between green buyers and sellers. More and more consumers expect to use their spending as an expression of their environmental commitment. More and more businesses are establishing environmental performance as a point of competitive distinction and social responsibility (Terra Choice Environmental Marketing, Inc. November 2007). One business area where environmental issues have received a great deal of discussion in the popular and professional press is marketing. Terms like “Green Marketing” and “Environmental Marketing” appear frequently in the popular press. Many governments around the world have become so concerned about green marketing activities that they have attempted to regulate them (Polonsky, 1994). In view of the growing concern over the environment related aspects across the world the marketers are attempting to address the green issues by way of increased attention to ‘cradle to cradle’ products instead of ‘cradle to grave’ products. The need for green products is gradually increasing on account of persistent raise in the concern for eco-friendliness. In the West, business firms face social and legal pressures to adopt environmentally-friendly business strategies (Johri, 1998). Organizations are bestowed with the responsibility of preserving the rare natural resources to meet the needs of the forthcoming generation. The increased popularity of green marketing is undeniable, and that popularity brings with it some difficult choices. Should a business engage in green marketing? Is it a sustainable phenomenon leading to strategic advantage, or is it simply the next new fad that will disappear as quickly as it arrived? These kinds of questions can really be answered only on an individual company by company basis. Any organization choosing to invest time and money into a green marketing effort or campaign should be aware of the benefits as well as the potential risks with green marketing strategy (Valentine, 2007). The findings of this research will enable firms to arrive at appropriate strategic decisions to capture the emerging eco friendliness markets and consumers.

THE RULES OF GREEN MARKETING

When you play by “the rules,” green can enhance marketability, improve product performance, and represent a potent new source of innovation (Ottman, 2002). Ottman, Stafford, and Hartman suggested that green marketing must satisfy two objectives: improved environmental quality and customer satisfaction. The rules of green marketing are; consumer need to be aware of and concerned about the environmental issues product addresses; the need to feel, as one consumer or even as a part of a large group of consumers, that by using your product they will be able to make a difference; they must believe your claims; they need to feel your product will meet their needs, i.e., it will work as well as or better than non-green alternatives; and they must feel they can afford any premiums. Of course, just like in marketing overall, the more you offer, the more consumers will be willing to pay. Marketers in the US must ensure their green marketing claims can meet the following set of criteria in order to comply with the FTC’s guideline (Polonsky, 2002). Green marketing claims must; clearly state environmental benefits; explain

environmental characteristics; explain how benefits are achieved; ensure comparative differences and justified; ensure negative factors are taken into consideration; and only use meaningful terms and pictures. Also, there should be at least five desirable benefits commonly associated with green products: efficiency and cost effectiveness; health and safety; performance; symbolism and status; and convenience (Ottman, Stafford & Hartman). In clarifying these guidelines, however, the FTC faces three major challenges today:

First, regardless of the guidelines the FTC puts into place, it is increasingly difficult for consumers to substantiate corporate environmental claims.

Second, it is difficult for consumers to discern from current guidelines what they likely secondary environmental impacts are from a particular product.

Third, as the FTC's guide is only an administrative ruling, the FTC does not have the legal authority to enforce them. Instead, the FTC can take only corrective actions against those who violate them which limits their punch in market (Dwight, 2008). Despite their limitations, FTC guidelines provide an essential guide for green marketers as well as empower consumers advocacy groups will likely step with information to make informed purchase decisions. Evidence indicates that successful green products have avoided green marketing myopia by following three important principles: consumer value positioning, calibration of consumer knowledge, and the credibility of product claims (Ottman, Stafford & Hartman).

UNDERSTANDING GREEN CONSUMERS

Since the 1960s, environmental issues have gained importance in business as well as public policy discourses. Recent polls report that 87% of U.S. adults are concerned about the condition of the natural environment, 80% believe that protecting the environment will require major changes in current life-styles and 75% consider themselves to be environmentalists. 50% of Americans claim to look for environmental labels and to switch brands based on environment-friendliness (Prakash, 2002). Understanding the demographics of green consumerism can help entrepreneurs explore the environmental market, and home in on likely prospects. Research has shown that green consumers; most green consumers prefer to buy environmental products in stores where they already shop; people are willing to pay more for what is perceived as a better product (Massey, 2007); are sincere in their intentions, with a growing commitment to greener lifestyles; almost always judge their environmental practices as inadequate; and do not expect companies to be perfect in order to be considered 'green'. Rather, they look for companies that are taking substantive steps and have made a commitment to improve; tend to overstate their green behavior, including the number of green products they actually use; want environmental protection to be easy, and not to entail major sacrifices; tend to distrust companies' environmental claims, unless they have been independently verified; lack knowledge about environmental issues, and tend not to trust themselves to evaluate scientific information about environmental impacts (http://www.bsdglobal.com/markets/green_who.asp). Yankelovich illustrates the degree to which all consumers—from "Green-less" to "Green-Enthusiasts"—are likely to buy a product based on its green features (Table 1).

Table 1. *Degrees of Consumers*

Green-less (29%)	Unmoved by environmental issues
Green-bits (19%)	Don't care but doing a few things
Green-steps (25%)	Aware, concerned taking steps
Green-speaks (15%)	Talk the talk more than walk the wall
Green-enthusiasts (13%)	Environment is a passionate concern

(USC41-58,file://c:DOCUME-1\valentr\LOCALS1\Temp\JSHWU6PU.htm.)

Consumers also say that they are willing to back up their convictions with economic action especially when it comes to excess packaging. A survey of Packaging magazine revealed that nearly 80% of consumers believe some

products use too much packaging. 50% say that over packaging will negatively affect their buying decision. And almost 70% of consumers declared that they would spend more for recyclable packages (Gillespie, 1992). For now, it seems green consumerism is destined to be limited to the roughly 10% to 12% of the marketplace that pollsters tell us are willing to regularly seek out and buy green products, regardless of how much more they cost or what lengths one must to find them. Despite its frustrations, green consumerism remains a powerful, largely untapped tool for environmental change. It doesn't take 51% voting in one direction to effect change. A relatively small number of consumers can be a potent force (http://eartheasy.com/article_green_consumers.Html). When consumers are faced with a trade-off between product attributes, the environment almost always loses. Many products that require consumers to make such trade-offs have failed to establish themselves in the marketplace. To succeed, eco-entrepreneurs must not neglect the traditional values of price, quality, convenience, and availability (http://Bsdglpobal.com/markets/green_marketing.asp). One of the keys to being a profitable and environmentally driven company is having the product and marketing strategies that make sense for today's consumers, which Grunewald says subscribe to one, or perhaps a combination, of three types of purchasing behaviors:

Rational-wants to buy a product because it costs less to operate.

Learned-possesses a working knowledge of environmental topics.

Green-emotionally driven consumers are pro-environment and actively seek green products (Jancsurak, 1998).

Eco-labels influence consumer behavior in two ways. First, they introduce green as considered attribute at the point of sale. Second, they enable consumers shop based on green. Over the past few years, there have been many new eco-labels launched by governments, manufacturers, and retailers. Many of these labels are listed on Consumer Report's Greener Choice site (<http://marketinggreen.wordpress.com>).

PROBLEMS OF ENVIRONMENTAL CLAIMS

Based on Terra Choice environmental marketing survey, the false or misleading environmental claims into the following "Six Sins of Green washing":

Hidden Trade off-The sin of the hidden trade-off is committed by suggesting a product is "green" based on a single environmental attribute.

Proof-Any environmental claim that cannot be substantiated by easily accessible supporting information, or a reliable third-party certification.

Vagueness-The sin of vagueness is committed by every claim that is so poorly defined or broad that its real meaning is likely misunderstanding by the intended consumers.

Irrelevance-The sin of irrelevance is committed by making an environmental claim that may be truthful but is unimportant.

Lesser of Two Evil-These are "green" claims that may be true within the product category, but that risk distracting the consumer from the greater environmental impacts of the category as a whole.

Fibbing-The sin of fibbing is committed by making environmental claims that are simply false (Terra Choice Environmental Marketing Inc, 2007).

GREEN MARKETING STRATEGIES

Environmental concerns have begun to reshape the landscape in which global organizations compete. The demand and influences of the environmental movement are evident in the dollar value size of the environmentally conscious marketplace. In addition, the growing regulatory concerns over the environmental impact of corporate practices have begun to influence corporate strategies (Ajay Menon & Anil Menon). Green marketing subsumes

green products as well as greening firms. In addition to manipulating the 4Ps of the traditional marketing mix, it requires a careful understanding of public policy processes. Firms can green themselves in three ways: value-addition processes (firm level), management systems (firm level), and /or products (product level). Greening the value-addition processes could entail redesigning them, eliminating some of them, modifying technology and or inducting new technology-all with the objective of reducing the environmental impact aggregated for all stages. Firms could adopt management systems that create conditions for reducing the environmental impact of value-addition processes. However, management systems' efficacy for greening value-addition processes is difficult to quantify if they are not accompanied by performance measures. The third green strategy pertains to products. This could take place in the following ways: repair, recondition, remanufacture, reuse, and recycle (Prakash, 2002). Traditionally, marketers focus on individual needs for designing/marketing products to best serve these needs. This approach is predicated on two assumptions. First, individuals are motivated by the promise that products will satisfy their needs at outlays acceptable to them. Second, individual actions do not have significant externalities (the divergence between public and private costs/benefits), positive or negative. The presence of externalities often instigates actions from the nonmarket environment, mainly in the form of governmental regulations. Unlike traditional marketers, social and societal marketers seek to persuade consumers to alter their behaviors that have significant externalities. However, these behavioral modifications may not directly/sufficiently benefit consumers or the benefits may also be non-excludable. Thus the challenges for social/societal marketers are complex (Prakash, 2002). For green marketers to be successful, they must target their audience when and where consumers are most receptive to green messaging (Hebard, 2008). To deal with uncertainty regarding such strategic issues, many corporate executives turn to scenario planning or even game theory to think about how the future competitive environment may unfold and how it may impact their companies. By doing so, corporate executives are, in effect, peering into the future to get a glimpse of what may come (Marketing Green, 2007). Ajay and Anil Menon suggested that the managers were asked questions along the following lines:

What sorts of environmental efforts are in use within our marketing strategy to consumers?

Why were these strategies adopted?

How widely are these strategies adopted or accepted in your company?

Would you classify your firm's strategy to be tactical or strategic or somewhere in between? Why?

What types of environmental marketing efforts require top management inputs?

Can you think of any low-level environmental marketing efforts requiring top management input? (Ajay & Anil Menon).

WHY FIRMS USE GREEN MARKETING: TRENDS AND INFLUENCES

These days, green marketers are challenged to efficiently reach consumers and effectively impact their attitudes and behaviors. There are many reasons for this of course: consumer attitudes are still evolving, familiarity with green products is just emerging purchase behavior is inconsistent within and across categories. As such, marketers tend to look for targetable demographic groups or behaviors that have a higher propensity for green (Konisky, 2008).

There are several important reasons for firms increased use of green marketing. Possible reasons are (Kim, 2005):

Business opportunities-Organizations perceive environment marketing to be an opportunity that can be used to achieve its objectives (Polonsky, 2002).

They may be trying to secure a competitive advantage in the market as an early mover on green (<http://marketinggreen.wordpress.com/p.6>).

Corporate social responsibilities-Organizations believe they have a moral obligation to be more socially responsible

(Polonsky, 2002).

Government influence- Governments want to protect consumers and society.

Competitive pressures-Competitors' environmental activities pressure firms to change their environmental marketing activities.

Cost issues and profits-Firms may also use green marketing in an attempt to address cost or profit related issues (Polanski, 2002).

Public awareness-The following list summarized in Exhibit 1 highlights some of the major environmental concerns or issues that have gained more public awareness and have had an impact on the decision by some organizations to go green or engage in green marketing.

Consumer attitude- If consumers favor firms with green policies or green products, green products and policies are motivating factors (Prakash, 2002). .

Public willingness to pay for green marketing-With increased awareness of environmental issues; consumers are more willing to divert some funds towards these issues. People love to talk about the environment, but they weren't going to pay 10% more for an environmentally friendly product (Neff & Thompson, 2007).

Increase Profitability-By choosing to reduce waste, and cut inputs into their production processes, companies can realize unexpected gains. Melitta Inc. introduced a line of unbleached coffee filters in 1989, today, unbleached filters account for 30% of the company's US sales. Unbleached filters, now account for 12% of the total US market, with Melitta holding a 52% share (Gillespie, 1992).

Based on the report (Stewart, 2006) was prepared by Emma Stewart, the specific potential opportunities are as follows; achieve cost-effective environmental managements; obtain regulatory goodwill; achieve regulatory certainty; transfer liability; increase real estate value; avoid project delays and work stoppages; ensure consistent supply; improve stakeholder relations and enhance branding; expand/maintain access to capital; contribute to economic development in emerging markets.

RISKS AND CHALLENGES OF GREEN MARKETING

Although there can be many benefits associated with a green marketing campaign, there can also be problems or challenges that can be of concern as well . Challenges can affect the organization in many forms including logistical problems or difficulties, when trying to implement a green marketing campaign. Problems and risks are indicated below:

Green is too expensive-Hybrid cars are pricier than their equivalent counterparts and require years of operation before you recoup that cost. How much green are we consumers willing to spend to go green? (Opdyke, 2007).
Difficulty in educating the consumer-The consumer is becoming more aware of environmental issues, due to increased media coverage about these issues and increased green marketing practices by business. Problems can occur when there is too much information and a lack of understanding by the consumer.

Green products don't work.

Consumers can't make a difference.

Consumers don't know where to start.

Complexity of green marketing campaigns:-Green marketing campaigns can be inherently difficult to implement and organize effectively. Green marketing is not just about putting out a message; it is about putting out a correct message, while backing up that message with facts.

Difficulty in integrating theory with business strategies-It is one thing to have a great theory about how green marketing can be used to benefit your organization, it is entirely another thing to actually successfully incorporate theory with strategy.

Ability to understand and follow all regulations and guidelines:-Lack of understanding can cause a company to make costly mistakes. Guidelines can also differ from country to country, making these issues even more complex (Reed Valentine, 2007).

Consumers are skeptical-It is easy to say you are green, but consumers are skeptical and confused over what it means to be green (Melillo and Miller, 2006).

Deceptive Environmental Marketing Claims-In the context of environmental marketing claims, such substantial will often require competent and reliable scientific evidence, defined as tests, analyses, research, studies or other evidence based on the expertise of professionals (Part 260-Guides for the Use of Environmental Marketing Claims, 15 USC.41-58).

Some studies show many consumers still imply don't care (a July 2006 study by Landor Associates) showed that 58% of the general population considers itself "not green interested." It's the 17% identified in Landor's study as "green-motivated" you need about (Opduke, 2007).

Green-Motivated- Some studies show many consumers still simply don't care (July 2006 study by Landor Associates showed that 58% of the general population considers itself "not green interested"). In today's age of blogs, word-of-mouth and protest e-mail blasts, it's the 17% identified in Landor's study as "green-motivated" you need to worry about (Ibid.).

Green is Another Cost of Entry-Hybrid cars are pricier than their equivalent counterparts and require years of operation before you recoup that cost—assuming you won the car long enough (The Wall Street Journal, 2007).

No High Level Solutions for Global Warming Changes-The challenges of marketers is not to develop products that require a high level of understanding of climate change. Rather, marketers need to develop "green" solutions that are easy to do, simple to understand and offer a tangible or emotional benefit to the consumer (Own, 2007).

Consumers are Confusing-As more companies adopt green campaign, consumers are growing increasingly confused over what it means to be "green," making it harder to create effective environmental marketing efforts (Melillo and Miller, 2006).

Consumers primarily buy products to meet direct needs, not to "save the planet" (Ottman and Terry, 1998).

Unexpected Governmental Actions-The risks businesses face from governmental action include: carbon taxes or constraints on operations, uncertainty regarding the nature, scope and timing of regulations, and multiple confusing and sometimes contradictory of regulatory approaches from one jurisdiction to another.

Another survey was done by Ezabela Janecka (July, 2007), almost half of all respondents cited "costs" as the key barrier to overcome when implementing green purchasing practices. Lack of environmental awareness on the part of suppliers, and insufficient green purchasing knowledge were considered major obstacles by 42% and 37% respectively. 16% of the respondents said they had to overcome difficulties in preparing environmental procurement specifications, and an equal number said they had to contend with a lack of corporate commitment to green procurement.

While businesses have a number of opportunities associated with engaging in environmental markets, there are also a number of risks (Stewart, 2006); High transaction costs and increased regulatory scrutiny; real estate-related risks and long-term value propositions; lack of guarantee and newness of regulatory markets vs. slowness of regulators; newness of regulatory markets vs. slowness of regulators; market fungibility for locally-specific commodities and public misinterpretation.

FURTHER RESEARCH

Understanding of green marketing is still in its infancy. Marketing scholars focus on a host of business strategy and public policy issues, including eco-labels and market segmentation, and the role of structural factors and economic incentives in influencing consumer behavior (Prakash, 2002). It is suggested that further research should focus more on analyzing a broad spectrum of green marketing issues including the external environment and performance. In addition, further research is needed to determine if there is moderating or mediating factors of the dangers and risks of pursuing green marketing. From a marketing academic perspective, more work in the area of costs and benefits of green marketing should be done for the firms to make long-term strategic choices. Finally, research efforts should be directed toward analysis of stakeholders' roles in green marketing.

CONCLUSION

“Going green” is not a fashion statement. Increasing numbers of customers all over the world are demanding eco-friendly products and services. Various authorities and industry watchdogs are also climbing aboard the eco-friendly bandwagon, introducing recommendations, regulations, and penalties for those who continue to contribute unnecessarily to pollution levels (Janecka, 2007). Also, environmental concerns have begun to reshape the landscape in which global organizations compete. The demand and influences of the environmental movement are evident in the dollar value size of the environmentally conscious marketplace. In addition, the growing regulatory concerns over the environmental impact of corporate practices have begun to influence corporate strategies. As the public becomes more aware of environmental issues, pressures to respond at the corporate and governmental level grow. It is clear that many firms are reacting. However, it is yet to be seen whether green marketing, on a larger scale, can really deliver the benefits some hope it can provide. The emerging consensus among business leaders is that the goals of social good and business success are no longer an either/or proposition but rather are very much interwoven. Indeed, the new emphasis on integrating environmental concerns into business planning is not only indicative of this consensus but also of the recognition that the environmental movement is in the marketplace to stay (Menon & Anil Menon, 1977).

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NCLB PART II: WHEN ADMINISTRATION INTERVENES: ISSUES RELATED TO MANAGEMENT OF THE FUNDED MVSU NCLB SUMMER READING INSTITUTE EMERGE

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Mississippi Valley State University has held an NCLB Summer Reading Institute for four consecutive years. The program data for the years of 2005 to 2007 supports positive outcomes. The results of the quantitative data of the year 2008 and the qualitative data from the interviews and the open-ended questions are confounded and tell a different story. What went wrong?

The objectives of this session are (a) to report the outcomes of the MVSU NCLB 2008 Summer Reading Program and themes and patterns of program evaluation, (b) to share a dilemma and its impact on the program, and (c) to provide informative tips to training programs in the area of program management.

Mississippi Valley State University provided the fifth year of NCLB Summer Reading Institute in June 2008. The goal and objective of the program is to improve Delta reading teachers' effectiveness in teaching reading. Twenty one in-service teachers from five school districts in the Central Mississippi Delta participated in a four-week intensive professional development program. Major activities include infusion of technology into daily instruction, reading for "the guys", detailed discussions on five components of reading, reading in the content area, and strategies to motivate students to read. Technology components included PowerPoint presentations, using excel as a grade book; making movies through windows movie maker, teacher web, smartboard, nettrecker, and kidspiration. The thematic units and individual lesson plans on teaching reading were developed and published on the MVSU NCLB website.

Unlike the previous years, the process of identifying and appointing reading consultants and staff for this year was influenced by the administration. The result of the intervention diminished the director's authority to appoint professionals who may have provided a more organized and structured lesson plan to achieve a better result.

An examination of Pre and Post-tests shows the consistency of improvement in the areas of knowledge and skills; however, interview and program evaluations show the satisfaction of the institute to be on the positive side of Fair on a four point scale of Poor to Very Good. Each participant was interviewed on the learning experiences at the end of the program. Evidence suggests that the goals and objectives of the program in the area of improving teachers' quality in reading were met, yet a more structured and organized program with less administrative intervention is needed for the future.

EFFECTS OF BLOGFOLIOS ON STUDENTS' PERCEPTIONS ON INTERACTION AND LEARNING

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ABSTRACT

The study gives an overview of portfolios development and blogs use in education. It presents a blogfolio approach for teaching and learning that incorporates advantages of both blogs and portfolios. In addition, this study examines the effects of using blogfolios on students' perceptions on interaction and learning. Specifically, the study attempts to answer two research questions: (1) What are students' perceptions on interaction before and after using blogfolios? (2) What are the effects of blogfolio activities on students' perceived learning?

INTRODUCTION

Technology integration often brings both opportunities and challenges to education. Among those opportunities and challenges, portfolio development and Web 2.0 use are two of most notable ones. Performance-based portfolios have been very popular in education. They offer numerous benefits: fostering self-assessment and reflection, providing personal satisfaction and renewal, providing tools for empowerment, promoting collaboration, and offering a holistic approach to assessment (Costantino & De Lorenzo, 2006). Many educators believe that performance-based portfolios are essential part of teacher education programs and courses. One commonly applied type of electronic portfolios is the Web-based portfolio, which is specifically created for and placed on the Web. Web-based portfolios have several unique advantages: (a) providing a means of storing multiple iterations over time and a mechanism for ease of editing and revisions, (b) allowing instant access from anywhere and at any time, and (c) providing structured presentation that allows a viewer to choose contents from one section to another based on his/her need or preference. While electronic portfolios are adopting in teacher education programs and courses, benefits of electronic portfolios, however, are not completely fulfilled. The question "electronic portfolios for whom?" has been raised. As Alyala (2006) argued, "the knowledge promoted under the guise of electronic portfolios is hardly student-centered. Very little research exists integrating student voices into the dialogue of electronic portfolios. The voices that are integrated are primarily those of administrators and some faculty" (p. 12). Such a dilemma of electronic portfolios "low" on student voices, particularly Web-based portfolios, may be considered largely due to the form of existing Web-based portfolios. Typical or "traditional" Web-based portfolios are mainly created from the static Web of yore. They require users to have the skills and knowledge of using Web authoring software and FTP clients, which can be daunting to many pre- and in-service teachers. Furthermore, these typical or "traditional" Web-based portfolios can only be read by viewers. They do not have the capability of allowing viewers to leave their feedback and therefore are limited for easy and instant collaboration (Yang, in press). Thus, reforming a new type of Web-based portfolio, which simplifies the technology part of publishing content and allows developers and peers to share resources and ideas for reflection and collaboration, is desired for current teacher education programs and courses.

Recent Web 2.0 applications such as blogs, wikis, social bookmarking, and podcasts, have emerged in a rich, interactive, user-friendly platform that allow users to read and also to write to the Web. As one of most widely used Web 2.0 applications, blogs or Weblogs are considered as the means that could reduce the technical barriers to effective Web publishing significantly (Martindale & Wiley, 2005). As Richardson (2006) noted, "in its most general sense, a weblog is an easily created, easily updatable website that allows an author (or authors) to publish instantly to the Internet from any Internet connection" (p. 17). These features make blogs very effective and attractive to users in two ways. First, a blog author can edit or update a new entry without much knowledge of programming, formatting, and FTP. Second, a blog is constantly comprised of reflections and conversations from author and viewers. It stimulates interaction (Downes, 2004; Martindale & Wiley, 2005; Richardson, 2006). As

Ganley (2004) noted, “weblogs, because of their flexibility, their public nature and their rich linking structure, can be a powerful tool in our pursuit of such a classroom. They allow us to visualize learning, contextualize course content, encourage meta-reflective practices, and practice collaboration.” However, despite of their huge popularity within our society, blogs are not widely and deeply explored in education. In fact, research suggests that blogs have not impressed educators. They doubt that blogs can promote thoughtful and measured response. Their view is that “blogging honors the impulsive, the careless, the superficial – anything goes: what matters is that you get a place to say whatever you like in public” (Ganley, 2004). As Downes (2004) indicated, “one of the criticisms of blogs, and especially student blogs, is that the students write about nothing but trivia” (p. 16). Hence, if the educational community is to accept blogs, it seems crucial to provide and share more constructive ideas on how the adaptation and implementation of blogs can impact real-world teaching and learning.

Accordingly, this study presented a blogfolio approach for student-centered instruction and learning that incorporates advantages of both blogs and portfolios. Specifically, the purpose of this study was to examine the impacts of using blogfolios on students’ perceptions of learning and interaction with instruction. This study attempted to answer the following research questions:

1. What were students’ perceptions on interaction (overall interaction, student-to-instructor interaction, and student-to-student interaction) before and after using blogfolios?
2. What were the impacts of the blogfolio approach on students’ perceived learning?

METHOD

The study involved a pretest/posttest design for students’ perception on interaction and a posttest only design for students’ perception toward the blogfolio approach.

Participants

The participants were 74 students enrolled in educational communications and technology classes from two state universities in the United States during the spring semester in 2008. Specifically, the participants were enrolled in the courses *Computer Applications in Education* (n=30) and *Seminar in Instructional Technology* (n=13) at a state university in the southern region of the United States and the courses *Portfolio Development and Professional Synthesis* (n = 13) and *Multimedia and Internet for Educators* (n = 18) at a state university of the northeastern region of the United States.

Instruments

To assess the impacts of performance-based course blogfolios on students’ perceptions of interaction and learning with instruction, all participants from the courses were requested to complete two surveys: (1) Interaction Survey and (2) Blogfolio Experience Survey. The Interaction Survey created by Sherry, Fulford, & Zhang (1998) was adapted for this study. This survey consisted of 14 items on which participants reported their views of the overall level of interaction, the level of interaction between the instructor and the class, and the level of interaction among the students. The Blogfolio Experience Survey was created by the researchers to measure the impacts of blogfolio approach on participants’ perceived learning. This survey consisted of 20 items on which participants reported their views of the blogfolio approach on logistic aspects (convenient, inexpensive, efficient, accessible, or maintainable), social interaction, self-reflection, learning process and outcome, etc. Both Interaction Survey and Blogfolio Experience Survey adopted a seven-point scale with 7 representing a strong agreement and 1 representing a strong disagreement for each item.

Procedure

A structure with four consecutive segments incorporating both portfolio development and blogging was designed and implemented in the courses. In the first segment, the concept and foundations for portfolio development were introduced. In the second segment, the features, components, applications, and resources of educational blogs were presented. In the third segment, a guideline and requirements of developing a progress-oriented course blogfolio were provided. In the last segment, students’ performance-based course blogfolios were

developed and accessible by their peers. Students engaged in continuous, thoughtful analysis of their learning in the course with reflections, evidence/assignments, and collaboration.

At the first week of the semester, each participant voluntarily completed the Interaction Survey. By the final week of the semester, each participant voluntarily completed the identical Interaction Survey, along with the Blogfolio Experience Survey.

RESULTS

Interaction

The descriptive results were presented in Table 1, 2, and 3. As indicated in these tables, participants stated very positive and favorable feelings toward overall interaction, learner-to-instructor interaction, and learner-to-learner interaction. In the comparison of pretest and posttest scores, as indicated in Table 1, one notable difference was found between respondents in pretest and posttest on item "The level of interaction between all participants is high." The mean for respondents in pretest was 5.65 (SD = 1.27) while the mean for respondents in posttest was 6.04 (SD = .91). This difference was significant ($p < .001$), which indicated that the participants through the blogfolio approach felt much stronger in connecting with their classmates. As shown in Table 3, similar results were also found on the level of learner-to-learner interaction. There were significant differences between pretest and posttest on items "There is little interaction between students." ($t = 2.10$, $p < .04$), "In class, students seldom state their opinions to each other." ($t = 2.57$, $p < .02$), and "Students seldom answer each other's questions." ($t = 2.14$, $p < .04$). Participants felt much stronger to oppose these three statements after they went through the blogfolio approach.

Table 1. *Perception of Overall Interaction*

Item	Pretest		Posttest		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
The level of interaction between all participants is high.	5.65	1.27	6.04	0.91	-2.00*
In general, the instructor is effective in motivating the students to interact in class.	6.15	1.03	6.10	1.27	0.30
Interaction is low in class.	2.40	1.27	2.26	1.30	0.62

* $p < .05$

Table 2. *Perception of Learner-to Instructor Interaction*

Item	Pretest		Posttest		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
The instructor frequently offers opinions to students.	5.78	1.10	5.90	1.19	-0.78
Students often state their opinions to the instructor.	5.58	1.03	5.78	1.04	-1.21
The instructor frequently asks the students questions.	5.97	1.07	5.90	1.22	0.43
Interaction between the instructor and the class is high.	5.82	1.16	5.93	1.25	-0.79
The instructor seldom answers the student's questions.	1.89	1.34	1.78	1.25	0.56
Students seldom answer questions that the instructor asks.	2.10	1.33	2.04	1.33	0.26
The students often ask the instructor questions.	5.63	1.12	5.79	0.95	-1.16

Table 3. *Perception of Learner-to-Learner Interaction*

Item	Pretest		Posttest		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
The students seldom ask each other questions.	2.68	1.58	2.42	1.50	1.01
There is little interaction between students.	2.10	1.21	1.75	1.05	2.10*
In class, students seldom state their opinions to each other.	2.56	1.58	1.96	1.04	2.57*
Students seldom answer each other's questions.	2.21	1.27	1.81	1.07	2.14*

* $p < .05$

Learning

The second research question explored the impacts of blogfolio activities on students' perceived learning. Percentage of each item was presented in Table 4. Participants' responses related to use of the blogfolio approach for learning were extremely encouraging on logistic aspects (convenient, inexpensive, efficient, accessible, or maintainable), participation and satisfaction, social interaction and communication, self-reflection, learning atmosphere, learning process, and earning outcome.

Table 4. *Aspects of Participants' Blogfolio Experiences*

Item	Percentage in a 7-point scale						
	1	2	3	4	5	6	7
The blogfolio simplifies the technology process of publishing portfolio content	0.0	2.7	4.1	2.7	16.4	41.1	32.9
My blogfolio allowed me to reflect my learning, post information and artifacts, and collaborate with others.	0.0	1.4	2.7	2.7	12.3	46.6	34.2
It was easy to organize materials, post reflections, upload artifacts, and create links to the artifacts in a blogfolio.	1.4	1.4	6.8	4.1	13.7	37.0	35.6
Creating a blogfolio was not as daunting a task as it may seem.	1.4	0.0	4.1	2.7	13.7	46.6	31.5
Creating a blogfolio was a fun and rewarding experience.	2.7	1.4	2.7	5.5	15.1	35.6	37.0
Developing a blogfolio allowed me to conduct self-reflection and self-evaluation of my learning.	1.4	0.0	1.4	8.2	15.1	32.9	41.1
Using a blogfolio to present artifacts helped in discussion and communications.	0.0	4.1	4.1	6.8	20.5	35.6	28.8
The blogfolio provided an easy way for peers to post their comments and suggestions.	0.0	1.4	5.5	6.8	12.3	39.7	34.2
Creating a blogfolio saved my time and money for printing and binding.	5.5	2.7	2.7	9.6	13.7	26.0	39.7
A blogfolio combines the best of solitary reflection and social interaction.	0.0	2.7	1.4	15.1	19.2	31.5	30.1
The quality of learning for developing a blogfolio was excellent.	1.4	1.4	1.4	6.8	15.1	41.1	32.9
I felt comfortable conversing through the blog for developing a portfolio.	1.4	0.0	4.1	16.4	5.5	38.4	34.2
Web-based education is an excellent medium for social interaction as demonstrated by developing a blogfolio.	1.4	0.0	2.7	11.0	16.4	38.4	30.1
Developing a blogfolio enabled me to build an online learning community as I was allowed to access and comment others' blogfolios.	1.4	1.4	4.1	12.3	16.4	34.2	30.1
The instructor created a feeling of online community during the portfolio development.	1.4	1.4	4.1	11.0	15.1	35.6	31.5
I felt comfortable participating in developing a blogfolio.	0.0	0.0	2.7	5.5	19.2	31.5	41.1
The blogfolio development was facilitated by	1.4	0.0	1.4	9.6	4.1	42.5	41.1

the instructor.								
I felt comfortable interacting with other participants during the blogfolio development.	0.0	0.0	0.0	8.2	15.1	38.4	39.4	
My point of view was acknowledged by other participants during the blogfolio development.	0.0	0.0	0.0	15.1	19.2	35.6	30.1	
I was able to form distinct individual impressions of some course participants during the blogfolio development.	2.7	0.0	0.0	5.5	16.4	46.6	28.8	

Note. A seven-point scale was provided for each item. 1 = Strongly disagree; 2 = Disagree; 3 = Somewhat disagree; 4 = Neutral; 5 = Somewhat agree; 6 = Agree; 7 = Strongly agree.

CONCLUSION

The Web is shifting from being a medium, in which information is transmitted and consumed, into being a platform, in which content is created, shared, remixed, repurposed, and exchanged. The unique feature of the blogfolio is that incorporates advantages of both blogs and portfolios. The effectiveness of the blogfolio approach on student-centered teaching and learning, interaction and communication, and reflection, has been examined and confirmed in this study. It should be noted that the participants were selected by the way of convenience sampling because the researchers for this study were also the instructors of the courses, caution in generalizing to other populations and additional research are called for.

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INFLUENCES ON FEMALE INTEREST IN PURSUIT OF STEM FIELDS IN HIGHER EDUCATION

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ABSTRACT

While some gains have been made in attracting female students to the STEM (science, technology, engineering and math) fields over the past decade, numbers of females who have chosen to pursue these fields in higher education are still limited. This study reviews factors that influence rural high school students to consider career options in the fields of science, technology, engineering and math (STEM). It examines 61 high school students (32 male and 29 female) involved in a summer Information Technology Experiences for Students and Teachers (ITEST) program funded by the National Science Foundation. The students in attendance were nominated by their respective high school as demonstrating potential skills in the STEM areas; but, because of gender, minority status and/or financial issues might not choose to pursue these careers options as young adults. During the course of the program, students were asked to provide information on factors such as peer influences, family, school, and media that they felt were influential in their consideration of viable careers. Students were also asked about their likelihood of taking higher level math and science courses in high school beyond the normal requirements. Comparisons in student responses were made with respect to the students' gender. While many areas assessed were consistent across gender, some notable differences were observed. Better understanding of why these discrepancies exist is critical to help guide interventions to improve STEM access for women and in particular rural areas needing economic development.

INTRODUCTION

While overall gains have been made in increasing the number of women pursuing careers in the STEM fields, a significant discrepancy still exists between men and women choosing to pursue a degree and subsequent employment in these fields (National Science Foundation, 2004). For example, according to the National Science Board's (2008) Science & Engineering Indicators Report, women received only 20% of bachelor's degrees awarded in engineering and 22% of those in computer sciences in 2005. Women now make up over half of the students entering colleges, but the number of women choosing to major in various STEM fields is still very low overall (National Science Foundation, 2005). In addition, women who enter college declaring they plan to major in the STEM fields hold a higher attrition rate in comparison to their male counterparts (Bureau of Labor Statistics, 2006; Committee on Equal Opportunities in Science and Engineering, 2000; Cuny & Aspray, 2000). When employment figures are assessed, the number of women entering the workforce in these areas is even lower (National Science Board, 2003). National concerns have been raised about the potential shortage of well-trained professionals in the areas of math and science in the United States (Bureau of Labor Statistics, 2006; National Science Board, 2004).

Research has indicated a wide array of factors may influence students' interest in career options as well as in pursuing a higher education degree (Harris & Halpin, 2002; Kekelis, Wepsic, & Heber, 2005). These factors include parents and family (Eccles, 1997; Epstein, 1992; Haverman & Wolfe, 1995; Windham, 1996), teachers and counselors (Howe, 1997; Lumsden, 1997; Terenzini et al., 1994), friends and peer groups (Davies, Spencer, & Steele, 2005) as well as the popular media (Walton & Cohen, 2007). A sense of belonging and seeing a good fit between a discipline and oneself can make a difference in students' career choices. Walton and Cohen (2007) have researched how belonging uncertainty undermines motivation and achievement among college students. Factors such as having friends in the same discipline and establishing a mentoring relationship with a teacher in a particular discipline can foster a sense of social belonging which in turn impacts achievement. Kekelis et al. (2005) also note the importance of career guidance and support in order to encourage young females to participate in programs that expose them to technology. They recommend hands on exposure to technology – and as early as possible, challenging girls' stereotypes of technology fields, and providing better opportunities and information for girls to explore technology careers with their parents support.

The NSF ITEST grant proposal on which this study is based was developed in part to help encourage students from rural areas in a southeastern state to pursue higher level math and science courses through hands-on learning activities in their high school curriculum. In addition to providing training and resources to local area teachers, a student summer academy was also developed. High school students were brought to the university campus for a three week summer academy with a focus on hands-on experience with robotics, solid modeling, biomechanics, Excel, and leadership. The academy targeted underrepresented students including minority and female students who demonstrated ability based on teacher recommendations and prior course performance to do well in STEM fields but who might not have considered these fields as career options.

Given the issues of attracting and retaining women in the STEM fields, this paper focuses on looking at factors that might influence female high school students to consider various STEM career options in comparison to their male counterparts during the academy. Three specific questions relative to gender were asked. Were there gender differences in factors students reported as being influential in their consideration of career options? Did the academy influence female students to consider taking more advanced science and math courses at the high school level? Did participation in the summer academy serve to increase the interest of female students in pursuing careers in science, engineering, and information technology?

METHOD

Participants

Sixty-one high school students ranging in age from 12 to 18 (mean age of 15) were extended invitations to attend the ITAS Academy and ranged in grade from freshman to senior. Fifty-five students were in actual attendance for the entire three weeks of the academy. Two students were unable to attend after accepting the invitation (one male and one female adolescent) and four students (two male and two female adolescents) left prior to the end of the three-week academy. Of the 55 students in attendance, 26 were female (47%) and 29 were male (53%). The race/ethnicity of the students attending was 20 white (36%) and 35 minority (64%).

Instruments

Three specific questionnaires developed as part of the grant were used to ascertain if there were differences between female and male students in factors that influenced consideration of course and career options. The questionnaires focused on: 1) specific influences on career choices; 2) the likelihood of students taking advanced courses in math and science as a high school student; and 3) the student's interest in career options related to the STEM fields.

Procedure

As part of the academy, students were asked to complete a questionnaire based upon factors they felt influenced their likelihood of considering various career options. These factors included factors such as friends, peers, parents, teachers, counselors, the media, degree options, earning potential and affordability of college program. This questionnaire was administered toward the end of the second week of the academy. Students were

also asked to indicate which courses in math and science they planned to take in high school both before and after completing the academy. Finally, students were asked to indicate their interest in career options related to the STEM fields prior to and after participating in the three-week academy.

RESULTS AND DISCUSSION

Part A of the first questionnaire asked students to rate 10 factors that might influence their willingness to consider a specific career choice on a scale of one to five with one being no influence and five being a very strong influence. When t-tests were computed on each of the factors to determine if gender differences existed in responses, no significant factors emerged based on gender. There were no significant differences between male and female students' ratings of the influence of any of these 10 factors. Means and standard deviations are presented in Table 1. Both male and female students rated fitting with their own interests, earning potential of a field, their parents, and the encouragement of a good teacher as being important in influencing their thinking about future career choices. As can be seen in Table 1, some areas were rated slightly higher by female than male students, but the differences were not significant.

Table 1. Analyses of Variance for 10 Factors of Influence on Career Options

Source	Male Students		Female Students		
	Mean	SD	Mean	SD	p
Part A: How much you feel each of following influences your thinking about future career options?					
Friends	2.96	1.16	3.15	1.29	.50
Parents	4.11	1.22	4.62	0.57	.10
Teacher	3.81	1.04	4.27	0.78	.10
Negative teacher	2.00	1.33	1.69	1.01	.29
Cost of degree	3.59	1.42	3.54	1.36	.84
Time to degree	3.00	1.39	3.12	1.24	.83
Earning potential	4.22	0.97	4.08	1.13	.60
Interests in area	4.41	0.97	4.73	0.60	.22
Stay in region	2.41	1.34	2.54	1.39	.76
Media	2.63	1.31	2.65	1.16	.91
Part B: How important are the following in the interests you have?					
Friends with same interests	3.15	1.46	3.23	1.07	.83
Same-sex friend with same interest	2.59	1.28	2.69	1.16	.82
Someone in family					

in a specific field	2.70	1.27	3.15	1.29	.24
Teacher encourages me to think about a particular field	3.70	1.33	3.85	1.19	.74
Someone at school knowledgeable about different career options	3.74	1.32	4.31	1.01	.08

Part B of the first questionnaire asked students to rate five additional areas in terms of importance in influencing their career interests. When t-tests were run on each of these items to determine if gender differences existed, none of these factors emerged as significant. Both male and female students rated each of the five factors in a similar way. Having a friend with the same interests was rated as slightly more influential in considering a career choice for female students as for their male counterparts, but this difference did not reach significance. The two areas that were rated as being most influential for both males and females were having a teacher who encouraged them and having someone at their school that was knowledgeable about different careers. Having someone at the school who was knowledgeable about different career options was rated higher by female students, but the difference between male and female students did not reach significance. However, student ratings on this item did indicate the need to have knowledgeable school personnel, such as guidance counselors, who can present and encourage students to consider various career options.

On the second questionnaire, students were asked to indicate which advanced math and science courses they planned to take during their high school careers. Results for this question, posed both prior to beginning the summer academy (pre-academy) and at the end of the academy (post-academy), are provided in Table 2. The courses listed on the questionnaire are part of the North Carolina High School Curriculum. A large percentage of

Table 2. Student Plans to Take Math Courses – Pre- to Post-Academy Comparisons

I plan to take...	Pre-Academy (n)	Post-Academy (n)	Have taken (n)	Improvement Pre- to Post- Plan
Algebra I	10.5% (6) m = 10.3% f = 11.5%	24.6% (14) m = 33.3% f = 25.0%	94.7% (54) m = 93.1% f = 96.2%	m = 23.3% f = 13.5%
Algebra II	61.4% (35) m = 58.6% f = 61.5%	68.4% (39) m = 79.2% f = 75.0%	33.3% (19) m = 34.5% f = 30.8%	m = 20.6% f = 13.5%
Geometry	36.8% (21) m = 37.9% f = 30.8%	35.1% (20) m = 41.7% f = 37.5%	54.4% (31) m = 58.6% f = 53.8%	m = 3.8% f = 6.7%
Pre-calculus	61.4% (35) m = 62.1% f = 61.5%	59.6% (34) m = 75.0% f = 66.7%	12.3% (7) m = 20.7% f = 3.8%	m = 12.9% f = 5.2%
AP Calculus	50.9% (29) m = 62.1% f = 42.3%	50.9% (29) m = 66.7% f = 45.8%	0.0% (0) m = 3.4% f = 0%	m = 4.6% f = 3.5%
AP Statistics	22.8% (13)	19.3% (11)	1.8% (1)	

	m = 20.7% f = 19.2%	m = 20.8% f = 12.5%	m = 0% f = 3.8%	m = 0.1% f = (6.7%)
Advanced Functions	26.3% (15) m = 17.2% f = 34.6%	28.1% (16) m = 20.8% f = 45.8%	0.0% (0) m = 0% f = 0%	m = 3.6% f = 11.2%
Discrete Math	3.5% (2) m = 3.4% f = 0%	1.8% (1) m = 4.2% f = 0%	0.0% (0) m = 0% f = 0%	m = 0.8% f = 0%

both male and female students indicated they were planning to take Algebra I, Algebra II, Geometry and Pre-Calculus, if they had not already done so (some students did not differentiate clearly between courses they had taken and those they were planning to take so the total percentages may exceed 100% in some cases). Based on student responses, the percentage of students indicating they were going to take these four courses increased after completing the academy. A noticeable difference in the percentage of female students indicating they planned on AP Calculus was found compared to their male counterparts: Both values increased for each gender group from pre- to post-academy, but the difference was the most notable of all courses between genders – with approximately 20% more males than females planning to take AP Calculus both pre and post-academy. Surprisingly, the number of female students indicating they were planning on taking AP Statistics actually dropped post-academy. Only a small percentage of male students indicated the likelihood of taking Discrete Math, and no female student indicated this would be an option she would pursue. This much lower percentage may have also been due to a lack of student understanding of the definition of Discrete Math, or the ability to offer this course in many rural school systems due to limited resources.

When asked about science courses they planned to take, the high school students indicated they were more likely to take the majority of the courses after the academy rather than before, as shown in Table 3. However, responses for certain courses indicate a large male- female difference existed between those who reported they

Table 3. Student Plans to Take Science Courses – Pre- to Post-Academy Comparison

I plan to take...	Pre-Academy (n)	Post-Academy (n)	Have taken (n)	Improvement Pre to Post Plan
Physical Science	35.1% (20) m = 41.4% f = 30.8%	38.6% (22) m = 34.6% f = 44.0%	49.1% (28) m = 51.7% f = 46.2%	m = (6.8%) f = 13.2%
Biology	45.6% (26) m = 44.8% f = 46.2%	42.1% (24) m = 42.3% f = 52.0%	45.6% (26) m = 42.9% f = 50%	m = (2.5%) f = 5.8%
AP Biology	17.5% (10) m = 20.7% f = 11.5%	29.8% (17) m = 30.8% f = 24.0%	3.5% (2) m = 3.4% f = 3.8%	m = 10.1% f = 12.5%
Chemistry	66.7% (38) m = 62.1% f = 73.1%	59.6% (34) m = 61.5% f = 72.0%	10.5% (6) m = 10.3% f = 11.5%	m = (0.6%) f = (1.1%)
AP Chemistry	12.3% (7) m = 17.2% f = 11.5%	28.1% (16) m = 26.9% f = 32.0%	0.0% (0) m = 0% f = 0%	m = 9.7% f = 20.5%
Environmental	8.8%	17.5%	1.8%	

I plan to take...	Pre-Academy (n)	Post-Academy (n)	Have taken (n)	Improvement Pre to Post Plan
Science	(5) m = 6.9% f = 11.5%	(10) m = 19.2% f = 20.0%	(1) m = 51.7% f = 65.4%	m = 12.3% f = 8.5%
AP Environmental Science	8.8% (5) m = 10.3% f = 7.7%	8.8% (5) m = 15.4% f = 8.0%	1.8% (1) m = 3.4% f = 0%	m = 5.1% f = 0.3%
Physics	35.1% (20) m = 34.5% f = 38.5%	35.1% (20) m = 26.9% f = 52.0%	8.8% (5) m = 13.8% f = 3.8%	m = (7.6%) f = 13.5%
AP Physics	12.3% (7) m = 17.2% f = 3.8%	24.6% (14) m = 34.6% f = 20.0%	0.0% (0) m = 0% f = 0%	m = 17.4% f = 16.2%
AP Physics B	1.8% (1) m = 3.4% f = 0%	7.0% (4) m = 7.7% f = 4.0%	0.0% (0) m = 0% f = 0%	m = 4.3% f = 4.0%
AP Physics C	1.8% (1) m = 3.4% f = 0%	3.5% (2) m = 3.8% f = 4.0%	0.0% (0) m = 0% f = 0%	m = 0.4% f = 4.0%

would be interested in taking certain courses. While both groups indicated a high likelihood of taking Biology, a notable increase in the percent of females who indicated they would likely take AP (Advanced Placement) Biology occurred after the academy. While an overall increase was noted in Environmental Science and AP Environmental Science, the number of students reporting they might take these courses was low in comparison to other science courses. Part of this may again be related to limited options for electives within certain school systems. A notable increase was seen in female students indicating they would take Physics post- academy. A slight drop occurred in the number of male students indicating they would take Physics from pre- to post-academy, but the number of male students indicating the likelihood of taking AP Physics after the academy increased. An increase in number of students considering taking AP Physics was seen for both male and female students.

Based on Table 2 and 3, the academy seemed to have a positive impact on encouraging high school students to consider upper level math and science courses, but differences based on gender were also observed – most notably with 20% more males than female adolescents planning to take AP Calculus both pre- and post-academy.

The third questionnaire asked students to indicate their interest in the fields of science, engineering and information technology both pre- and post-academy. Students rated their interest on a four-point Likert scale ranging from 1 (not at all) to 4 (a lot). A repeated measure design was used to determine if significant differences existed pre- vs. post-academy for student reports on each one of these career options. Gender was the between subject variable; pre- and post-academy ratings on interest in each of the three career fields served as within subject variable. As shown in Table 4, the academy provided a significant increase in student interest in pursuing a science

Table 4. Level of Self-Reported Interest in Working in Science, Engineering, and Information Technology

Source	df	Mean Square	F	p	Partial Eta Squared

Science					
Gender(A)	1	0.34	0.22	.64	.00
Error	50	1.57			
Pre-Post Academy(B)	1	1.89	5.51	.02*	.09
A x B	1	0.01	0.01	.92	.00
Error	50	0.34			
Engineering					
Gender(A)	1	7.76	4.83	.00*	.09
Error	50	1.61			
Pre-Post Academy(B)	1	1.02	3.33	.07	.06
A x B	1	0.67	2.20	.14	.04
Error	50	0.31			
Information Technology					
Gender(A)	1	0.37	0.30	.59	.01
Error	50	1.24			
Pre-Post Academy(B)	1	3.06	5.87	.02*	.11
A x B	1	0.24	0.46	.50	.01
Error	50	0.52			

career; but a significant effect was not realized between subject effect for gender, nor was a significant interaction effect found for gender by pre- post-academy. Overall, both male and female students reported an increased interest in the possibilities of a career in science after completing the academy. Means and standard deviations are presented in Table 5.

Table 5. Pre- and Post-Academy Means and Standard Deviations by Gender for Level of Self-Reported Interest in Working in Science, Engineering, and Information Technology

Source	Pre-Academy		Post-Academy	
	Mean	SD	Mean	SD
Science				
Male Students (27)	2.93	0.92	3.19	0.96
Female Students (25)	2.80	1.04	3.08	0.99
Total (52)	2.87	0.97	3.13	0.97
Engineering				
Male Students (27)	3.15	0.99	3.19	1.04
Female Students (25)	2.44	0.91	2.80	0.96
Total (52)	2.81	1.01	3.00	1.01
Information Technology				
Male Students (27)	2.41	0.93	2.85	0.99
Female Students (25)	2.63	0.97	2.88	0.85
Total (52)	2.51	0.95	2.86	0.92

Next, students were asked to indicate their interest in pursuing a career in engineering pre- and post-academy. A significant main effect for gender resulted, with male students indicating a higher likelihood of

pursuing a career in engineering than females. A significant effect was not found within subject effect for pre-/post-academy, nor was there a significant interaction effect for gender by pre-/post-academy. Male students came into the academy indicating a stronger likelihood of pursuing engineering as a career in comparison to their female counterparts, and this was also the pattern at the end of the academy as well. Changes in ratings of interest in pursuing this career option did not vary significantly from pre-/post-academy assessment.

The last area assessed was students' likelihood of pursuing a career in information technology. Neither a significant main effect for gender, nor a gender by pre-/post-academy interaction was seen. However, a significant within subject effect for pre-/post-academy was present. Both males and female students who attended the academy reported more likelihood of pursuing a career in information technology at the end of the academy in comparison to their reported interest in this field at the beginning of the academy.

The results from the first year of three for this ITEST program conducted for the rural area students indicates a strong influence of the summer academy on both male and female students. Future years will also be evaluated and compared as both the program improves, and exposure to and awareness of the program expands in the rural community. It is desirable to track the former participants to determine if the program does not just have an impact on their interest and high school course selection, but on their choices to go to college as well as to pursue a career in a STEM field. Markowitz (Knox, Moynihan, & Markowitz, 2003; Markowitz, 2004) successfully tracked outcomes for an ongoing summer science academy, and both short and long term program data established that their academy had a positive impact on most of the students who participated. The program also suggested an annual follow-up of all past participants for accuracy of a time point-from-program-completion comparison, and noted the difficulty in locating former program participants. Future study of this ITEST program outcome warrants this follow-up investigation as well, especially to determine if the impact on female participants is significant to their career choices.

CONCLUSIONS

Based on the pre- and post-academy assessments executed to evaluate students' interest in taking math and science courses, as well as their interest in pursuing science, engineering or information technology careers, the academy increased student interest in the preparation for STEM fields, regardless of gender. One most prevalent statistic was the difference in plan of males versus females to take AP Calculus, with 20% more males planning to take the course over females both pre- and post-academy. This was consistent with results that indicated male academy students held a stronger interest in pursuing engineering over females. Females notably had an increased interest in AP Biology after the program, which had a strong Biomechanics educational component along with the opportunity to observe a surgical robot in action. So, to address the specific questions pursued in this investigation: (1) Were there gender differences in factors students reported as being influential in their consideration of career options? Significant gender differences were not found in regard to influences on career options. Both males and females rated most influential a teacher who encouraged them and someone at their school that was knowledgeable about different careers. Parents were also rated by both female and male students as being influential in future career choices. Perhaps, as Kekelis et al. (2005) noted, parents should take a more active role in guiding choices in technology fields especially for girls. (2) Did the academy influence female students to consider taking more advanced science and math courses at the high school level? Yes, the academy was successful in increasing female interest, most prevalent possibly in a biology-related field from the strong increase in female students plan to take AP Biology. (3) Did participation in the summer academy serve to increase the interest of female students in pursuing careers in science, engineering, and information technology? Yes, the academy did accomplish this task. However, a significant difference still exists in the desire of male students over female students in pursuing a career in engineering. So, work must continue towards attracting female students into engineering in order to increase the current 9% of females working in engineering fields.

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ASSESSING HUMAN RESOURCE MANAGEMENT-SPECIFIC KNOWLEDGE VIA AN E-MAIL IN-BASKET EXERCISE

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ABSTRACT

Due to a renewed emphasis on outcomes, business professors are expected to be more actively engaged in assessment. The purpose of this paper is to assist in this endeavor by validating an e-mail in-basket exercise for the assessment of human resource management-specific knowledge, using a sample of 61 undergraduate business students. Our study indicates that students in an upper-level human resource management course significantly outperformed students in the introductory human resource management course. This demonstrates that the exercise measures knowledge acquired and/or reinforced beyond the introductory course. As is the case with other business disciplines, the core content of the human resource management course does not vary dramatically across the country. This means that other professors should feel free to use this exercise to assess the acquired knowledge of the students in their undergraduate human resource management programs. We also offer practical advice on grading this exercise and on administering it electronically.

INTRODUCTION

The academic responsibilities of the modern business professor have been expanded to include more formal assessment of learning outcomes. Assessment cuts across the three traditional academic work areas of teaching, research, and service. It adds to our teaching responsibilities by requiring us to develop new tests for purposes that are not directly related to the specific courses we are teaching at that moment. It increases our service burdens through participation in accreditation-driven assessment-related committees, teams, and task forces. But it creates new research opportunities, because the core content of most business courses does not vary dramatically across the country. This means that if one group of professors has developed and validated an assessment device, their results are of interest to other professors who can be spared the time and trouble of developing their own assessment devices.

In this paper, we share an e-mail in-basket exercise for the assessment of human resource management-specific knowledge. "Management-specific knowledge" is the unfortunate term chosen by the Association to Advance Collegiate Schools of Business (AACSB) to describe information that is necessary for success in a particular business-related field. So a detailed understanding of the capital gains tax system might qualify as "management-specific" knowledge for an Accounting major, because the other business majors may need only a cursory understanding of this concept.

We measure human resource management-specific knowledge, which refers to information that we expect our human resource management majors to acquire so that they can succeed in their chosen field after graduation. For example, since all managers participate in interviews, it would be nice if every business student understood the deficiencies of the unstructured interview. We can't require every business student to learn about interviews, but we would expect our human resource graduates to know that structured interviews are superior so that they can advocate for their employers' usage of structured interviews. Accordingly, one of the questions in our exercise can

only be answered correctly by students who understand that unstructured interviews are little better than flipping a coin when it comes to rank-ordering job candidates.

DEVELOPMENT OF THE E-MAIL IN-BASKET EXERCISE

Our undergraduate human resource management program follows a traditional model and includes a standard set of courses. There is an introductory class, Management of Human Resources, and it serves as the prerequisite to the other four required courses: Management of Compensation, Legal Aspects of Human Resources, Recruitment and Selection, and Labor/Employee Relations. Upon completion of the introductory class, the other four required courses may be taken in any sequence. For assessment purposes, it would be easier if we had a capstone course for which all of the other human resource courses would serve as prerequisites. But there is no compelling pedagogical reason to create such a course, since we already have a senior-level capstone Business Policy course that is required of all business majors.

The co-authors of this paper were charged with developing a management-specific assessment device for the undergraduate human resource management program. The College administration favored multiple-choice tests for assessment purposes because they provided easy quantification of results. We considered such a test to be too unimaginative and unrealistic, so we created an e-mail in-basket simulation. In the simulation, the student is asked to read twenty "e-mail messages." For each message, three response choices are offered: a) respond immediately, indicating that you **agree** with the sender's message; b) respond immediately, indicating that you **disagree** with the sender's message; or c) don't respond immediately.

We created an initial set of twenty simulated e-mail messages and pilot-tested it for two semesters in the Recruitment and Selection course. Five messages each were based on concepts that were taught and/or reinforced in the four advanced human resource courses. During the pilot test phase, we modified questions with extremely low rates of correct answers. Low rates of correct answers can occur for one of three possible reasons: a) the students do not understand the concepts that they need to apply in order to correctly answer the question; b) the answer key is wrong; or c) the question and/or some of the responses are confusing or misleading. By refining the questions and responses, we could eliminate the latter two factors as causes of the low scores. By the third semester, we were confident that we had developed a good set of questions. The complete exercise appears in the Appendix to this paper.

VALIDATION OF THE E-MAIL IN-BASKET EXERCISE

Does the e-mail in-basket exercise measure concepts that are developed and/or refined in the upper-level courses, or does it simply assess the students' comprehension of the material in the introductory course? We validated the exercise by administering it over one academic year in two sections of the introductory Management of Human Resources course (n=40 students) and in two sections of the upper-level Recruitment and Selection course (n=21 students). If we have developed a valid exercise, the following hypothesis should be confirmed:

H1: For the e-mail in-basket human resource exercise, students in the upper-level course will outperform students in the introductory course.

At this point, we must address the issue of scoring the exercise. Our big problem is that the third response option, "don't respond immediately," is never the best answer. One potential solution is to remove the third option and require students to respond to all emails. The main advantage of this solution is that observed scores will be higher since the students now have only two options for each email. This will increase the likelihood that we can find a statistic that "proves" that the students are grasping the material. The main disadvantage of this solution is that the resulting exercise doesn't look like an in-basket exercise any more, as any in-basket exercise would include a "do not respond immediately" option. So realism is sacrificed in order to boost test scores, contrary to the philosophy of assessment.

A second solution is to always grade the "don't respond immediately" option as being incorrect. The main advantage of this solution is that, in our opinion, that option was never the best response. Therefore, this scoring system should be more accurate. The main disadvantage of this solution is that it artificially depresses the test scores. That is because the students will sometimes choose the third option assuming that it must sometimes be

correct or else we wouldn't have offered it as a response choice. In fact, forty-eight of the students (79% of all subjects) chose the third option at least once.

A third solution retains the realism of the in-basket exercise but attempts to correct student score deflation caused by our provision of an always incorrect response choice. In this, we grade the "don't respond immediately" option as being incorrect if the best answer was to "respond immediately, indicating that you **disagree** with the sender's message." If the e-mail message calls for a swift and negative response, it cannot be a good idea to ignore the message. However, we grade the "don't respond immediately" option as being correct if the best answer was to "respond immediately, indicating that you **agree** with the sender's message." If the e-mail message calls for a positive response, then a non-response could send an equivalent message of tacit approval. The sender knows that the message was sent; therefore the sender may feel empowered to proceed after giving the recipient adequate time to voice any objections.

The reader may choose any of these grading options, as they are all logically defensible. The test scores provide an imperfect measure of human resource knowledge no matter how they are graded. To validate our exercise, we analyze the "raw" and "adjusted" scores corresponding to the second and third grading systems. Under the second system, the "don't respond immediately option" is never correct. Under the third system, the "don't respond immediately option" is correct only if the best answer was "respond immediately, indicating that you **agree** with the sender's message."

The raw score analysis supported Hypothesis One. Specifically, the mean raw test score for the 21 students in the upper-level course was 13.62 (s.d. = 2.13) and the mean raw test score for the 40 students in the introductory course was 11.88 (s.d. = 2.95). This difference in means was significant at $p < .05$ ($t = 2.40$). The adjusted score analysis also supported Hypothesis One. Specifically, the mean adjusted test score for the 21 students in the upper-level course was 14.38 (s.d. = 1.72) and the mean adjusted test score for the 40 students in the introductory course was 12.90 (s.d. = 2.65). This difference in means was also significant at $p < .05$ ($t = 2.64$). With three response options and 20 questions, the chance success rate would have been 6.67. So the students seem to have taken this test seriously because their mean test scores greatly exceeded chance levels.

Could it be that the students in the upper-level course were more gifted than the students in the introductory course? To address this issue, we compared the course grades in the introductory course for the two groups of students. We converted letter grades to their numerical equivalent using the four point system, and introductory course grades ranged from A (4.0) to D (1.0). In fact, the mean introductory course grade for the 21 students in the upper-level course was 3.13 (s.d. = .68). The mean introductory course grade for the 40 students in the introductory course was 3.33 (s.d. = .67). This difference in means was not significant ($t = 1.08$). So there is no evidence to indicate that the students in the upper-level course were better than students in the introductory course, except in terms of their test scores. We can conclude that the test measures course content that was first presented and/or reinforced in the upper-level human resource courses.

CONCLUSIONS

Few people enjoy assessment. In addition to our in-basket exercise we were required to develop a multiple-choice test with over 100 questions to measure our students' learning according to several of AACSB's broad standards such as "ethical understanding and reasoning abilities" and "multicultural and diversity understanding." How did we keep our sanity and produce an assessment device that could be useful to other professors? First and foremost, we stood up to power when we had to. A university's assessment gurus can abuse their expert power and make pronouncements that go beyond the accreditation requirements, in the hopes that nobody will actually sit down and read the published standards. The AACSB standards are easily accessible and make it clear that the purpose of accreditation is to support teaching rather than to devour it. So when our assessment gurus demanded that we establish a capstone human resource course in order to better assess our students' management-specific knowledge, we refused.

Of equal importance was our focus on the true purpose of assessment. We don't assess for public relations purposes. This removes the temptation to boost our test scores through a combination of rewards and coercion. We also don't assess in order to point the finger at individual faculty members. It is the joint responsibility of all faculty who teach in this area to clarify concepts that appear to be poorly understood. Therein lies the potential usefulness of this exercise. Now that it has been developed and validated, we are ready to diagnose performance issues as reflected in generally poor answers to selected questions. Should we observe future improvements in the responses to these questions, we will have successfully closed the feedback loop.

We encourage other professors to adapt this exercise to their own needs. The human resource core is consistent across the United States. For example, our tenth question can only be answered correctly by a student who understands that commission-based salespeople are exempt from the Fair Labor Standards Act. This exemption applies in all fifty states. So there is no reason for professors at other universities to start from scratch when it comes to the development of an assessment device for human resource management-specific knowledge. The less time that they can spend on assessment, the more energy they will have for more stimulating academic pursuits.

Our assessment device is not administered online. Instead, students circle the correct answers on a form which is then scanned to provide almost instant results. There are several advantages to giving this test online, not the least of which is that it would become more realistic since it is after all an e-mail in-basket simulation. An online test would also be more environmentally friendly than our print version. One feature of online testing should not be exploited, and that is the ability to offer instant feedback. If students learn the correct answers, they can tell their friends. Furthermore, feedback would make it impossible to validate the test by comparing the performance of introductory and upper-level students. Student feedback should be limited to test scores with no further discussion of responses to individual questions.

Having made it almost all the way through the assessment experience, we can ask ourselves whether it was all worth it. The answer is a qualified "yes." We developed and validated an assessment device that can be used by others in our field, and we will now start using it to improve our own teaching. But we spent dozens of person-hours in windowless rooms sitting around tables reviewing one multiple-choice question after another, and the effect was a lot like working on an assembly line. The assessment process must be humanized and rationalized in order to avoid a predictable backlash against what can be a fruitful endeavor.

APPENDIX: HR IN-BASKET EXERCISE

You have just started a new job, as Vice President of Human Resources. Some but not all of the company's facilities are unionized. You have just been given the password to your email account, but you already have twenty messages from company employees in your inbox. You have thirty minutes before you need to catch a flight to a month-long executive wilderness retreat at which you will have no access to your email. You need to read the messages, and for each one you need to do one of the following: a) respond immediately, indicating that you **agree** with the sender's message; b) respond immediately, indicating that you **disagree** with the sender's message; or c) don't respond immediately. The messages are as follows:

- 1) I'm conducting an investigation into possible employee theft at our unionized factory. I want to ask one of the employees if he is the thief, but he insists that he won't answer any of my questions unless a representative from the union is in the room. I am going to tell him that if he doesn't answer my questions he's fired, and that I'm not willing to have a union representative in the room when I ask my questions. OK?
- 2) I'm in the middle of labor contract negotiations with one of our unions. We want the workers to accept a pay cut. The union is threatening to file an unfair labor practice charge against me, accusing me of refusing to bargain in good faith. I've met the union every day for the last two weeks, and I'm not going to give in and agree to a pay raise. OK?
- 3) I'm the plant manager at one of our nonunion facilities. We have 100 employees. I just met a union official who showed me fifty signed authorization cards and told me that I had to begin labor contract negotiations with his union. I told him that I needed time to look at the authorization cards, and that in any case there isn't going to be a union here unless there's a certification election first. OK?
- 4) I've got a case that is coming up for arbitration at our unionized facility. The supervisors had been letting all the employees help themselves to one box of blank paper per week, but we put a stop to that by firing a guy for stealing a box of blank paper. I want to go ahead and hire a replacement because I don't see any way that the arbitrator is going to reinstate this employee. OK?
- 5) We have a certification election coming up next month, in May. I have learned that the workers are angry that we terminated their annual bonuses last December. I'd rather have the annual bonuses than the union, so I'm going to give them a big annual bonus and hope that this helps us win the certification election. OK?

- 6) I'm concerned about one of my supervisors. In violation of company policy, she gave all of her subordinates the highest possible rating. She won't return my calls and the bonuses are supposed to be sent out next week, so I'm going to let this slide and hope that she follows company policy next year. OK?
- 7) Our compensation system is based on the point method of job evaluation. I transferred one of my subordinates to a new job. She says that her new job is worth more to the organization than her old job so she deserves a pay raise. Both her new job and her old job are in the same pay grade, but the job evaluation results show that the new job received a higher total number of points than the old job. So I have to give her a raise. OK?
- 8) I have to decide whom I'm going to promote to the position of loading dock supervisor, and I have six candidates. I can't have someone calling in sick for this job, so I plan to review the six candidates' medical records and promote the one who has visited the doctor least frequently over the past year. OK?
- 9) I manage our facility in Glassboro, NJ. We fired an employee last month for laziness, and I found out that she is collecting unemployment insurance. I plan to call the unemployment insurance office to tell them to cut off her payments. OK?
- 10) One of our commission-based salespeople is threatening to sue because she didn't earn any commission last week. She says that she is entitled to the minimum wage for the hours that she worked last week, but I told her that the law is not on her side and that we owe her nothing. OK?
- 11) I have to decide whom I'm going to hire for the position of Director of Training. I plan to have each candidate deliver a training session to me, and then I'll hire the one who makes the most impressive presentation. I figure there's no better way to decide whom to hire. OK?
- 12) I am the plant manager of a small nonunion facility. When we need more employees, I invite our current employees to recommend friends and relatives who could work for us, because I trust them to refer good people. From now on, we're not going to allow people to apply for jobs unless they were recommended to us by current employees. OK?
- 13) I am hiring people. I have a candidate who speaks perfect English and showed me her driver's license and the lease for her apartment, but I'm not hiring her because she hasn't proven to my satisfaction that she's legally allowed to work in the U.S. OK?
- 14) I am interviewing salespeople. The old Vice President of Human Resources made me write out a list of questions in advance and ask them to every candidate. That was really boring for me, so I'm going to throw away the list and use a more improvisational style from now on in my interviews, asking whatever questions seem appropriate at the time. That way I'll be more alert and better able to judge the candidates. OK?
- 15) We are opening a facility in a new town, and we will need dozens of employees for all types of jobs. I plan to use physical strength tests to decide whom to hire, because I believe that a strong employee is a better employee no matter what the job entails. OK?
- 16) I put an ad in the newspaper seeking an accountant, but the ad did not ask candidates to provide references. I plan to speak to the candidates' former employers to see how they performed at their previous jobs, and then I'll decide who to interview. OK?
- 17) I have an employee who told me that he is a recovering alcoholic. I'm not going to wait for him to show up drunk to work one day, so I'm going to fire him now before he causes me any trouble. OK?
- 18) One of my subordinates told me that she had been repeatedly asked out on dates by a coworker who would not take no for an answer. She asked me if she should sue the company for sexual harassment. I told her that she couldn't sue because she had not tried to resolve the situation through our company's sexual harassment complaints procedures. OK?
- 19) Two male accountants have worked in our office for years, and we just hired a female accountant. She found out that the men are paid more than she is, and she says that she's going to sue us for violating the Equal Pay Act unless we raise her pay right away. I am worried that we have broken the law in this case, so I'm going to give in to her demands. OK?
- 20) Our facility sells products to the U.S. Army, so we must have an affirmative action program. Hispanics are underrepresented in our workforce. Our ongoing recruitment efforts aimed at the Hispanic population, such as advertising job opportunities in the local Spanish-language newspaper, have so far been unsuccessful. However, I believe that we are meeting the legal standard for federal contractors with respect to affirmative action law. OK?

DOWNSTREAM RETENTION OF CONTENT AND COGNITIVE CONSTRUCTS AS MEASURED BY THE TEST OF UNDERSTANDING OF COLLEGE ECONOMICS – MACROECONOMICS

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ABSTRACT

The Test of Understanding of College Economics (TUCE) is a well established instrument that can be used as a direct assessment of learning in introductory economics courses. The exam is typically administered using a pretest / posttest approach, which allows improvements in understanding of economic topics to be documented. The ability to document such an improvement is useful for business schools striving to meet the new AACSB assurance of learning standards. However, where the posttest is administered at the end of an economics course, success on the exam may be measuring a student's short term memorization skills as much as it is measuring true learning. In this paper, we explore the degree to which business students retain knowledge "downstream", some time after the completion of their economics course. Further, we examine the degree to which retention of knowledge varies by the Content and Cognitive areas defined for the TUCE exam.

INTRODUCTION

In this paper, we report and discuss various assessment results pertaining to the introductory macroeconomics course. We begin by discussing our motivation, the assessment environment and context, and some assessment-related terms. Next, we describe the assessment instrument used (the TUCE exam). We then report assessment results, including the relationship between various control variables and total exam score. Finally, we consider how performance varies for various sub-scores on the exam.

Henceforth, we will use the term "assessment" to refer to learning outcomes assessment, i.e. the demonstration of the degree to which students actually learn the knowledge and skills imparted in their degree program. Contrast this concept with program outcomes assessment, which attempts to measure broader program outcomes that transcend learning. Program outcomes include, for example, student satisfaction and alumni perceptions of program quality.

The new AACSB Assurance of Learning (AoL) standards for business schools, ratified in 2003 by the Association to Advance Collegiate Schools of Business (AACSB) International, have motivated a sense of urgency concerning the need for business schools to take the assessment task seriously (AACSB, 2005). In particular, the new AoL standards require business schools to undertake direct assessment of learning, where students have to actually demonstrate command of a learning outcome. Contrast this with indirect assessment where students may, for example, simply attest (on an exit survey) that they learned a subject.

Direct assessments may be embedded within a course (e.g., a quiz), administered at the end of a course (e.g., a final exam), or conducted "downstream", one or more semesters after completion of a course. Downstream assessment has the advantage of measuring retained learning rather than short-term memorization skills. The disadvantage of downstream assessment is that it is more difficult to incorporate assessment results into course grades. As such students may have less incentive to participate seriously in an assessment exercise. This type of assessment is often referred to as low stakes testing in the assessment literature. . See Wise et. Al. (2006) for a good review of the low-stakes testing literature.

The AACSB AoL standards, as well as those of regional accrediting bodies (e.g. Middle States), have placed increased emphasis on "closing the loop", i.e., making purposeful responses to assessment results and then monitoring whether said responses affect improvement in learning outcomes. Thus, the assessment task includes not only the collection of assessment data, but also the implementation of specific actions to support the goal of continuous improvement. Prerequisite to the proposal and implementation of remedial responses is the careful

analysis of assessment data and the variation in learning demonstrated by student participants. In short, one can not “close the loop” unless it is understood why the loop is open in the first place.

As an AACSB accredited institution, the State University of New York College at Brockport (SUNY Brockport) is working to meet the new AoL standards. SUNY Brockport is one of twelve comprehensive, primarily undergraduate, liberal arts colleges in the SUNY system. Total undergraduate enrollment is about 7,800 students. Approximately 1,200 of these are pursuing a business-related degree; there is no economics major. As such, economics courses at our school service the business curricula and their assessment is embedded in the broader assessment protocols of the business program.

For each course in our curriculum, we have defined not only general learning outcomes, but also key learning outcomes. Key learning outcomes are concepts or skills that we believe are so fundamental that virtually any business major should be able to demonstrate the outcome. An example would be the ability to demonstrate a basic understanding of the interaction between supply and demand. Many of our assessment protocols focus on assessing key learning outcomes. We use a combination of embedded and downstream assessments.

As a small school with modest resources, we must pursue efficient means to assess learning. This includes the use of multiple choice exams to support our downstream assessments. The pros and cons of using multiple choice tests are well developed in the literature and it is not our purpose here to extend these arguments in either direction. Some of the exams that we use are locally developed and focus primarily on the key learning outcomes for each course. However, when we can find a pre-existing instrument that has been well validated and used by other schools, we are inclined to adopt the instrument. The Test of Understanding of College Economic (TUCE) is one such instrument (National Council on Economics Education, 2004).

THE TUCE EXAM

The TUCE exam has been continuously refined and validated (see, for example, Saunders, 1991). The TUCE, which is available in both macro and micro economics versions, provides normative performance measures, useful in benchmarking the knowledge of our students against students in other programs. There are normative performance standards for 1) total exam score, 2) each item on the exam, and 3) various sub-factors comprised of several related test questions. These sub-factors are organized into *Content Categories* and *Cognitive Categories*.

Per the administrator’s guide that accompanies the exam, the six content categories include: measuring aggregate performance, aggregate supply and demand, money and financial markets, monetary and fiscal policies, policy debates, and international economics (balance of payments, exchange rate systems, open-economy macro). The three cognitive categories include: recognizes/understands basic terms, concepts, and principles, explicit application of basic terms, concepts, and principles, and implicit application of basic terms, concepts, and principles.

The normative performance data provided with the TUCE exam, as well as virtually all of the literature associated with the TUCE exam, is based on a traditional pretest/posttest design. In general, students take the test at the beginning of their economics course and then again at the end of the course. Our use of the TUCE, is comparatively unorthodox. We choose to administer our assessment exams “downstream” in the curriculum, potentially several semesters after a student has completed the corresponding coursework. Our goal is to measure retained knowledge and learning rather than measure a student’s prowess for short term memorization. As such, our assessment of the introductory economics, statistics, and accounting courses is done in our Principles of Finance course. Downstream testing (in a non-economics course) also allows us to assess learning for transfer students.. Approximately 50% of our students transfer to our school from a two-year degree program. Many of these students transfer their sophomore-level business courses, including the principles of economics courses.

With regard to overall performance on the TUCE exam, our a priori expectation (for downstream testing) is that our students should perform better than the pretest norm (students that have never taken an introductory economics course), but not as well as the posttest norm (student that have just completed the course).

The remainder of the paper is organized as follows. First, we report “downstream” retention results for a recent administration of the TUCE exam and compare them to results from the traditional pretest/posttest administration of the macroeconomics TUCE. We are not aware of any similar reporting in the literature. Second, we explore the determinants of “downstream” performance. Specifically, we are interested to know to what degree various factors, including gender, course grade, time elapsed since completion of the course, transfer status, and various student quality metrics, predict variation in downstream performance on the TUCE. Finally, we explore the



degree to which downstream retention of learning varies by content and cognitive category, as defined by the authors of the TUCE exam.

DOWNSTREAM PERFORMANCE ON THE MICROECONOMICS TUCE

The TUCE macroeconomics exam, 4th edition, was administered in the Fall 2007 semester to all students in all sections of our Principles of Finance course. The number of exams administered was 142. The exams of 6 students that had never taken a macroeconomics course were excluded from the analysis (students pursuing a business minor are required to take only one introductory economics course (macro or micro) but not both). The net sample remaining for analysis was 136 exams.

There are 30 items on the exam. The average exam score was 14.0 items correct (47%). The average score on the exam was expected to be between the national pretest norm of 9.8 items correct (33%) and the posttest norm of 14.19 items correct (47%). These downstream results fall within the expected range and the average score for our students (14.0) is significantly greater than the pre-test norm of 9.8 ($\alpha=.01$). As such, despite the lapse in time since completion of the course, our students did about as well as students that just completed a macroeconomics course. The range in scores was 5 to 26 items correct (17% to 87%). This compares with a national pretest norm of 1 to 27 (3% to 90%) items correct and a posttest norm of 1 to 30 (3% to 100%) items correct.

The strength of the results vis-à-vis the post-test norm was somewhat unexpected to us, given the low stakes nature of the exam and the significant elapsed time (for some students) between completion of the macroeconomics course and the downstream assessment. Nearly half of the students took their macroeconomics course more than a year before taking the TUCE exam; twenty percent took their macro course more than three years prior to taking the TUCE. Surprisingly, however, elapsed time since completing the macroeconomics course was not a significant explanatory variable for exam score.

With regard to total exam score, univariate results for various categorical control variables appear in Table 1. Significant sub-group differences were observed for Gender, Ethnicity, Class Rank, Place of Residence, High School GPA, and High School Rank. Entering these and other continuous independent variables into a regression reveals that SAT score is the strongest variable when it comes to predicting variation in total exam score; R^2 for SAT alone is 0.25.

Table 1: Group Means by Categorical Control Variable

Variable	Groups and Group Sizes	Group Mean Score	Signif. Diff?
Gender	82 male, 53 female	(14.7, 13.0)	yes, $p=.011$
Traditional /non-traditional	122 \leq 25 yrs, 14 $>$ 25 yr	(14.0, 14.3)	No
Ethnicity	120 white, 16 Other than white	(14.2, 12.1)	yes, $p=.029$
Full-time, part-time status	Only 3 Part Time	N/A: Sample Size	N/A
When student takes courses	103 day, 33 evening/mixed time	(13.9, 14.3)	No
Class rank	62 seniors, 80 pre-senior	(14.8, 18.2)	yes, $p=.015$
Entry status	64 Native, 88 transfer	(14.3, 13.8)	No
Where student lives	82 on/near campus, 54 commuter	(14.2, 12.5)	yes, $p=.008$
Major/Concentration	24 ACC, 96 BUS, 13 International Business	(13.3, 14.3, 12.6)	No
Took SAT or ACT	13 No, 123 Yes	(14.4, 13.6)	No
Where student took Macro	80 SUNY Brockport, 76 elsewhere	(14.0, 14.0)	No
Macroeconomics Instructor	Inst-1 (14.4), Instr-2 (13.2), Instr-3 (14.7), Instr-4 (15.2), Instr-5 (14.1)		No
Number x student took SAT	24 Once, 37 Twice, 12 Three or more	(14.0, 14.4, 13.3)	No
High School GPA	14 Below 85, 26 (+85-90), 35 (+90-100)	(11.8, 13.9, 15.5)	yes, $p=.04$
High School Rank	9 Bottom third, 16 mid third, 38 top third	(10.0, 12.4, 15.7)	yes, $p=.001$

With regard to the significant control variables in Table 1, only gender remains significant once SAT is entered into the regression equation. There is a modest correlation of 0.53 between a student's macroeconomics course grade and their total score on the TUCE Macro exam. However, when a student's GPA in all business courses (completed prior taking the TUCE exam) is entered into the regression equation, the macroeconomics course grade drops out of the regression. Equation 1 represents the final regression equation;. R2 is 0.33. As such, a substantial proportion of variation in total exam score remains unexplained:

$$\text{Predicted Exam Score} = -7.5 + 1.9(\text{Male}) + .0114(\text{SAT}) + 2.9(\text{Business GPA}) \quad (1)$$

Other variables that were not significant include various measures of student workload (credit hours being taken, hours per week of employment), elapsed time since completion of the macroeconomics course, total credit hours completed, GPA in English courses, and GPA in Math courses. For the 68 students that transferred 50 or more credits, the correlation between transfer GPA and exam score was 0.37.

In summary, the strongest predictor of exam score is the student's SAT score. Most (78%) of the poorest performing students (total TUCE score of 10 or less) also scored below 1026 (the national average) on the SAT exam.

PERFORMANCE ON CONTENT COGNITIVE SUB-SCALES

With regard to the content subscales described earlier, the students that took macroeconomics at SUNY Brockport were weakest (in both absolute and relative terms) in content categories 3 and 5, although students did exceed pretest norms in category 5. See Table 2. Students seem to better retain materials associated with categories 1, 2, 4, and 6.

Table 2: Content Categories: Local Performance versus Pretest and Posttest Norms

Content Sub-scale	Description	% Students Answering Questions Correctly (cat. avg.)			
		Took Macro at Brockport	Transferred Macro	National Posttest	National Pretest
1	Measuring aggregate performance	51%	49%	53%	35%
2	Aggregate Supply and Demand	52%	53%	51%	38%
3	Money and financial markets	33%	37%	46%	24%
4	Mon/fiscal policy	49%	47%	45%	34%
5	Policy debates	28%	33%	35%	27%
6	International Economics	56%	56%	42%	30%

Performance by cognitive sub-scale is shown in Table 3. The most notable outcome is the weakness indicated in category one and the strength in category three. Students seem to be able to retain information related to the last category more so than the first, even though recognition is generally considered a lower order of learning.

Table 3: Cognitive Categories: Local Performance versus Pretest and Posttest Norms

Cognitive Sub-scale	Description	% Students Answering Questions Correctly (cat. avg.)			
		Took Macro at Brockport	Transferred Macro	National Posttest	National Pretest

1	Recognizes/Understands basic terms, concepts, and principles	38%	41%	46%	28%
2	Explicit application of basic terms, concepts, and principles.	47%	44%	48%	34%
3	Implicit Application of basic terms, concepts, and principles.	53%	56%	45%	34%

CONCLUSIONS

The exam results reported here suggest that downstream retention, by undergraduate business majors, of knowledge associated macroeconomics issues is reasonably good, compared to students that just completed the macroeconomics course. In terms of content, students seemed to be less able to demonstrate knowledge about money and financial markets and policy debates. With regard to cognitive processes, students had the most difficulty demonstrating a recognition/understanding of basic terms. Students that transferred their macroeconomics course fared about the same on the exam, suggesting that our results are not necessarily unique to SUNY Brockport.

Significant predictors of performance included gender (favoring males), SAT and GPA in business courses. Macroeconomics course grade and time since completion of the macroeconomics course were, surprisingly, not significant. The most important explanatory variable was SAT score, accounting for 25% of the variation in exam scores. The importance of SAT in predicting variation in assessment exam scores is consistent with other assessment exercises that we have conducted, including performance on the ETS exam.

Both the SAT and the TUCE exam are multiple choice exams. The results reported here may simply indicate that students who do poorly on one multiple choice test are likely to do poorly on another. Alternatively, the SAT may provide a measure of the degree to which a student can retain and apply information that they have learned.

The data analysis did not identify any particularly important explanatory variables, so it is difficult to know “where to begin” with regard to attempts to remediate weaknesses. With regard to informing continuous improvement, we have distributed an item analysis to all of our macroeconomics instructors, asking them to be aware of the results, particularly where a large proportion of our students answered an item incorrectly. However, we still remain committed to focusing on teaching the learning outcomes defined for the macroeconomics course, rather than trying to “teach to the test”, a result that seems inevitable in many assessment environments.

TUCE is a proprietary exam; therefore, an item analysis is not presented here. Areas of future research include investigation whether particular exam items are sensitive to one or more of the control variables used in this study, and understanding the sources of variation in the exam subscales.

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THE GLOBAL VILLAGE FORTY YEARS LATER: HOW HAS TECHNOLOGY CHANGED THE WAY WE THINK, LEARN, AND TEACH?

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ABSTRACT

Since the 1960s, the United States and other developed economies have experienced tremendous technological growth. Even though the effects of these technological changes have been observed by almost all sectors of the economy, they have specially influenced the education sector and changed the way we think, learn, and teach.

Access to computers and to the information available through them is crucial to the educational health of our nation. However, there is more to information technology than desktop/laptop computers. Our students, who will later become productive workforce, need educational skills to make sense of and use the information that surrounds them in such a manner that they can survive as well as thrive in a world of changing technology. Furthermore, making the tools of technology available is important, but that is just the first step. Fully preparing and supporting faculty in the instructional use of technology is equally important and critical.

INTRODUCTION

We live in a world of ever-changing technology. From the early on, mankind has sought out ways to improve their lives and find ways to make things easier to use. Since the 1960s, the United States and other developed economies have experienced tremendous technological growth. During the last twenty years, in particular, we have observed tremendous growth in the technological sector. Even though the practical effects of these technological changes have been felt by almost all sectors of the economy, they have especially influenced the education sector and changed the way we teach and learn and have greatly impacted the skills of that part of the labor force made up of current graduates.

Technological innovation in transportation spawned colonialism and mercantilism, which spread European culture and technology around the world. The Industrial Revolution completely revolutionized countries and led to the rise of the middle-class. Today, computers, telecommunication, and satellite technologies have speedily transferred data and information to places where they can be better utilized in the production of goods and services. In the beginning, output was measured in physical materials such as oil, wood, raw minerals, etc. Over the past few decades, concepts and ideas have substituted for physical resources and labor. The speedy spread of information is as important to output as the railroad was at the turn of the century. This need to spread information has led to an increased investment in newer technology (Greenspan, 1999).

Technology is the process by which human beings modify nature to meet their needs and desires. Most people, however, think of technology in terms of its artifacts: computers and software, washers and dryers, microwave ovens, EZ Passes, ATM cards, etc. But technology is more than these material products. Technology includes the entire foundation or underlying base necessary for the design, manufacture, operation, and repair of technological artifacts, from corporate headquarters and engineering schools to manufacturing plants and maintenance facilities. Technology provides tools through which individuals manipulate both resources and their ideas. In this environment, education has become crucially important. Technological innovation has created a need for more highly skilled workers. Technological knowledge and education are closely related, yet there is an important difference. Technological knowledge refers to society's understanding about how the world works. Education plays the role of transmitting this information to the workers. Therefore, the growth of the global economy depends on the ability to innovate and apply new technologies.

In the U.S., education and educational techniques, in particular, have always been influenced by the need for a skilled workforce to keep up with the evolving economic infrastructure. Technological advance has not only brought about improvements in the physical capital, like machines, tools, and equipment, but also has created the demand for new skills in workers so that they are able to interact with the increasingly more complex capital equipment (Greenspan, 1996).

Technology and Education

Forty some years ago a high-school diploma was more than enough to draw youth from any part of the country into various occupations in business to meet the needs of an advancing manufacturing sector. As the economic returns for having a high-school diploma rose, so did the enrollment in high schools. As new production technologies emerged in the manufacturing sector, American colleges responded by including courses in the sciences and computer technology. Our education system has proven to be sufficiently flexible to meet the changing and growing needs of the new market economy.

Now, there has been a growing demand for college-educated workers. About two-thirds of high-school graduates enroll in college. Colleges bear an overwhelming responsibility to train and prepare students for the rapidly changing economy. Both society and the economy also value more college/university graduates. This is evident in the rising salaries of college graduates compared to high-school graduates. Countries, all over the world, are emphasizing and encouraging higher education, not only in the popular fields of business and management but also in the sciences such as math, computer science, etc. Even though the higher-education systems in many developed economies and in some less developed countries are competitive, almost one-third of the foreign students who want to study abroad choose to study in United States (Greenspan, 1999).

Many adult workers are opting to return to college to increase both their labor skills and their opportunities to earn more. There is an increased realization that businesses prefer workers who are prepared to learn new skills, are flexible, and are willing to continue to learn and keep up with the constantly changing technology. Many new jobs have been created from technological changes in the transportation, communication, and computer industries. Advancements -- such as navigation systems in cars, cell phones, and the internet-- have created more job opportunities.

The need and desire to learn new skills and the availability of technology have introduced creative new ways to transmit education outside the traditional classroom. Courses are now offered online where students can take a class over the Internet without ever setting foot on the college/university premises. Workers can now enroll in college classes and be full-time workers as well as students to meet changing business needs. Various interactive educational software is being developed to offer competitive college programs. Even though the process is still in its infancy, its success depends on how successfully colleges employ new information technology and how effectively they deliver it to the students.

Technology and Workplace

The 21st century has brought and will continue to bring new challenges to the educational system; and with continued advances in technology, the transmission of knowledge will also take wide-ranging directions. Technology has also played an integral part in the workplace. Today, business and workers can communicate with each other from different countries on a computer or television screen. Technology has changed the way production, coordination, or management work is done. Evolving information technologies-- such as the internet, e-mail, video conferencing, etc. -- allow workers to be members of a team without really being there. Virtual teams convene electronically with members reporting in from different locations and organizations and even from different time zones.

The Internet's influence on how we think surpasses simple buying and selling. It impacts the way we interact with one another. Two of the largest websites in the world, MySpace and Facebook, are social-networking websites that allow a user to create a personal page for others to view and to meet others with similar interests, hobbies, and activities. While this is a relatively recent development confined mostly to young people, it is not difficult to imagine a future where business is conducted via Facebook, MySpace, or other social-networking websites.

Technological changes and advances can greatly impact the value of a worker's skill. The fear of skills becoming obsolete in a rapidly changing work environment is, no doubt, one of the important reasons for a massive increase in the demand for higher education. Workers want to enhance their work skills through specialized training in order to rise on the corporate ladder. This has led to an increased proliferation of community and state colleges and so-called global universities which are offering job-oriented as well as traditional college curricula. However, even with college degrees, jobs are not as secure as they were in the past. Today's college graduates will change

jobs many times and are required to have very many skills to survive in this ever-changing technological environment. While experience may offer older workers a certain amount of income edge and protection, technological changes and advances can, at the same time, render their skills obsolete (MacDonald, 2004). New technology, in most cases, depreciates the value of experience. This job uncertainty has created anxiety and insecurity in 37 percent of both older and younger workers, according to International Survey Research. Furthermore, the economic ascendancy of Asia is changing the geography of innovation and shifting it away from the U.S. and Europe. China and India have not only become low-cost sources of manufacturing and services products but also producers of growing talent – engineers, scientists, designers, and inventors.

Just where we are going to end up depends on where the technology takes us and how much our government is in favor of spending federal money for education in science, math, and engineering. We are sure the higher education institutions will seize all the opportunities provided by advances in technology and will remain at the center of the endeavor in order to produce qualified workers who will produce more, earn more, and improve their standard of living. The good news is that American minds excel at putting creativity to work. In the past 40 years, Americans have created everything from the microwave oven to the artificial heart to the internet. For example, something new is invented frequently at Google. Both Steve Jobs and Google are the creative factory of this century and a model for other companies to study.

The Democratization of Creativity

Creativity is universally accessible to everyone and can absolutely be learned as long as colleges and universities keep up with advancements in the latest technology because every discipline has been affected by changes in technology. Google need not be the exception; it should be the model. The development of information technology, including the internet and computerization, has changed the way we think, teach, and learn in the field of education. Creativity can also be taught or developed in the right environment. Virtually in every academic discipline, the content and facts at the cutting edge of research are available at the click of a mouse. Students can get the lecture notes or videos of their teachers and other scholars by connecting to the Web. Everything that is taught to students today is temporary and subject to revision. Today's high-tech classroom has LCD projectors, smart boards, digital cameras, and computers, all of which have a great impact on the way we teach and learn. The classroom is no longer detached from the world (Smith, 2002). The increased use of technology and the widespread use of the internet have been able to involve students in cooperative learning and thinking. They learn how to share knowledge, work as a team, and make quick decisions. These skills are not only needed in schools but are also required in today's working environment. Certain computer programs such as PowerPoint, Excel and even Microsoft Word place them one step ahead when they are working in the real world. PowerPoint presentations used in classes provide and work as visual aids to students. They learn how to give presentations and interact with others while simultaneously providing clear information. Excel helps students organize their ideas and create charts and spreadsheets. Microsoft Word can help make dedicated students into better writers because it allows them to revise text, rearrange paragraphs, and experiment with the different possible tones of an essay. Furthermore, it helps improve the manner in which they organize their thoughts.

Employers are usually looking for workers who know how to use modern-day technology to be more productive employees for their businesses. Human memory is becoming obsolete. Why do people have to remember things when they can find information with a quick Google or Wikipedia search? Society no longer needs people who can memorize large amounts of facts and information. Society now has an enormous demand for analysts and interpreters who have the vision to interpret the facts and make important decisions based on them. Creativity is almost never a logical process. Great ideas can come from anywhere.

Technology and Classroom

However, education is still a necessary function of society. Surprisingly, it is now also a powerful attractive economic opportunity for venture capitalists, corporations, textbook publishers, and institutions of higher education—all of which are rushing madly to develop online courses, virtual universities and education-course software. In other words, the economics of education has changed due to advances in information technology.

The current technology allows educational institutions to adapt to students' changing needs. Through a campus portal, students can apply to enroll in classes, see their grades and transcripts, use the library resources, e-mail friends, classmates, professors, and participate in discussion groups. Before information technology became

universal, only traditional, on-campus students were able to experience personal interactions with faculty, peers, and their institution. These campus portals also allow faculty to load and post their syllabi, Web pages, course content, and relevant texts and materials, as well as links to additional materials and references. Students can also post or send their work through the same portals.

Another consequence of current technology and the usefulness of the Internet is the use of multimedia. It allows faculty to combine PowerPoint presentations with video clips, audio samples, animations and graphics, etc., along with the usual texts. Students are expected to use these same technologies. Thus, educational institutions need to develop well-supported multimedia labs that are easily accessible to both faculty and students (Smith, 2002).

However, one drawback is that there is too much information available on the Internet which needs to be filtered out. The vast amount of data on the Internet is not catalogued or cross-referenced. Often key-word searches lead to irrelevant or offensive sites. Also, many times it is impossible to return to the same information without a bookmark. We must recognize that students are students. Just because technology exists and is easily accessible to students, does not mean they become, all of a sudden, better learners. They still need as much guidance from faculty as the students of previous generations.

Furthermore, it is a mistake to conclude that the professor's job now is only to facilitate or guide students in the gathering of information. He or she still needs to explain the validity and applicability of theories and the meaningful implications of information gathered by students. Due to their knowledge and experience, teachers are able to draw constructive conclusions from the information that is accessed. Just because information is easily accessible does not mean the teacher's role is reduced to simply coaching students. Students, if left alone, on the Internet-Highway may be able to acquire a mountain of information, but it might be meaningless or wrongly interpreted if not properly taught by the professor. Being active and interactive in the process of learning does not necessarily mean they can learn "facts" and "knowledge" on their own. Technology has shortened the time it took to gather information, but it has not reduced the time it takes to master it to gain knowledge. However, the impact of economics and the corporate model on higher education has profoundly affected the way in which we offer higher education. Students can now take online classes in other schools while enrolled in their own institutions. This could marginalize small colleges and universities unless they also adapt to the changing educational protocols of the large universities which are now offering online classes.

Also, education is not a game. It is not meant to be fun. It is hard work which is learned after years of concentration. We need to learn from the experiences of China, India, South Korea, and Japan, where the education system is far superior to that of the United States. The quicker we realize that there is time for fun and a time for serious learning, the better educated our students will be. Merely adopting new technology alone is not going to raise our educational standards.

Students should be allowed to experiment with the new technology and assist with its introduction. We must ask about, listen to, and welcome their opinions. Experienced students, serving as one-on-one tutors, have generally produced very good results in terms of spreading knowledge. Thus, they should be encouraged and rewarded.

In addition, by establishing learning centers for those interested in switching from traditional teaching to the technology-supported teaching, more faculty will use technology-based teaching models in their classes and assign projects that need research on the Internet. Also, small-group discussions, including chat rooms to create a social setting reflecting the peer community, are essential to the transmission of knowledge. Academic computer literacy should be emphasized as a primary focus of the mission of any educational institution. Access to computers and to the information available through them is crucial to the educational health of our nation; and instead of laptops, we should also explore the use of handheld devices like the Palm Pilot or Black Berry, which uses the same technology and is much cheaper (Smith, 2002; Campus Technology, 2001).

In Conclusion, computer literacy should be accessible to all young people in the present and in future generations and must not be limited only to wealthier schools. Depriving the younger generation of computer literacy by keeping them in the informational dark will cost much more in the long run. The more well-informed all our students are, the better workers, citizens, and parents they will become. This, in turn, will increase the demand for institutions of higher education to provide lifelong learning.

Thus colleges and universities need funding to integrate technology into classrooms. Furthermore, the technology available to students and faculty should be compatible with the technology used outside of schools. A separate budget should be set aside for professional development of the faculty to become proficient in using and

integrating technology into their classrooms. Not only university management but faculty also should be involved in decision-making process regarding planning, purchasing, and deploying education technology.

In addition, there is a bigger role to be played by the textbook publishing companies and PDA (Personal Digital Assistant) manufacturers in this environment. Like textbook publishing companies, PDA manufacturers should also explore market for their products in college and university classrooms because they are smaller in size, easy to carry and use, and less likely to be broken or stolen than laptops. These manufactures should collaborate with university faculty and start experimental projects in few classes. University management should provide a good infrastructure, a solid technical support, and a proper on-going training program for its success.

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THE IMPACT OF A FRESHMAN SEMINAR ON RETENTION AND ACADEMIC PERFORMANCE OF BUSINESS MAJORS AT A HISTORICALLY BLACK UNIVERSITY

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North Carolina A & T State University

ABSTRACT

Every year more than 1,000,000 students enroll in over 2,000 colleges, yet the national six year graduation rate was 57% for those who began college in 1997, and was 40.5 % for African Americans (Carey, 2005). Despite this disparity, the majority of research on retention strategies has been conducted at Predominately White Institutions (PWIs) (Hurd, 2002). Clearly research is needed on factors in the retention of African American students at HBCUs in order to support their success.

This research investigated the impact of a freshman seminar on first year retention and grade point average for the School of Business and Economics (SOBE) majors at a large public HBCU. A longitudinal retention study by Ishitani and Des Jardins (2002) found that first year GPA was “monotonically” (p. 14) related to retention more than any other student factor, so first year GPA is a critical outcome of an intervention retention strategy. The findings will inform further research in the understudied area of retention of African American students attending HBCUs.

INTRODUCTION

Student retention in higher education is of vital importance to our country’s knowledge-based economy, as 60% of jobs require some post-secondary education (Carnevale & Desrochers, 2003). Every year more than 1,000,000 students enroll in over 2,000 colleges, yet the national six-year graduation rate was 57% for those who began college in 1997, and was 40.5% for African-Americans (Carey, 2005). Despite the disparity in these completion rates, most research on retention has been conducted at Predominately White Institutions (PWIs) (Hurd, 2002). When retention research focused on African-Americans, it was usually in the context of diversity or affirmative action programs at PWIs (Redd, 2000). The significance of the lower rate of retention for African-American students is highlighted by a 1997 U.S. Department of Education report which revealed that, while Historically Black Colleges and Universities (HBCUs) represented only 4% of all higher education institutions, they constituted 28% of all African-American undergraduates (Redd, 2000). Clearly, research is needed on factors in the retention of African-American students at HBCUs in order to support their success.

At North Carolina Agricultural and Technical State University (NCAT), a Historically Black University (HBCU) of over 10,000 located in Greensboro, North Carolina, the 2006 six year retention rate was 39.5%. (The University of North Carolina General Administration, 2006). Within the School of Business and Economics (SOBE) -- whose majors constitute approximately 15% of undergraduate enrollment -- slightly less than three fourths (72.7%) of first-time SOBE freshmen enrolled in Fall 2005 returned a year later (North Carolina Agricultural & Technical State University, 2007a). This research employed statistical analyses to investigate the impact of the SOBE version of a freshman seminar entitled The University Experience 100 (UNST 100) in terms of retention and first year grade point average. A longitudinal study by Ishitani and Des Jardins (2002) found that first year GPA was “monotonically” (p. 14) related to retention more than any other student factor, so it is crucial that freshman seminars have a positive impact on first year GPA.

Researchers in the field of retention have argued that “only institution specific studies of departure can provide insight into the circumstances which lead to a given rate of departure from a particular institution” (Tinto, 1993, p. 22). This study answers such a call, and its findings hold potential to contribute to first year academic success for SOBE majors at this institution as well as others, and to inform further research in the understudied area of retention of African American students attending HBCUs.

THE UNIVERSITY EXPERIENCE 100 at NCAT

In Spring, 2006, NCAT created a new interdisciplinary general education division called University Studies (UNST). The purpose of this program was to “promote broad based critical thinking skills, effective written and

oral communication of ideas, appreciation for diverse cultures, and commitment to ongoing civic engagement and social responsibility” (Graves, 2008, p. 4). Four mandatory three credit hour courses were developed for all new freshmen: Critical Writing, Analytical Reasoning, The Contemporary World, and the African-American Experience. UNST also mandated that each school and college offer a one credit hour discipline-specific freshman seminar course for the following fall, entitled The University Experience 100 (UNST 100). This course was taught once a week as a pass/fail seminar and featured several SOBE faculty members as keynote speakers throughout the semester. Topics such as information technology, research writing, communication and critical thinking skills, ethics, academic policies and offices, the value of a college education, lifestyle, health, and global perspectives, and the culture of the business school formed the focus of instruction. Guest speakers from other program areas on campus and the local community provided students with information on the importance of interdisciplinary thinking, NCAT history, diversity, the *Aggie Pride* compact, student affairs handbook, personal development, and leadership skills (North Carolina Agricultural and Technical State University, 2006.). The class met in the SOBE auditorium with about 130 students assigned to each of two sections. As with all UNST courses, students arriving ten minutes late to class were marked absent, with four absences resulting in an “F” for the course. Students attending two sessions featuring guest speakers were required to dress professionally.

RESEARCH HYPOTHESES

The following hypotheses were developed regarding the impact of the 2006 UNST 100 course on retention and academic performance:

H1: There will be a statistically significant difference in the first year retention rate between Fall, 2005 entering freshman SOBE majors who did not attend UNST 100, and Fall, 2006 entering freshman SOBE majors who attended UNST 100.

H2: There will be a statistically significant difference in the first year GPA between Fall, 2005 entering freshman SOBE majors who did not attend UNST 100, and Fall, 2006 entering freshman SOBE majors who attended UNST 100.

CONCEPTUAL FRAMEWORK

Retention Strategies at HBCUs

Knowing that “the key to retention and academic success is the development of a sense of connection with the institution” (Tinto, 2006, p. 6), social comfort and connection may in part explain the continued popularity of HBCUs. However, as HBCUs now compete with other institutions for Black students (Walker, 2006), it becomes crucial to provide findings relative to the HBCU context. Although their overall enrollment increased from 190,305 in 1976 to over 230,000 in 2001, the percentage of Blacks choosing HBCUs declined from 18.4% to 12.9%. From 1995 to 2004, 26 out of 87 HBCUs reported a decline in their enrollment. Alabama’s Talladega College decreased 54%, and the University of the District of Columbia decreased 47%. Michael Lomax, president of the United Negro College Fund, reasons that “students have a lot more choices and those students are being careful and more selective than ever before” (Walker, p. 1).

HBCUs have had a unique history in American higher education. They were founded after the Civil War as most other institutions had admissions policies that excluded people of color. The term now applies to these colleges established in the southern and border states before 1964, even though “many HBCUs shifted their focus to providing opportunities for low-income students, regardless of their racial/ethnic background, who are unable to pay the higher cost of education. Still, more than 86% of those enrolled are African-American.” (Reed, 2000, p.7). Additionally, Hurd (2000) pointed out that many Black students at HBCUs were first-generation college students, so they did not have family support that was based on a college experience. He quoted Dr. Rodney Smith at Hampton University: “The mission of HBCUs is to provide an opportunity for higher education. Therefore, HBCUs attract and accept students from a variety of socioeconomic backgrounds as well as various academic backgrounds. So designing programs to address all of these issues is difficult” (Hurd, 2000, p. 3).

In 2002, Hutto and Fenwick surveyed 1,000 freshmen at three privately funded HBCUs to find out the impact of student services satisfaction upon freshmen retention. The six independent variables included enrollment

management, financial assistance, residence life, extracurricular activities, counseling services and academic support services. Although previous research had examined socio-cultural barriers and social adjustments for Blacks, Hutto and Fenwick found the major factor influencing student retention was the ability of the college to communicate effectively at the pre-entry phase about its offerings, especially in the areas of enrollment management and financial assistance. Based on the work of Hutto and Fenwick, HBCUs wishing to remain competitive must provide access to quality student services. UNST 100 devoted one class meeting to the "University's academic policies, advising process, and the role of various offices" (North Carolina Agricultural & Technical State University, 2006, p. 5).

In 2000, Hurd reported on innovative retention strategies at selected HBCUs. Hampton University started an Early Detection Program that required freshmen with more than two grades of C's or lower after midterms to attend mandatory success workshops. They also paired freshmen on academic probation with a faculty advisor who also served as a mentor. A Student Retention Advisory Committee was formed at another HBCU, Alabama State University (ASU), which had an 18% retention rate. Hurd stated that many universities were traditionally more concerned with recruiting students than keeping them, but this perspective needed to change if retention was going to improve. As ASU's Director of Admissions Lamar Kennedy declared: "We have to start treating them like our customers, not just students" (Hurd, p. 5).

RETENTION AS RETURN ON INVESTMENT

Return on Investment for Government and Taxpayers

Singell, citing research on the effect of financial aid upon retention at the University of Oregon (UO), pointed out that "in 2001, federal and state governments spent nearly \$60 billion in need-based financial aid and individual higher-education institutions spent almost \$15 billion in university-specific grants." (2003, p. 459). State and federal governments and taxpayers have the right to expect institutions to be accountable for the amount of money devoted to financial aid. However, with a six year national retention rate of 57% (Carey, 2005), the return on these investments in some instances is unacceptable.

Return on Investment for Higher Education Institutions

Fredda's (2000) study of freshman attrition for NOVA Southeastern University Research and Planning examined the extent of first time college freshmen attrition after one year, and profiled those more likely to leave. After one semester, 13%, or 36 out of 280 dropped out, and a total of 33% dropped out after one year. This study pointed out that the university failed to collect over \$962,220 in tuition because of the attrition rate of this group of students. The realization of lost income may further motivate institutions of higher learning to focus on solutions to retention.

It is much more cost effective for an organization to retain an existing customer than to attract a new customer. For every full-time first year freshman student who begins college and does not return the following year, a university loses revenue from tuition and other fees, as well as substantial state and federal subsidies. This amount does not include other sources of student related revenue such as housing fees, meal plans, parking, book sales, and later, alumni contributions.

Return on Investment in the Context of Social Responsibility

Citizens now expect corporations to be responsible to stakeholders as well as to shareholders. "Stakeholders include customers, employees, stockholders, suppliers, dealers, bankers, people in the surrounding community, environmentalists, and elected government leaders." (Nickels, et al., 2005, p. 110). Likewise, non-profit organizations such as state universities also have responsibilities to their stakeholders, which include a special kind of investor called taxpayers, whose taxes are used by state and federal governments to fund public institutions. In reaction to less than desirable retention statistics, some state legislatures "are threatening to tie institutional funding to the percentage of students who graduate – a potential blow to those public colleges and universities that enroll large numbers of at-risk students..." (Barefoot, 2004, p. 10).

In the context of social responsibility, organizations also have a responsibility to satisfy customers. Part of this means to be more responsible in determining who is going to be a customer. When institutions of higher education admit students who are under prepared, they are being irresponsible to those students and their parents, as well to

other stakeholders. In the 1950's and 1960's, high dropout rates were status symbols that attested to the rigor of the curriculum, but now "no American college or university wants to be known for its high rate of dropout" (Barefoot, 2004, p.10). When under-qualified students are admitted, the student and her/his family are often set up for failure. Nevertheless, the institution continues to receive funds as long as the student is enrolled.

State universities have an obligation to do more than enroll students and provide an instructor. Just as in the business world, institutions of higher education are expected to do more than simply market and provide a service. They have a social responsibility to provide customer service and support after the sale to students and their families, who constitute a unique kind of customer. Like most public universities, NCAT has had summer orientation for new students, and centralized support services such as the Center for Academic Assistance, Counseling Center, and Financial Aid Center. Additionally, freshmen are assigned to an advisor so that they can establish a relationship with one professor for guidance and support. Even so, NCAT's six-year retention rate was only 39.5%, with the four-year retention rate at 20% for those students who started in 1999 (The University of North Carolina General Administration, 2006). Improving academic success while maintaining academic integrity will better serve students, employees, the institution and taxpayers, as well as the communities within which NCAT graduates will work.

METHODOLOGY AND RESULTS

Population and Sample

The population represented all new freshmen business majors at HBCUs who first enrolled in the Fall Semester of 2005 and 2006. The sample was composed of new SOBE freshmen at North Carolina A & T State University for these two semester semesters. The Fall, 2005 semester functioned as the control group as UNST 100 was offered for the first time in the Fall, 2006 semester. Table 1 shows that freshmen were categorized by the university as new, continuing, new transfer, or returning. Only new freshmen were enrolled in the UNST 100, so this was the student category analyzed.

Table 1. *Freshman Status for Fall 2005 and Fall 2006 SOBE Majors*

Semester	New	Continuing	New Transfer	Returning	Total	Percent of Total Continuing
Fall 2005	370	130	63	10	573	35%
Fall 2006	263	145	58	9	475	55%

Statistical Methodology

Statistics may indicate trends, but decontextualize these from the stories of individual student lives. Statistics do not account for student reasons for leaving. Also, some students who are classified as dropouts actually attend and graduate from different institutions. Reasons other than academic failure such as career reevaluation or personal circumstances can also result in students leaving a given program of study. These reasons are most often not delineated in retention statistics (Barefoot, 2004). Regardless, retention related statistics may lead to more focus on ways to better support students who would prefer to complete their degree.

Table 2 shows the mean SAT scores of the Fall, 2005 and Fall, 2006 groups. This t-test shows that the p-value is over .05 at .790, which demonstrates that these two groups were very similar in their academic preparedness for college. In other words, any difference between the GPAs of the first year retention rates will not likely be related to one group being more academically prepared when they entered college.

Table 2. *SAT Comparisons Regarding Participation in Seminar*

Seminar	Percent Showing SAT Scores	N Showing SAT Scores	Mean SAT score	t	Significance
No	99.18%	367	912.18	.266	.790
Yes	94.29%	248	<u>914.88</u>		
Mean Difference			2.7		

Data Analysis for H1 and H2

Table 3 compares retention and progression status by percentages. The calculations in Table 3 revealed that there was a 5.24% higher retention rate one year later for those who took the seminar compared to those who did not. Retention appeared to improve for those who remained freshmen a year later, but to decrease for those who progressed to sophomore status. Overall, there is cause for concern that, in looking at both groups, 22.06% and 27.30% who enrolled did not return the next year. Approximately 5% of those retained transferred to other majors in both years. Because NCAT keeps students in their original major for retention statistics purposes, they were included in this analysis. The data also highlights a need to include progression to sophomore status in any description of first year retention and academic success. Otherwise, the issues and struggles of these students may be masked.

Table 3. *Retention Comparisons Regarding Seminar a Year Later by Percentages*

Seminar	Sophomore Status	Freshman Status	Total Retained	Total Not Retained
No	45.40 %	27.29%	72.70 %	27.30%
Yes	<u>39.16%</u>	<u>38.78%</u>	<u>77.94%</u>	<u>22.06%</u>
Difference	-6.24%	11.49%	5.24%	

Table 4 compares retention and progression status by numbers. The chi-square is based on the total retained compared to the total not retained. This analysis rejects H1 because .1338 is less than 3.841, the standard for comparison. There was not a statistically significant difference in the first year retention rate between Fall, 2005 entering freshman SOBE majors who did not attend UNST 100, and Fall, 2006 entering freshman SOBE majors who attended the original version of UNST 100.

Table 4. *Retention Comparisons Regarding Seminar a Year Later by Number with Chi-Square Calculation*

Seminar	Sophomore Status	Freshman Status	Total Retained	Total Not Retained	Original Enrollment	Chi-Square	Critical Value at .05
No	168	101	269	101	370	.1338	3.841
Yes	103	102	205	58	263		

Table 5 compares the difference in the first year GPA of the two groups who were retained. This analysis supports H2 because .02 is less than .05, the standard for comparison. The improvement in the first year GPA of new freshmen who took UNST 100 in the Fall, 2006, compared to those who did not take UNST 100 in the Fall, 2005, can be understood as statistically significant, and not due to random circumstances.

Table 5. *First Year College GPA Comparisons Regarding Seminar Participation*

Seminar	Retained	Mean	t	Critical Value at .05
No	269	2.60262	2.327	.02
Yes	205	<u>2.74389</u>		
Mean Difference		.083806		

CONCLUSIONS AND PLANS FOR FURTHER STUDY

The analysis did not support H1; there was not a statistically significant difference in the first year retention rate between Fall, 2005 entering freshman SOBE majors who did not attend UNST 100, and Fall, 2006 entering freshman SOBE majors who attended the original version of UNST 100. However, the analysis supported H2; there was statistically significant difference in the first year GPA between Fall, 2005 entering freshman SOBE majors who did not attend UNST 100. Recall that Ishitani and Des Jardins (2002) found that first year GPA was “monotonically” (p. 14) related to retention more than any other student factor, so this improved first year GPA may lead to significant retention and graduation rates in subsequent years. Additional t-tests revealed that the difference was sustained when categorized by gender and it was stronger for females than males. They also revealed that The UNST 100 course had a greater impact on those who progressed to the sophomore level after one year, and did not have an impact on males who did not progress to sophomore level after one year.

After the first year of UNST 100, the Dean of University Studies changed the course focus to place more emphasis on “freshman survival skills” and less emphasis on the introduction of the University Studies curriculum. This revision was based upon the realization that many entering Fall, 2006 freshmen struggled academically due to their lack of basic skills such as time management and study skills (Graves, 2008). This observation is supported by Table 3 and Table 4. A textbook entitled, *The Successful Student's Guide to College, NCATSU custom version* (2007) was adopted, the course became graded rather than pass/fail, and a single SOBE instructor was hired to teach three sections of about 80 students each. In addition to the first year's topical foci, the revised course for Fall, 2007 also addressed academic advising, health choices, and strategies for success in college such as note taking, time management, test taking, leadership, and memory and learning skills. Attendance and participation accounted for 25% of a student's final grade, assignments and quizzes accounted for 17.5%, and the midterm and final exam for 50%. Also, fulfillment of a requirement that students visit their academic advisor at least three times across the term accounted for 7.5% of the course grade (North Carolina Agricultural and Technical State University, 2007b.)

When the first year data becomes available for the Fall, 2007 entering freshman SOBE majors, the researcher will investigate the impact of these changes. It is hypothesized that there will be a statistically significant difference in the first year retention rate and first year GPA between Fall, 2006 entering freshman SOBE majors who attended the original version of UNST 100, and Fall, 2007 entering freshman SOBE majors who attended the revised 2007 version of UNST 100. These results will be more significant as the other UNST foundation courses were in taken by both groups.

In addition to the quantitative analysis, qualitative analysis will take place in the form of focus groups. The researcher developed a flyer and customized an IRB recruiting script, and presented this opportunity to students attending a required sophomore class in the beginning of the Fall, 2008 semester. She verified that those who signed up were returning Fall, 2007 freshman SOBE majors who attended the revised 2007 version of UNST 100. They will be meeting in two groups in mid-September to share their recollections and opinions about UNST 100. Students' identity will be protected as numbers rather than names will be used during the tape recorded sessions. The research questions are broad and open ended so that the answers are not influenced to produce any particular response related to specific academic or social integration factors.

1. What do you remember most about the The University Experience 100 (UNST 100) course you took as a freshman SOBE major?
2. Was the course useful? Please explain.
3. What did you like most about the UNST 100 course?
4. What did you like least about the UNST 100 course?
5. What impact (if any) has it had on you since you completed the course?

The ultimate goal of this research is to produce information to improve both academic and social integration at the beginning of the freshman year, when it will likely have the most impact. This in turn may lead to higher graduation rates, which meets the goals of all the stakeholders including students, their families, university employees, the government, taxpayers, the School of Business and Economics, and the University.

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ASSESSMENT MAPPING: A TECHNOLOGICAL TOOL TO SUPPORT DATA-DRIVEN DECISION-MAKING

“Creativity is inventing, experimenting, growing, taking risks, breaking rules, making mistakes and having fun.”

Mary Lou Cook

Catheryn J., Weitman
Barry University

Victoria A. Giordano
Barry University

ABSTRACT

Given that accountability is intertwined with assessment practices and that there is a need for making data-driven decisions, the authors developed a technology tool to aid our School of Education towards meeting performance-based standards, assessment, and accountability requirements necessitated by national, regional, and state accrediting agencies. The efficiency of technology through its ability to capture and manipulate large amounts of data, allowed us to develop our Assessment Map to record programmatic tasks, evidences, and evaluations. The data obtained from those evaluations provides a mechanism to make decisions about program and student outcomes. The Assessment Map is used across six professional degree programs at both the graduate and undergraduate levels. Grounded in four distinct constructs (standards-based performance, curriculum mapping, assessment, and teaching and learning) faculty in our school use their programmatic Assessment Maps to uncover much about what students are able to do and know.

INTRODUCTION

The emphasis given towards data-driven decision-making, especially in light of post secondary learning matured over the last two decades (Elwell, 1999). Initially, in the early 1980s “most states chose to require institutions to develop their own *local* assessment processes consistent with their unique missions and student clienteles” (Elwell, 1999, p. 149). But by the early-to-mid 1990s, the lack of sustained change and limited fiscal resources to develop individual institutional assessments began to wane at state levels and hence then became the focus of federal legislation through the Reauthorization of the Higher Education Act in 1994 (Elwell, 1999). This legislation, invoked “a highly visible initiative to structure institutional accreditation on a national basis” (Elwell, 1999, p. 150). Accrediting bodies from the national to the local levels reacted to the new legislation by requiring institutions to establish assessment systems and to provide evidence of what informs decisions regarding programs and student learning. Accountability measures were refocused to embed assessment practices that yielded data from which decisions could be determined, understood, and made. In this newer aura of accountability, expectations changed. Institutions of higher learning now were to establish learner-centered outcomes, provide evidences of those achievable outcomes, and develop systems to monitor tasks, evidences, and evaluations both in core programmatic curriculums and through performances in the professional setting. A paradigm shift from teacher-centered program design to student-centered emerged. Additionally, and more recently, stakeholders questioned the effectiveness of a college degree in preparing students for global employability (U.S. Department of Education, 2006). To compound matters more, calls for purposeful accountability measures that delineate the quality and effectiveness of higher education beyond overall GPAs, awards, scholarships, accolades, graduation rates, and other achievements, became paramount (U.S. Department of Education, 2006). To this end, “assessment data and the analysis of that data enable(s) more informed analytic internal and external judgments of educational quality and institutional effectiveness” to be made (Hernon & Dugan, 2004, p. 13).

In this light, we were faced with conceptualizing a process for documenting changes in standards from an “input documentation” model to one that focused on “output evidences” of program graduates’ competencies, knowledge, and performance. In essence, and initially, we wanted a single compliance system that provided the following for six professional degree programs across graduate and undergraduate levels: a way to 1) delineate

standard-based course tasks; 2) identify course-embedded assessments (i.e., evaluation); 3) articulate clinical/field performances based on standards; 4) ensure continuity and alignment between and amongst tasks, assessments, and performances; 5) allow for data collection on these elements; and 6) establish feedback loops for implementation in order to make informed data-driven decisions for both overall program improvement, as well as improved student learning.

Pulling from our conceptual backgrounds in assessment, curricular mapping, standards-based performance, and teaching and learning, we designed and constructed an Assessment Map as a tool to support our needs. Those needs were two-fold as suggested by Thomas (2008) and Massey (2005). The first related to accountability; the second to teaching and learning. Massey (2005) categorized these two needs of degree-programs as “accountability-oriented” and “improvement-oriented” (p. 173). For our purposes, the accountability orientation came by linking core curricular tasks to specific performance standards and competencies; likewise, we linked performance in the field to specific performance standards. The improvement orientation comes through the constructs of curriculum mapping (Jacobs, 2000) embedded into the Assessment Map. That is, through a visual schema to align curriculum (Jacobs, 2004), the developers were able to gain information about critical assessments, especially where and when they were situated throughout the specific degree program. Further, the Assessment Map allowed repetitions to be identified, gaps in a multitude of areas to be uncovered, the breadth and depth of tasks to be examined, and the analyses of curricular validity and coherence to be studied. What we uncovered was that in order to enhance the quality of students’ learning, we needed to understand what faculty were doing and expecting of students throughout their classes and programs, as exemplified by data gathered from faculty course syllabi.

BACKGROUND

Our work was grounded in various constructs from our experiential interests and backgrounds. Our motivation to develop this electronic tool came from our competence, our institutional leadership with standards, and state-wide respect for our combined sensitivity, knowledge, and ability to jointly operationalize constructs in a thoughtful, straightforward manner. Our combined backgrounds allowed us to see the “big picture” of what was needed by using our knowledge and experience with data for decision-making, assessment, curricular mapping, standards-based performance, teaching and learning, and technology.

Assessment: Informing, Auditing, and Improving

Hernon & Dugan (2004) defined assessment as “the process of gathering and assembling data in an understandable form (in order to) determin(e) achievement of outcomes” (p. 8). Huba and Freed (2000) describe assessment as “an activity, assigned by the professor, which yields comprehensive information for analyzing, discussing, and judging a learner’s performance of valued abilities and skills” (p. 12). Both of these definitions support the “accountability-orientation” and the instructional “improvement-orientation” respectively. Further, Wiggins (1998) developed the triad purposes of assessment. These three purposes are, simply stated, the need to *inform*, *audit*, and *improve*. The latter two purposes are obviously dependent upon the first purpose! All three purposes contribute to understanding an institution’s and program faculty’s responsibilities regarding issues of quality and effectiveness.

Hernon and Dugan (2004) noted that accrediting agencies have dual responsibilities that require two types of responsiveness from institutions regarding degree programs. The two areas of responsiveness balance internal and external expectations, in order to meet acceptable levels of quality and effectiveness regarded by the “academic community and the public” (p.12). Massey (2005) distinguished between two types of quality processes: “managing for quality” and “management of quality” (p. 180). These concepts can be likened to quality control and quality assurance respectively. Mochal (2005) defined quality control as the examination of the end product. In the world of higher education, this infers examination of output measures, such as program exit criteria, feedback on employment surveys, results of credentialing exams, etc. Quality assurance, on the other hand, deals with the course of actions used to create the end product. In higher education, these actions include the processes, procedures, and input experiences which are then evidenced in student learning. We believe our Assessment Map embraces both constructs, as well as informs faculty; provides an internal and external audit of program tasks and evaluations within courses and across programs; and allows for improvement of learning outcomes and evidences. Hence, the Map provides a mechanism to help determine the quality and effectiveness of a degree program.

Standards-Based Performance

Addressing standards is not new to faculty teaching in professional degree programs; however, the implementation of performance-based standards changed much of the focus of professional degree programs during the last decade. The transformation of assessment practices and the emphasis given to learning experiences grounded in performance-based standards shifted the focus from measuring, for example, how many items on an objective paper-based test a student got correct to what the student could *do* with the knowledge learned. As such, standards changed from knowledge-based to performance-based. In other words, standards once only focused on “input” information—concepts covered in a course syllabus usually defined by accrediting bodies and/or national organizations in the discipline. Currently, content taught and studied in a degree program must be documented with evidences that *demonstrate* learning in a given course or through actual performance in the field.

Curriculum Mapping

In an effort to examine what is actually taught in classrooms, many educators have begun to develop and use curriculum maps, tools that assist teachers in gathering data regarding what their students are actually doing in their courses (Jacobs, 2000). Curriculum maps are different from the curriculum guidelines, or standards, which are used to inform practice. Curriculum maps are visual tools that allow educators to examine the operational curriculum in order to 1) gain information and communicate with others about what is actually being taught in the classroom; 2) identify redundancy, gaps, and potential opportunities for integration of content, skills, and assessment; and 3) ensure that student experiences are aligned to standards (Jacobs, 2004). Curriculum maps assist curriculum designers in developing curriculum that is integrated vertically and horizontally across disciplines and levels and incorporates student knowledge and interests. The ultimate reason for using a curriculum map is to improve student learning.

Teaching and Learning

Traditionally, higher education has focused more on teaching than on learning. Discipline-based standards, standards of learning, were used to develop acceptable content. A shift to reverse the focus re-emerged several years ago, as evidenced by a plethora of information distilling learner-centered approaches in higher education settings. Tyler (1966), more than 40 years ago, discussed the importance of addressing the learner and learner context (and cited Dewey commenting on the same topic 30 years before him) when developing learner outcomes and assessments of them. Current discipline-based standards focus on “standards for learning” (Elwell, 2005, p. 116). Thus, as standards were transformed, teaching them became less paramount than emphases given to what students learned about them and the evidences that supported learning.

Fink (2003) contended that Bloom’s taxonomy was better suited for the traditional college teaching standards of learning emphasis and of not much help in developing teaching for learning. Thus, she constructed a new taxonomy which guided college faculty “to think about the impact of how they teach and assess, and not just on *how much* students learn but on the *quality* of that learning” (Fink, p. 20). Her taxonomy of significant learning includes six areas: foundational knowledge, application, integration, human dimension, caring, and learning how to learn (Fink, 2003).

Two critical features that drive Fink’s work impacted our own. The first centers on assessing what was learned; the second focuses on the quality or proficiency levels students attained. In order to assess learning, Wiggins and McTighe (2005) suggested that one must think like an assessor by addressing three basic questions centering on the kinds of evidences needed, specific big-picture criteria to consider when looking at and evaluating students’ work, and the consistency between the students’ work sample and the desired outcomes (p. 150). Our Assessment Map provided a mechanism for us to respond to these three questions. In this regard, Elwell (2005) proposed that faculty “must focus far more on constructing assignments and exercises (i.e., tasks) that are built directly into the curriculum, designed to do double duty in judging individual student performance and generating aggregate data about institutional performance” (p. 116). Huba and Freed (2000) delineate two types of student data needed: direct and indirect. “Direct measures take a variety of forms—projects, products, papers/theses, exhibitions, performances, case studies, clinical evaluations, portfolios, interviews and examinations (p. 11). Indirect data (perceptual data) includes self-report, employer, and graduate survey data (p. 11). Given the accountability and improvement orientations built into our Assessment Map, both types of data were accounted for in the design.

ASSESSMENT MAP

As we compiled the 103 standards that each of the six degree programs was required to document, we realized we needed a system that could assist program faculty in documenting when, how, and how many times each standard is addressed and evaluated in the program. The system would have to be accessible and usable by faculty and, once course and program data were entered into the system, faculty needed to be able to easily analyze course tasks and the evaluation of them to ensure they documented the standards, met the requirements and philosophy of the program, addressed the needs of the students, and were varied enough to maintain student engagement and interest. Further, faculty needed to be able to make programmatic data-driven decisions from the tool easily.

Adapting some of the concepts from curriculum mapping and integrating them with our knowledge of assessment and the mandates we faced for documenting the assessment of our graduate and undergraduate students, we began to design an Assessment Map. We sought to develop a visual tool whereby we could collect and track data about assessments across and within programs at initial, formative, and summative benchmark points in order to inform, audit, and improve the evidences gathered to document alignment to and compliance with standards and to improve program quality. The instrument would have to 1) provide information about the current status of evidences (i.e., products and performances) used in the programs to assess candidate and program performance; 2) identify gaps and repetitions in the tasks and evaluation of the tasks; 3) help to ensure coherence within the program; and 4) establish and infuse a data-driven feedback loop for the purpose of improving the quality of the program.

When we started to develop the Assessment Map, its foundational concepts emanated from a spreadsheet used as a means for graduate students in an assessment course to look at children's outcomes through standards-based grading. We believed the spreadsheet was a good way to display data that could be compared and manipulated. We also wanted something that would be easily accessible to faculty and with which they would feel comfortable using with limited training and minimal technological support. These considerations were also important for reviewers of our data as contained in the Assessment Map. Although the utility of spreadsheets may often be viewed as marginal for complex or sophisticated tasks, we tapped into functions less frequently used in education to customize a tool that could be generic enough to use across programs (and institutions) yet capable of displaying specific programmatic assessment data.

The Assessment Map contains certain features that made it suitable for our structural framework. Through the use of calculations, functions, lookup tables, macros, and password protection we were able to design an Assessment Map that could be utilized by novice technology users and that provided scalability, pre-formatted worksheets, and the ability to populate cells with previously-entered data. These features were critical since faculty who were to use the tool had limited technological expertise and time; and minimal interest in and patience with the required task.

The Assessment Map is a Microsoft Excel workbook consisting of multiple individual worksheets and is organized around six benchmark points in the program: Pre-Admission, Core Curriculum, Clinical Experiences, Internship /Practicum, Exit, and Post Graduation. The standards and programmatic requirements are numbered and listed in the first two columns of each benchmark point worksheet and are grouped into categories for ease of reading. The tasks, evidences, and evaluation of the tasks are entered into columns in each of the benchmark point worksheets. Additionally, columns for the type of assessments and when and how the data are analyzed are included within each worksheet. Overview and Summary worksheets provided alternate views of the overall program data.

Certain cells within the Assessment Map spreadsheet were protected, leaving unlocked only those that were relevant to the program and in which the program faculty needed to enter data. This permitted faculty to navigate freely throughout the Map without fear of accidentally erasing or changing some critical component as they entered data. Scalability, the adding/deleting of rows/columns, could be utilized in our maps based upon the individual program's documentation. Further, hyperscaleability was utilized to add data that could easily be added or corrected across programs. For example, overlapping courses existed between and amongst several degree programs. Changes could be listed once and then imported or populated as needed to each applicable program. The pre-formatted cells and worksheets allowed faculty to concentrate on the quality of the data rather than the appearance of the worksheet or printed report. Populating cells with certain data not only saved time but also directed the faculty to cells requiring data. Finally, we found that making hyperlinks to web-documents or other Microsoft Office documents was easily accomplished, again, with minimal technological expertise necessary on the user's and receiver's ends.

CONCLUSION

While initially a compliance system, the Assessment Map gave our faculty across six graduate and undergraduate professional degree programs, a way to visualize and focus on standards-based performance. The completed Assessment Maps taught us many things about programs, curriculum redundancy, assessment, alignment to standards, and faculty's abilities to think in a performance-based approach. Further, we, and the faculty, could focus more on the varied types of direct measures of student data, as an initial way to understand what our students were learning; examine the degree of engagement in the learning process; and finally, to look throughout the program for benchmark assessments that could be utilized more effectively within an individual program as well as across programs. The Assessment Map tool we crafted encouraged these feats because of the constructs that were foundational in its development. Thus, because of our creativity and risk to experiment, we shaped an innovative technological tool based on simplicity and ease of use to accomplish a multitude of outcomes, which provided for and encouraged the use of data-driven decision-making from numerous perspectives.

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TOWARDS AN UNDERSTANDING OF HAITIAN IMMIGRANTS IN THE NEW YORK, NEW JERSEY AND CONNECTICUT TRI-STATE REGION

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ABSTRACT

This paper uses a cross-cultural ecological approach in order to shed light on and to increase understanding of Haitian immigrants living in the metropolitan areas of New York, New Jersey, and Connecticut—referred to as the tri-state area throughout this narrative. Haitians in this important industrial region represent a significant group to study, as one attempts to develop a fuller understanding of the various immigrant populations who are helping to drive the economic engines of the tri-state area. It is hoped that insights gained from this paper will help education institutions, government agencies, and private and public sectors to improve outreach efforts to immigrant populations in the United States in general and in the northeastern seaboard in particular.

INTRODUCTION

This paper uses a cross-cultural, ecological approach in order to shed light on and to increase understanding of Haitian immigrants living in the metropolitan areas of New York, New Jersey, and Connecticut—referred to as the tri-state area throughout this exposé. Haitians in this important industrial region represent a significant group to study, as one attempts to develop a fuller understanding of the various immigrant populations who are helping to drive the economic engines of the tri-state area. It is hoped that insights gained from this paper will help education institutions, government agencies, and private and public sectors to improve outreach efforts to immigrant populations in the United States.

The history of Haitian emigration to the United States dates back to the 19th century, when small groups of émigrés landed on the shores of the United States in search of prosperity, security and peace amid the general slave revolt on the western side of the island of Hispaniola from 1791 to 1804. This migration history has since followed a rather turbulent course, while at the same time creating challenges and opportunities for the two oldest democracies in the New World—the United States and Haiti—to cooperate with each other on a number of global and cross-cultural issues. This paper examines the organization patterns, the values, and the interactions of Haitian immigrants with other ethnic groups, and the challenges faced by this population.

HAITIAN MIGRATION TO THE UNITED STATES: AN OVERVIEW

The greatest out-migration from Haiti to the United States occurred in the early 1980s, and those Haitian immigrants that came in that decade were referred to as boat people, because the majority landed on the shores of the United States by boat. Unlike the earlier group of Haitian immigrants of the 1960s and 1970s, being for the most skilled professionals and members of the educated elite fleeing political persecutions, the Haitians that emigrated to the United States in the 1980s, however, were generally uneducated and rural poor, seeking economic opportunities in this country (Lundhal, 1980; Laguerre, 1984). Historically, Haitians leave their homeland in search of a better quality of life elsewhere for three major reasons: (1) to escape political persecutions, (2) to seek economic opportunities, and (3) to find relief from human rights abuses (Lundhal, 1979). Haitian immigrants in New York, New Jersey and Connecticut work in various sectors of the economy, ranging from healthcare, banking and legal professions to small business entrepreneurship, law enforcement, education and service industry. Interestingly, medical doctors from Haiti make up the second largest foreign-born (13%), licensed physician community in New York State. Arguably, the United States appeals as a safe haven to all groups of Haitian immigrants, regardless of the social or political differences existing within this heterogeneous group of immigrants and their motivations for migrating to this country. Some demographic data about Haitians in the tri-state area could help to increase knowledge about this immigrant population.

UNDERSTANDING MIGRATION AND ADAPTATION STRATEGIES OF HAITIAN IMMIGRANTS IN NEW YORK, NEW JERSEY AND CONNECTICUT

Based on conservative estimates, Haitians in the tri-state area of New York, New Jersey, and Connecticut constitutes a population well over 800,000 strong. While both New Jersey and Connecticut have large pockets of Haitian immigrants, New York State alone holds more than 500,000 Haitian immigrants. Most leaders in the Haitian community dispute this figure, proffering estimates of New York City Haitian residents well above 200,000 people, considering that undocumented immigrants are usually undercounted. While the exact number of Haitian immigrants in the tri-state area is yet unknown, it is a known fact, however, that the largest Haitian enclaves concentrate primarily in the metropolitan areas of New York, New Jersey, and Connecticut. In New York State, there are large concentrations of Haitian immigrants in New York City, Southern Westchester, Nassau County, Suffolk County, and Suffern County. In New Jersey, there are sizable Haitian neighborhoods in Jersey City, Newark, East Orange, Elizabeth, Irvington, and Asbury Park. Similarly, a fast growing Haitian population is maintaining a viable presence in various areas of Connecticut, such as New Haven, Hartford, Stamford, and Greenwich. Haitians in all three states generally reside in racially mixed neighborhoods, primarily among African-Americans and other immigrant populations from the Caribbean. Bryce-LaPorte (1979) has noted that Haitian immigrants are “triple minority” because they are foreigners, they speak a language that no other immigrant group speaks, and they are black. This notion of “triple minority” is further explained in the words of Buchanan-Stafford (1987:131), who has observed, “[Haitian immigrants] are a minority within a minority, often viewed simply as black by the white majority, but, at the same time, distinguished within the black population from other black immigrants and from black Americans by cultural and linguistic characteristics.” It might help both public and private agencies to know that Haitian immigrants tend to preserve their cultural traditions and keep ties with their homeland while also embracing American values.

Haitians in New York, New Jersey and Connecticut seem to live life as if they had one foot in the United States and the other in Haiti. They create various social networks (i.e., churches, small businesses, community centers, newspapers and radio programs) to accommodate their emotional, spiritual, and cultural needs they are constantly tuning to news about Haiti; they call relatives and friends in Haiti on a regular basis; and they send money to Haiti for all sorts of family matters and economic enterprises. In 2006 alone, the Haitian diaspora contributed \$2.4 billion to the Haitian economy, with the bulk of this money generated from Haitians living in the United States. Moreover, Haitian immigrants have been involved in trades and policy decisions between the United States and Haiti from the 1960s to the present. An examination of the Haitian immigrant family structure and Haitian values could help government agencies, education institutions, and the corporate community to develop a deeper understanding of this immigrant population in the tri-state area.

Haitian immigrant family structure and gender-assigned roles

Haitian family units in New York, New Jersey and Connecticut vary in size and composition, ranging from three to seven members and comprising of young children and elderly grandparents. Single-parent homes are growing in number, especially among Haitian women. It is also not unusual to find two separate family units sharing the same house or apartment. Many an observer notes that low-income Haitian families quite often live in crowded apartments among extended family members and a wide network of kin, assisting one another in a variety of ways (Plaisir, 1999; Buchanan-Stafford, 1987; Laguerre, 1984). Family members share and fulfill many roles and responsibilities, including caring for and raising children, taking care of the elderly, helping relatives back in Haiti, guiding the youth, to name just but a few responsibilities. There are several Haitian proverbs that support this kind of family organization and values. One of them goes like this: “*Men anpil, chay pa lou*—many hands make the load lighter.” Laguerre (1984:66) has noted, “The family provides a niche within which cultural continuity can be adapted to the exigencies of the new environment.”

A number of variables, such as employment opportunity, income bracket, and immigration status strongly influence the organization of the Haitian immigrant family, setting parameters as far as who leads and speaks for the family, when and how. “In the first stage of the resettlement process,” according to Laguerre (1984:74), “the role of the head is played by the breadwinner and the partner more experienced with the city, whether husband or wife.” Rey (1970:31) made a similar observation, pointing out that “the old family organization is no longer relevant. The shifting roles, the change of standards, status, personal values, contribute to the breakdown of the Haitian family

organization.” For example, in households where women are earning decent wages, men do not always make decisions for the family. If both husband and wife are employed, they expected to share family expenses proportionately to their income bracket. Normally, fathers are supposed to pay the rent and provide food and clothing to the family. It might be helpful to view these responsibilities in terms of arbitrary, gender-assigned roles among adults and children. For example, Haitian wives are often blamed if children fail to meet families’ expectations. Adult women and teenage girls are expected to take charge of cleanliness in the home, go food shopping, cook, wash and iron for the family, and attend to the special needs of young children and the elderly. Older siblings, especially girls, are expected to watch over younger ones and to help with homework if they can. By contrast, adult males and teenage boys are expected to protect their family from harm, add fixtures to appliances or furniture, and lead the family in spiritual matters. Older males usually negotiate any kinds of contracts or legal agreements on behalf of their families.

Home languages and communication

Haitian Creole and English are the preferred mediums for oral and written communications among Haitians in the United States. It should be noted that the French language is losing ground not only in transactions among Haitian expatriates in the United States but also in interactions among Haitians in the motherland. Haitian Creole remains the most widely used medium in interactions between parents and their children. Most Haitian-American children understand Haitian Creole, even though a good number of these children only use English to communicate with their parents. Oftentimes, bilingual Haitian children serve as language brokers for parents or family members who do not speak English. While all Haitians speak Haitian Creole, most cannot read or write in that language. It should be noted that the Haitian immigrants along the mid-Atlantic seaboard remain pretty much an oral culture, and information directed at this community will best received if aired on community radio stations and TV programs in both English and Haitian Creole. Since 1981, the United States government has made it public policy to communicate important information to the Haitian community in Haitian Creole. This policy seems to serve its purpose quite well.

Communication in the Haitian home environment takes many different shapes and forms, and it generally varies across gender. Males are expected to express themselves in a few words, but their words usually carry a lot of weight. They make relatively fewer gestures and facial expressions than females. Fathers usually send off different types of signals and gazes to impose their wishes. A husband’s silence might be best interpreted as a warning sign or a sense of strong disapproval. Haitian men tend not to display their affection in public. In this culture, an outpouring of emotion by males is generally viewed as a sign of weakness. Unlike their male counterparts, Haitian women seem relatively freer to express themselves through a broad array of emotions, ranging from shedding tears, making grimaces, placing their hands on their hips in defiance to suckling their tongues, swearing and cursing as ways to communicate their thoughts and feelings. At the same time, Haitian women seem to be relatively more affectionate and more patient than the men.

Haitian children are expected to keep quiet and look down when being admonished by adults. It is a sign of disrespect for children to lock gazes with adults in times of conflict. When parents, relatives, friends and visitors enter the home, boys are expected to greet the males with a handshake or a kiss on the cheek to the females. Girls give a kiss on the cheek to both males and females. It is permissible for relatives or close friends of the family to sit in close proximity to children, hug them, touch their heads and faces, tickle them, and even rub their backs during greetings, preferably in the presence of parents. Children can accept money and gifts from relatives or friends, but only with expressed permission of their parents. Haitian adults very rarely talk to children about sex or sexual orientation. Oftentimes, conversations about sex are executed in the forms of riddles when children are present; and, oftentimes the children pretend not to understand what the adults are talking about. It is a sign of disrespect for young adults to talk openly about sexual activities in the presence of their parents or elders.

A number of people can speak for the family under different conditions. Generally, an older male leads conversations when major decisions have to be made in the family, such as buying a house, sending children away to college, moving to another state or sponsoring relatives to the United States. Spiritual leaders and long-time friends are often consulted before important decisions are made.

It should be noted that both husband and wife carry out discipline tactics in the home but with variances as to the ages of their children. Some Haitian women start disciplining their children as soon as the youngsters begin teething or crawling. Others wait for children to be 18 months of age, usually soon after they are severed from breast-feeding, before they start to discipline them. Fathers begin disciplining their children much later than

mothers, usually in the teenage years. Their primary role is to coach male children on issues related to time management, family responsibilities, and work habits. At various stages of the discipline process, corporal punishment may be used on children. A number of coercive methods and instruments are often used, including spanking children with a belt or a stick, kneeling youngsters in a corner, and restricting privileges to disobedient children—just to name but a few tactics. Some parents go as far as exaggerating the gravity of an offense in order to discourage other children from repeating similar behaviors.

Haitian immigrants begin to face serious discipline challenges when their American-born children reach the teenage years. Certain cross-cultural experiences and differing views begin to widen the generational gap between Haitian parents and their children. Some children openly question their parents' values by rejecting impositions, staying out late and making friends with youths from other cultures. Oftentimes, children bring home other American friends in attire disapproved by Haitian parents. Baggy clothes, rap music, and dreadlocks are some of the contentious items that generate conflicts among Haitian parents and their teenage sons and daughters. Whereas many Haitian parents view the United States as a place of transit until they save enough money to return to Haiti, their American-born children only view Haiti as a backward country in the Caribbean and view the United States as their country of origin. Generally, Haitian children raised and educated in the United States do not envisage living in Haiti.

Since the 1990s, however, Haitian-American youths have shown unprecedented interest in issues related to Haitian language, history, customs, religion and politics. Increasing numbers of Haitian-American youths have been proudly asserting their Haitian heritage through the display of flags and other artifacts bearing Haitian emblems. While some organize forums and cultural activities to celebrate their Haitian heritage, others take time to travel back and forth between Haiti and the United States in order to meet distant relatives, as well as to learn as much as they can about Haiti. This is a phenomenon deserving much scholarly attention.

Medical and religious practices among Haitian immigrants in the tri-state region

There are marked differences between the medical practices and mental health issues of Haitian immigrants and the medical culture of mainstream American society (Laguerre 1987). Haitians in the tri-state area tend to make use of homegrown remedies before seeking recourse to conventional medical facilities. Most Haitians use herbs, roots, ointments and homemade syrups to treat various kinds of illnesses. It follows that whenever a Haitian complains about an ailment, the first tendency is to drink an herbal potion—simply referred to as “*te*—tea”. Mental health is another area where Haitians exhibit sharp cultural differences with mainstream American culture. The overwhelming majority of Haitians, regardless of social class, pay very little attention to mental health issues. While some speculate that a family spirit or *lwa* may be at the bottom of their troubled life (Fils-Aimé 2007:126), others tend to believe that time will heal all wounds. As a result, Haitians rarely seek conventional psychological intervention to deal with mental health issues. Even conditions such as chronic depressions, delusions, post-traumatic stress disorder, substance abuse, drug and alcohol dependency is often believed to be the influence of some external force acting upon the psyche (Turnier, 2002). In such cases, parents and relatives of affected family members often turn to voodoo practices and traditional Haitian remedies before considering conventional mental health interventions. A large number of Haitian immigrants go on pilgrimages, attend spiritual revivals, go on week-long fasting sessions, and even send their mentally-ill relatives back home to the care of a *houngan*—a voodoo priest in order to regain their mental health and strength. It is also the wisdom of the Haitian immigrant community that after prolonged periods away from the homeland, older Haitian immigrants begin to develop all sorts of peculiar health problems, which some refer to as *maladi peyi a*—illnesses from the host country.

Interactions with government officials

It appears that Haitian immigrants tend to deal with government representatives cautiously and with much skepticism. They generally want minimal involvement of government and law enforcement agencies in their family business. This lack of trust is probably the result of a long history of political repression and violence suffered from the controls of many oppressive regimes back in Haiti. There are several Haitian proverbs that reinforce Haitian resistance to government representatives. One of those sayings goes like this: “*Si moun lan kay pa vann ou, moun deyò pa ka achte w*—If people at home don't sell you out, people from the outside cannot buy you out.” Haitians, for the most part, are proud and individualistic people who do not want outsiders to know about their family

problems. Building interpersonal relationships and trust may be a workable strategy when dealing with Haitian families and their children.

SUMMARY

Every migration study tends to uncover a set of socioeconomic and political challenges facing a host society and its immigrant populations. The Haitian immigrants referred to in this study pose one such challenge among others: they need to be understood and they also need to make adjustments to meet the demands and expectations of American society. Currently, a good number of undocumented Haitian immigrants face deportation to Haiti, especially since US immigration policies have been further toughened through the passage of the 1996 Immigration and Welfare Reform Laws and most recently by the enactment of the USA Patriot Act (PL 107-56), consistent with a series of counter-terrorism measures put in place after the 9/11 terrorist attacks on the United States. At the same time, this hard-working and entrepreneurial immigrant group continues to make valuable contributions to the economic, social and political landscapes of the United States. Because they are in the United States to stay, the presence of Haitian immigrants warrants the attention of education institutions, social services agencies, the corporate community, and both local and federal government administrations. In sum, there is much to be learned about the social networks, family organization, communication styles, and coping strategies of Haitian immigrants in the metropolitan areas of New York, New Jersey and Connecticut. The social, economic and political conditions of Haitians in this important bastion of the Haitian diaspora still remain somewhat shady and, therefore, deserving greater attention and further study.

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HBCUS AND SHARED GOVERNANCE

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ABSTRACT

While HBCUs have contributed greatly to the African-American community and society as whole, they have struggled to survive since their inception in 1837. Given that HBCUs were started as and considered as “holding” institutions to keep African-Americans from attending white colleges and universities, they were usually under-funded and not given the necessary resources to be fully functional. Today, HBCUs are still viewed this way by society. As a result, many have been plagued with ineffective leadership and poor financial and fiscal stability. In addition, since black faculty were never expected to be change agents among society and college campuses are run very similar to black churches, decision-making is usually left up to only a few, leaving shared governance almost non-existent. The focus of this research will be to explore the concept of shared governance at HBCUs in the context of effective decision-making.

INTRODUCTION

Within the last 26 years, at least 12 historically black colleges and universities (HBCUs) have been forced to close their doors primarily because of ineffective decision-making. However, since their inception in 1837, HBCUs have made their mark not only in the African-American community but across society. While they represent only 3% of our nation's 4000 colleges and universities, HBCUs have held their own in regards to societal contributions (Malveaux, 2007). Some of their accomplishments include:

Approximately 360,000 students have attended HBCUs in the last 18 years (Nichols, 2004).

25% of African Americans earn their Bachelor degree from HBCUs (Minor, 2005).

Students graduating from HBCUs are more satisfied with their college experience compared to African-Americans graduating from HWCUs (Minor, 2005).

An estimated $\frac{3}{4}$ of PhDs earned their Bachelor's degree from an HBCU (Minor, 2005).

Students graduating from HBCUs are more likely to attend graduate or professional schools (Malveaux, 2007).

Nearly 20% of students attending HBCUs are from other races (Malveaux, 2007).

Despite their long list of accomplishments, HBCUs have struggled to survive. Their struggle can be attributed to the reason in which they exist in the first place...racism (Evans, Evans and Evans, 2002). Therefore, a thorough review of history must be conducted in order to understand the struggles of HBCUs, which in many cases lead to ineffective decision-making.

Historically, education for African Americans was never held in high regard by society; this is evident when George Washington said “teaching slaves would create a troublesome property” (Phillips, 2002). Not only was this attitude apparent in the white society, but many African-Americans believed this as well. Booker T. Washington advocated for “training the hands” instead of equal education for all (Phillips 2002).

Almost 100 years after Washington's statement and approximately 60 years before the landmark case, Plessy vs. Ferguson, the first HBCU, Cheney State University was started in 1837 (Holmes 2004; Evans, et al., 2002). HBCUs were never meant to be equal to white universities or fully functional because of racist intentions; however, this historic court case legitimized the establishment of black universities to support black students. They were

created as mere “holding” institutions to ensure that African Americans would not attend campuses with white students (Evans et al. as cited by Nichols, 2004). In an effort to guarantee their inferiority, HBCUs were purposely under funded and assigned administrators whose overall goal was to accommodate racist boards and community leaders (Phillips, 2002).

The attitude towards education for African Americans that existed during the days at Valley Forge continues to permeate through state and local governments today, and its manifestation can be seen in governmental funding structures that typically result in the insufficient funding and appropriate resources for HBCUs. As a result, HBCUs find themselves struggling on a daily basis for those things that are quite simple to their white counterparts but are necessary and common to effective decision-making. Current literature suggests that as a result of these struggles, HBCUs are plagued with three major issues; ineffective leadership and insufficient financial and fiscal stability, which have astounding results on effective decision-making. In addition, since black faculty were never expected to be change agents among society and college campuses are run very similar to black churches, decision-making is usually left up to only a few, leaving shared governance as the third issue.

Shared governance can be defined as mutual management of the university by the administration and faculty. However, Tierney and Minor (as cited by Minor, 2004) determined that campuses define shared governance in three ways:

Collaborative – collective decisions are made

Stratified – decisions are made according to the decision type

Consultative – president has the decision-making power but consults with campus before final decision is made.

As exemplified in both explanations, shared governance is not a complete autonomy of either group. Simplicio (2006) notes that based on the nature and purpose of most colleges and universities, it is difficult to allow either group to have complete autonomy.

However, shared governance is viewed differently at HBCUs compared to HWCUs. A national survey conducted by Minor (2005) revealed that 69% of faculty at HBCUs believed that shared governance was important compared to 84% of faculty at HWCUs. Also, 69% of HBCU faculty believed that trust between faculty and the president was sufficient compared to 77% of faculty on majority campuses. These figures help to support the concept that historically black colleges and universities have a different perspective about shared governance compared to their white counterparts.

Phillips (2002) believes there are at least four critical areas of shared governance affecting HBCUs:

lack of faculty representation on decision-making committees

lack of faculty representation in search and hiring for academic positions

lack of faculty in peer and administrators' evaluations

lack of faculty in the development and revision of faculty

Phillips (2002) contends that the lack of shared governance at HBCUs is related to the perceived historical role of white faculty and the historical role of black faculty. He asserts that at historically white colleges and universities “faculty members were recognized as professionals and as experts in the enterprise called higher education. They were meant to lead and change the world intellectually.”

However, at historically black colleges and universities “Black college faculty has no similar tradition: the role of their students and colleges was not to lead or change anything. They were simply tolerated and expected to fit in the larger society...” In a case study conducted by Minor (2004), three items were identified as possible influences to decision-making and shared governance at HBCUs:

“the paradox of mission” - distinct difference between the mission of the university and what HBCUs are being required to do by their board of trustees.

“faculty traditions” “faculty are more dedicated to teaching than to research. With a standard teaching load of four courses per semester, the traditions of faculty governance resemble a management style where faculty are viewed as employees rather than specialized professionals responsible for making decisions concerning their discipline”

A racialized climate -... “race is seen as a salient feature that influences the decision-making”.

While these influences have historical roots, they seem to share in the responsibility of the perception of shared governance at HBCUS. Universities must take into consideration these influences if they desire to be more inclusive in the decision-making process. In these cases, the concept of shared governance can no longer remain distant; it must be viewed as necessary and critical to the process of strengthening and sustaining our HBCUs.

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1890 INSTITUTIONS: RESPONDING TO THE NEEDS OF URBAN COMMUNITIES

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ABSTRACT

The 18 institutions legislated in 1890 as the nation's land grant universities for African American citizens have an unprecedented opportunity to respond to a rapidly changing society as a part of their core mission of promoting human, economic and cultural development. The minority families once served in rural farm communities by an agricultural economy have now moved in masses to urban centers infused with new citizens from South America and are a part of a constantly changing knowledge economy. The university's legislated responsibility to teaching, research and outreach suggest a more prominent response to this rapidly urbanizing country faced with unprecedented diversity and limiting inner city social, economic and technological infrastructure. This research explores the approaches and capacity of selected 1890 institutions to respond to a new audience of urban communities and students. Land grants rooted in their agricultural and engineering experiences have been challenged to employ all of their resources in more actively engaging with communities, expanding support for lifelong learning and renewing attention to civic engagement by students, faculty and community (Kellogg, 2000). This case study defines and describes the organizational implications of selected 1890 institutions engaging university wide in response to the needs of communities in their urban environment.

INTRODUCTION

The nation's 130 Historically Black Colleges and Universities award approximately 28 percent of all baccalaureate degrees earned by African- Americans, although they represent only 3% of the nation's institutions of higher education(The Council of 1890 Presidents/Chancellors, 2000, p. 7). Eighteen of these institutions were funded in the second Morrill Act of the US Congress in 1890 to provide "separate but equal" educational opportunities for African Americans in the southern states where segregation was the legal way of life (Bonnen, 1998). Conceived in the Jeffersonian tradition of education for democratic citizenship, the land-grant institutions have a preeminent responsibility to foster community university engagement (Ilvento, 1997). These universities that have historically served rural, agrarian communities; are now challenged to return to their foundation in democratic practice by providing even in an urbanizing nation, an environment that enhances mutual understanding, creates working relationships, brings resources and competencies to urban communities (Rubin, 2000). This research explores the relationship between urban located 1890 land grant universities and the communities in which they exist.

Institutional History of Engagement

The urban located 1890 land grant serves as a critical urban anchor that brings both longevity and stability to often transient communities (Rubin, 2000) (Lerner & Simon, 1998) (Spainer, 1999). While no longer segregated institutions of higher education, the 1890 land grant institutions today have found consensus in a mission that responds to the scholarly call of the Kellogg Commission on the Future of State and Land Grant Universities, and the nation: to produce graduates who are leaders in and contribute to their communities, the nation, and the world; and to provide teaching, research and extension and public service through collaborative efforts, which improve the standard of living and quality of life of diverse populations, including limited-resource persons." (The Council of 1890 Presidents/Chancellors, 2000).

The 18 institutions described as 1890 Land Grant Universities are among the nation's largest historically Black public institutions. These institutions have a legacy and foundation in extension and outreach within rural environments. Minority communities including African American communities in the 21st century, represent the most rapidly urbanizing demographic in the United States. The university's role in discovery, learning and outreach can contribute to this transition in the social and environmental life of the nation's minority populations. If 1890

Land Grant universities see as a critical imperative, the development of minority leaders in the nation, a model for engaging this rapidly urbanizing population is critical to the institution's success.

These universities continue to serve as the nation's preeminent professional training and research centers for agriculture and engineering, producing the majority of the nation's minority engineers and agronomist. They are uniquely positioned to meet the varied educational needs of America's ever more diverse students, communities and faculty members. Although their student population is more diverse than in past, they continue to education minority students and they frequently reside physically in the minority communities in which they draw students. There are long standing social and economic relationships between these universities and the communities in which they reside. 1890 funded land-grant universities and their physical communities often have common history and experience. With the history of post civil war origins and lingering legacy of separate but equal, in higher education, these institutions are more like the members of their community than they are different (Richmond, 1997).

Vision for the Future

The Kellogg Commission on the Future of State and Land Grant Universities calls for land grant institutions to first define optimal alignment with the most important elements of the environment within which the university must reside. This expression reinforces the literature of the past two decades reporting that scholarly engagement in higher education should reflect the unique needs of the community and the university (Kellogg, 2000).

There are and will continue to be many different models for community-higher education partnerships. This is particularly important to the discussion of engaged 1890 land grant institutions and the communities in which they reside. The universities have many diverse characteristics, as do their communities. Demographics, race, culture and language are often aspects of great difference between campus and community perspective. Yet, historically Black institutions frequently find their success tied to the success of the communities in which they reside. The students they serve, the research they conduct and the expectations of the involvement by the community are all tied to the university's resident community.

Extensive qualitative and quantitative assessments of community partnerships suggest that unique strategies, components and characteristics are important to every community university partnership. The research reinforces the lack of generic responses in successful partnerships (Rubin, 2000). However there are common tenets that are reflected in the work of institutions over the past 20 years (Ilvento, 1997) (Bonnen, 1998) (Rubin, 2000) (Spainer, 1999). The community view of such partnerships is that six components are important to the work of universities with communities (McDowell, 2003). Goals and processes are mutually determined, including training for people who lead the organizations. Resources, rewards and risks are shared among all parties. Roles and responsibilities are based on each partner's capacities and resources. Parity is achieved by acknowledging and respecting the expertise and experiences of all members. All partners agree that anticipated benefits justify the costs, effort and risk of participation. Partners share a vision built on excitement and passion for the issues at hand. Partners are committed to ensuring that each partner benefits from the partnership. Finally, partners are accountable for carrying out joint plans and ensuring quality. These characteristics are reflected in the diverse partnerships that exist between communities and land grant universities across the nation (McDowell, 2003).

Scholars in the academy suggest that scholarly engagement requires reciprocity and mutuality, integration of engagement agendas with research, teaching and outreach, internal structures that embrace and facilitate engagement agendas, clarity of institution and community roles and commitments to engagement, frameworks for the maintenance of academic neutrality and resource commitments (Kellogg, 2000).

The 2004 Wingspread Conference on Higher Education Collaborative and Community Engagement and Improvement suggests that a "Diaspora model of college/university-community partnership is perhaps the need for Historically Black Colleges and Universities (Taylor, Dwyer, & Pacheco, 2004, p 34). Such a model reflects the historic intimacy between Historically Black Colleges and Universities and the community of residence. Community and university may often see themselves as one. The individual faculty and administrators may have acquired personal wealth and a level of educational status; however the institution itself may continue to struggle. The university often has no more political power than the community. Legislators, business and government agencies often overlook community and the institution (Taylor, Dwyer, & Pacheco, 2004). The central tenet of a Diaspora model for university engagement is the contemporaneous strengthening of the institution as well as the surrounding community (Taylor, Dwyer, & Pacheco, 2004, p. 36). Such a model would built on a framework of ; helping communities explore their own characteristics and potential, placing priority on helping the community

achieve a goal that may not be the primary goal of the university, emphasizing community self-worth and dignity and respect for the uniqueness of the community (Taylor, et al, 2004, p 36). This framework is complimentary of the existing environment and values the contributions of all partners.

Further study and deliberation is needed in the design and investigate of the “Diaspora Model “for community-university engaged partnerships in urban environments. Explorations of the roles of university leadership and community leadership in defining and implementing programs are important to this. Questions of the capacity to develop and implement programs as models of participatory democracy lead to new paradigms for both the university and the community.

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THE "M" FACTOR: EXPLORING THE IMPACT OF FORMAL AND INFORMAL MENTORING ON THE LIFE AND CAREER OF AFRICAN AMERICAN MALE COMMUNITY COLLEGE PRESIDENTS OF SOUTHEASTERN STATES

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ABSTRACT

This paper introduces an exploration into the concept and impact of mentoring in the academic career and personal life of African American male community college presidents in the southeastern United States. Mentoring emerging and current senior administrative leaders, particularly in the role of college president, is training and development area deserving of more research and detailed examination. Formal and informal mentoring of senior academic leaders may also play a significant role in increasing the low percentage of African American male community college presidents nationwide.

INTRODUCTION

The community college system serves as the solution for students and families who have become disenchanted with low performing secondary schools, adult continuing education students and professionals in need of skills retraining and developmental education. Meeting the diverse demands of these constituencies requires community college leaders to update their personal knowledge and skill set if we are to satisfy the outcome objectives of student retention, persistence and success for the system for which they serve.

Recent research suggests that a leadership gap looms only ten to fifteen years from today. In response, the community college as a nationwide entity should invest in appropriately training the next wave of leaders that will sustain the success and social relevancy of two-year and technical colleges for the diverse constituency aforementioned.

Formal and informal mentoring of talented emerging African-American male community college leaders will ideally address a contemporary concern that despite years of experience, educational credentials and training, representation at the highest management level of college president does not swing in the direction of this group.

BODY OF THE MANUSCRIPT

The research of Campbell and Tison (2005) and Watts and Hammons (2002) think the leadership gap of persons who are prepared to assume the high ranks of community college leadership positions as opposed to the high retirement rate is coming all too fast. Training of mid-level administrators and faculty must be implemented to accommodate this deficit. According to Herron and Major (2004), we have only about three years before the pinch is really felt. They add that the average years of service of college president has fallen to about six years, as opposed to thirty years at the beginning of the 20th century.

To this end, Ebbers et al (2002), Lovell et al (2003) and Amey, Vanderlinden and Brown (2002) suggest appealing to groups once marginalized for upper level leadership positions like minority groups of color and women is an initiative that is long overdue. Each additionally submits that leadership within the community college should reflect the demographic trends of the institution.

A closer look at the enrollment percentages reveals that gender enrollment favors women incrementally of the past ten years. However, unfortunately, the enrollment of African Americans, males more specifically, has continued to decline. Duvall (2003) and Brahney (1981) suggest that new century issues require a new century mindset and institutional leader.

The clear solutions for most of the dilemmas posed above encourage the utilization of comprehensive, detailed and forward thinking formal and informal mentoring development programs that are not afraid to tackle the difficult institutional challenges of student retention, diversity, and gender disparities with three-dimensional thinking. The open door admissions standard of most community and technical colleges is too vital a resource for suburban and



urban communities to outpace leader preparation. Addressing the training and development problem is one that will cement the security of the community college mission for generations to come.

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AFRICAN AMERICAN MALE TEACHERS EXAMINE THE EDUCATION EXPERIENCES OF IMMIGRANT CHILDREN IN GERMAN SCHOOLS

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ABSTRACT

This narrative focuses on the collective experiences and reflections of ten pre- and in-service African American and Latino teachers on a journey to Germany, where they had the opportunity to explore German education institutions and interact with teachers, school administrators, and immigrant children in a gymnasium or German high school. These student scholars returned home with insights worth sharing with teacher education programs, pre- and in-service teachers, school administrators, policy-makers and the public in general.

INTRODUCTION

In June-July 2008, ten student scholars accompanied by three program administrators from the City University of New York (CUNY) embarked on a journey to Berlin, Germany, with the purpose of exploring German education institutions. These student scholars were for the most part African American males enrolled in CUNY's Teachers As Leaders program, which endeavors to develop a cadre of teachers and leaders to replenish the teaching population in the New York City public system. The trip to Germany was sponsored by the Goethe-Institut of Germany, which promotes cultural exchange between German and American institutions, and the Deutsche Bank which is largely responsible for defraying the tuition and stipends of those student scholars in the program. That exploration afforded the participants an opportunity to reflect on their own education processes and classroom practices as pre- and in-service teachers. It is hoped that the insights shared in this narrative will inform education institutions, businesses, and government agencies in making decisions that will positively impact the lives of immigrant children in the short-term and the long haul.

THE GERMAN EDUCATION SYSTEM: AN OVERVIEW

An overview of the German education system and a summary of the PISA study are necessary in order to provide a broader context for making sense of the challenges identified by the African American scholars in regard to the experiences of immigrant children in German schools. The German education system follows a very rigid tracking system, consisting of three education options available for schoolchildren at the completion of the 4th grade. Some children are selected for pursuing their education in a German gymnasium or the equivalent of a high school leading to a university education; others are shuttled into a hauptschule which is a vocational school; and the rest are underachievers who get steered into a realschule or a certificate program whereby they be taught skills for menial labor. The German school system was evaluated in 2006 and ranked number 15th after the United States in a study conducted by the Program for International Student Assessment (PISA), which examined the achievements of middle school students in science, math, and reading among 41 participating nations. That ranking prompted Germany to initiate education reform efforts in order to improve its image in the international arena. Overall, the PISA study confirmed a long held suspicion about the underachievement of immigrant children in Germany. Notably, immigrant children of Turkish background and others, who do not possess near native competency in the German language, constitute the largest group of underachievers (25%) in German schools. Children in that group stand a slim chance of accessing post-secondary education, which is necessary for obtaining high paying jobs in

German society. It should be noted that the integration of immigrant population in German society has been slow to come about (Stern, 2000).

METHOD

The African American men teachers who visited Germany last summer did not travel with any prepared research agenda. They simply allowed serendipity to lead them into discoveries about German education institutions. The goal of that exploration was for those scholars to get a feel of what German educators and policy-makers are doing in order to improve the quality of education for all children in their schools. Those student scholars were able to engage in meaningful exchanges of ideas with teachers, schoolchildren, school administrators, and representatives from the Berlin Ministry of Education. Throughout that journey, school visits, structured workshops, and both formal and informal conversations were used as tools in order to help the scholars increase their knowledge about German schools and to identify some of the challenges facing the German education system.

FINDINGS

Through a variety of interactions with German teachers and school administrators, it became obvious to the African scholars that children with learning disabilities and those issued from immigrant communities (i.e., Turk, Albanian, Polish, and African) suffer a huge amount of neglect and disparity in German schools. Chief among such inequities are: (1) absence of culturally relevant materials and ineffectual instructional approaches for educating children of immigrant backgrounds; (2) absence of school staff who speak the languages and understand the cultures of the immigrant schoolchildren; (2) lack of respect for immigrant schoolchildren and their parents; (4) no apparent school-home partnerships and outreach efforts to immigrant communities; and (5) an apparent lack of appreciation for linguistic and cultural diversity in German education institutions. German teachers and school administrators seem to espouse a sink-or-swim approach toward the education of immigrant children and children with learning disabilities. Such an approach does not only put those school-age children at a disadvantage, but it also fosters conflicts between school personnel and the children and their parents.

IMPLICATIONS FOR THE AFRICAN AMERICAN SCHOLARS AND OTHERS

The widening gap observed between the academic achievements of immigrant children and those born of native German parents inspired the African American scholars to reflect on their own education processes and to look more closely at the schooling experiences of children from immigrant backgrounds in the United States. The student scholars were able to draw some parallels in terms of (1) the under-achievements and gapping graduation rates of Black and Latino children in comparison to Caucasian children in American public schools; (2) the under-representation of Black and Latino men and women teachers in proportion to White teachers; (3) the dearth of Black and Latino male teachers in comparison to female teachers; (4) the stigmatization of black male children and the disparate treatment of children with disabilities; and (5) the lack of culturally responsive pedagogy and understanding of children from differing backgrounds. All of those disparities beg for an extensive examination of access and equity issues in American public education (García, 2005).

SUMMARY

The African American scholars who went to Germany last summer raised serious education access and equity issues on behalf of the immigrant children in German schools. They also drew strong parallels between their own education processes and the schooling experiences of disadvantaged children in American public schools. Those kinds of experiences and reflections can help to strengthen teacher education programs and to guide public policy for enhancing education opportunities for all children.

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USING SERVICE LEARNING AND INFORMATION TECHNOLOGY IN THE AREA OF FINANCIAL LITERACY FOR HIGH SCHOOL AND COLLEGE STUDENTS

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ABSTRACT

“Using Service Learning and Information Technology in the area of Financial Literacy for High School and College Students,” is a paper based on an on-going, long project. The goal of this project is to demonstrate that (1) financial literacy in education and academics is crucial for economic advancements in society, (2) financial literacy is not discussed enough in high school or college, (3) many in society do not know enough about financial literacy, (4) the only time you really learn about the importance of financial literacy is when it is almost too late, and (5) a service learning program which addresses these areas with the use of information technology effectively can quickly clarify this often misunderstood area.

INTRODUCTION

Excessive financial pressures are placed upon young people, especially at a time when their financial resources are most limited. Many in this group are at great risk to make financial selections that are not most beneficial to them or their families because they lack a foundation of knowledge in financial matters. Few colleges and even fewer high schools in the United States provide training in this area.

Hence the Borough of Manhattan Community College (BMCC) has developed financial literacy workshops in which BMCC students have learned about such topics as credit, taxes, savings and budgeting, identify theft and insurance. These students will serve as Financial Literacy Ambassadors (FLAs) to mentor high school students in New York City.

Financial Literacy:

When it's your money, you should be able to spend it anyway you wish, right? Well, think again.

As a result of participating in the Accent on Student Success: Engaged Together in Service (ASSETS) initiative funded by Learn and Serve America and the Community College National Center for Community Engagement, we at the Borough of Manhattan Community College (BMCC) have discovered a number of areas of concern and opportunities for advancement in the area of financial literacy for high school and college students in the United States. Service learning programs combined with effective use of information technology continue to present enormous learning opportunities.

Financial literacy continues to be defined vaguely. It is defined differently by different people and organizations. For example, the U.S. Financial Literacy and Education Commission has defined financial literacy as “the ability to make informed judgments and to take effective actions regarding the current and future use and management of money.”

The National Endowment for Financial Education (NEFE) provides the following definition taken from a major study: “Personal financial literacy is the ability to read, analyze, manage, and communicate about the personal financial conditions that affect material well being. It includes the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future and respond competently to life events that affect everyday financial decisions, including events in the general economy.”

Lack of a uniform definition of financial literacy creates a more interesting problem when you ask people from different income brackets or people who work in different occupations. During a discussion with a business

professional, ask what they think young people should learn about finances. Then, ask the same question to: (1) someone receiving public assistance; (2) a homeowner, (3) a single parent. The results may be surprising.

People have a greater influence over whether they receive proper financial information. However, information regarding financial literacy is disseminated disproportionately by economic status and education level. Such dissemination is unintentional. The overall importance of financial literacy has been underestimated.

Not understanding the major components of financial literacy has contributed to the decline in the U.S. economy. Ignorance in key areas of financial has allowed people to take advantage of others and it has created a consumer with "Sub-prime credit."

It is no surprise that the "sub-prime" mortgage crises has played a major contributing factor in the current economic conditions in the United States. It is no surprise that the U.S. Treasury and Federal Reserve have taken immediate and decisive steps to shore up confidence in Fannie Mae and Freddie Mac. It is no surprise that according to an Ernst & Young study, close to sixty percent of middle-class retirees will probably run of the money if they maintain their current or pre-retirement lifestyles. However, despite these findings, either very few steps have been taken or the steps taken are not well known to address financial literacy among youth in American.

To address this concern, the Borough of Manhattan Community College (BMCC) has developed and implemented a service learning program in financial literacy for its students and community members through its participation in the Accent on Student Success: Engaged Together in Service (ASSETS) initiative funded by Learn and Serve America and the Community College National Center for Community Engagement.

The BMCC initiative has brought together several areas within the college including the BMCC Office of Academic Affairs, Office of Student Affairs, and the Center for Continuing Education and Workforce Development, college faculty within the accounting and business departments as well as the Financial Planning Association of New York, several New York City public high schools, and the business community of Manhattan.

National data show that young people in high school know very little about economics and basic finances. In addition, for college-age students, there is a growing trend; they are accruing credit card debt and high student loan balances.

Students will continue to learn about such topics as credit, taxes, real estate, savings and budgeting, investments, insurance, etc. A group of them will be recruited based on a written essay and their academic performance at BMCC to be Financial Literacy Ambassadors (FLA).

Besides participating in the workshop, the FLA will be mentored by a member of the business community and BMCC faculty and participate in service learning with New York City high school students. The FLAs will reflect on what they learned in the workshop, which will be demonstrated through focus group surveys and reflective pieces written by the students at the end of the workshop.

The service learning component occurs when the FLAs share what they have learned with their high school counterparts. In consultation with the Office of the Superintendent of Manhattan High Schools, BMCC will target five high schools for participation in the project, whose student profile is similar to that of BMCC's.

The FLA will provide service learning to the high school students through individualized and small group advisement supplemented by visits to financial institutions where the high school students can see real applications of what they have learned from the BMCC FLA. Like the ambassadors, the high school students will gain an understanding of how to organize budgets, deal with credit in a responsible manner, and save for the future, among other topics. The success of the service learning aspect of the proposal with the high school students will be determined by their response to a survey comparable to the one administered to the BMCC FLA.

The project is on-going and is only in its second full year of development. However, the goal of this project is to demonstrate that (1) financial literacy in education and academics is crucial for economic advancements in society, (2) financial literacy is not discussed enough in high school or college, (3) many in society do not know enough about financial literacy, (4) the only time you really learn about the importance of financial literacy is when it is almost too late, and (5) a service learning program which addresses these areas with the use of information technology effectively can quickly clarify this often misunderstood area.

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TERTIARY EDUCATION IN GHANA: EXPANSION AND THE ROLE OF INFORMATION COMMUNICATIONS TECHNOLOGY

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ABSTRACT

Information Communication Technology (ICT) is an important asset for Ghana's national development. To fully participate in the 21st century global mainstream, Ghana must integrate ICT into its service sectors, especially tertiary education. Public universities are at the forefront of national development, which entails the production of human capital. Today, Ghana's universities are responding to the phenomenon called expansion. Among expansion's characteristics are: (a) increase student enrollment, (b) demand for relevant curriculum, (c) new management and business processes, and (d) information storage, retrieval, and dissemination. ICT is capable of addressing expansions demands. This research investigated expansion in tertiary education and ICT's role in meeting the challenges it poses. Attention focused on ICT's integration into five university dimensions, student services, curriculum and instruction, budget and finance, academic records, management and operations. The Information and Communications Technology and Expansion Survey (ICTES) was used to gather information from senior university officials and lecturers.

INTRODUCTION

ICT is a tool that universities can use to broaden access and deliver higher education. ICT refers to the use of electronic devices and software to create, store, manage, process, transmit and retrieve information. It is therefore imperative that universities integrate ICT to support efforts toward increasing access and expanding higher education, and manage the growing student population. Tertiary education policy that supports ICT is a way to address expansion. In Ghana, for ICT to be successful in enhancing the reach and quality of teaching and learning, policy makers need to develop a national framework for ICT's integration into the education systems. The Ghana Government has signalled its support for ICT in all segments of society, particularly education. In 1997, the minister of finance declared, "In view of the positive effects of the application of information technology on development, Government will ensure that key institutions of state machinery are linked to the Internet. All the science resource centres will be connected to the network as and when they are commissioned. The program to link the Universities together and to the Internet will also be pursued." The Government of Ghana (GoG) and the Ghana Ministry of Education (MoE) also recognize ICT's potential for development and anticipate its introduction at all educational levels. In 2002, the minister of education asserted that, "With the inability of the country's public universities to admit about 60% of qualified applicants each year because of inadequate infrastructure and teaching personnel, an efficient use of ICT in education would be an important asset for the promotion of distance education in all educational institutions."

PURPOSE

Ghana's public universities produce the varied forms of human capital necessary for it to eliminate poverty, disease, and underdevelopment. The Paris tradition on which the first tertiary institution, the University of Ghana (UG) was modelled came to influence higher education in the country (Effah & Mensah Bonsu, 2001). The University of Education Winneba (UEW) and University of Development Studies (UDS), founded later, were responses to the pressing need for human resources to advance the education and agricultural sectors of society.

Tertiary institutions depend almost entirely on government funding. Like universities elsewhere, Ghana's universities are influenced by internal and external forces. Ogunrinade (1997) observed that universities have been affected by the growth in student enrolment, which has overwhelmed financial capacity.

This research investigated expansion in tertiary education in Ghana and Information Communication Technologies (ICT) role in meeting its challenges. The inquiry focused on expansion's impact and ICT's value in various university dimensions, particularly student services, curriculum and instruction, budget and finance, academic records, and university management and operations.

METHODOLOGY

The Information Communication Technologies and Expansion Survey (ICTES) was used to collect data. The ICTES consists of five subscales (student services, curriculum and instruction, budget and finance, academic records, and university management and operations) comprised of 42 items constructed on a 5-point Likert scale ranging from 5 (strongly agree) to 1 (strongly disagree). The ICTES development process entailed the delineation of specific domains, item construction, and content validation. Professionals in the field provided feedback on the survey's five domains, items, and technical adequacy. Cronbach's alpha reliability for the ICTES was .89.

Procedures. Eighteen senior administration officials and twenty-four lecturers were selected from among the University of Cape Coast's personnel and asked to complete the ICTES. Lecturers represented all the faculties in the university, arts, business, science, social sciences, education, and agriculture.

Research Questions. Three questions were framed to guide the inquiry: (a) What is the impact of Expansion on Ghana's public universities? (b) what technologies are viewed by tertiary institution leaders as essential to the organization and amelioration of Expansion? and (c) to what extent and how are Ghana's university leaders implementing ICT to address Expansion?

EXPLAINING EXPANSION

According to Sutherland-Addy (1993), expansion in Ghanaian universities has been characterized as the increase in student enrolment, staff recruitment, new programs and course structures, the provision of virtual and distance education, new technology for instructional and administrative purposes; academic facilities such as libraries and laboratories; the development of interuniversity exchange programs, and new income generating projects. Deer (2001) postulated that expansion as applied to higher education is an imprecise term and is more than increased numbers of students in the system. Pedagogically, expansion concerns the extent of, and availability of new qualifications. For example, the creation of multi-disciplinary courses; initiation of new-degree programs, the formal definition of new levels of study, qualifications at sub-degree levels, the development of master's degrees, the re-organization of course syllabi and examination practices, and the development of credit accumulation and transfer hours. These pedagogical aspects of expansion are influenced by their operational characteristics, that is, the extent to which they are accompanied by adequate levels of investment, materials, faculty, staff, and infrastructure.

For Ghana, expansion of tertiary education today, appears to be the result of socio-political necessity at the national level combined with a direct operational economic necessity at local and regional strata. Studies have shown that economic growth does not take place without an educated workforce (Solow, 1956; Carre, et al 1971; Matthews, Feinstein, et al 1982) but the exact nature of the correlation between the two remains undetermined. Nevertheless, according to Deer (2001), the economic growth may have taken place because of expanding educational opportunities in certain countries such as Britain, Germany and France. Despite the absence of a definitive equation that demonstrates how historical events have persistently followed the logic that asserts that education precedes any economic development (Kindleberger, 1964), it is plausible to suggest that nations, which have experienced accelerated economic growth and increased wealth have been able to invest more in education.

JUSTIFYING EXPANSION IN GHANAIAN PUBLIC UNIVERSITIES

Several factors contribute to the demand for tertiary education in Ghana: (a) Educational reforms have increased the number of candidates that qualify to enter universities, (b) the governmental directive to universities to absorb the back-log of two successive A' Level cohorts who had not been admitted because of university closures over the years, (c) the labor market favours university graduates, and (d) the introduction of new programs and university calendar changes have increased the opportunity for people to access higher education. In Ghana, large

numbers of people seek access to tertiary education, they hunger for knowledge, and there is a need to change tertiary education to provide an economically viable generation and a pool of human capital to aid national development. Statistics show that for the 2005-2006 academic year, 55% of qualified applicants were admitted to all public universities and 78% into the polytechnics (Kwapong, 2007). As far as Shultz (1990) is concerned, proponents of human capital accumulation have emphasised the correlation between education and income to argue that the general training and qualification of workers is a key factor in a country's economic growth. Thus if Ghana is to escape from its present underdeveloped status, expansion is necessary. Education has been presented as a protection against unemployment as it makes individuals more entrepreneurial and adaptable through increased flexibility in the face of change and difficulties (Deer, 2001). Human capital theorists have also presented education as one of the most productive means of growth investments while simultaneously upholding it as an equalising social device. Sociologically, the impact of tertiary education expansion on the individual is the equalisation of life and social opportunities. Parsons (1961) and Bernbaum (1977) alluded to the relationship between education and status to show education to be an efficient means of opening up professional opportunities and reducing the impact of family backgrounds on an individual's achievement. The point here is that in Ghana many people who have made it to the highest level of economic achievement have affluent family backgrounds (Nsiah, 2003). Expansion in tertiary education allows individuals, irrespective of social or economic history access to university education in whatever field and through prevailing instructional methods.

Deer (2001) noted that since the end of the Second World War, the sociological debate surrounding expansion has revolved around two notions (a) democratisation, which has been implicitly rooted in a modern agenda and (b) reproduction, which has been potentially leading to a "post-modern" era. One justifier of expansion of tertiary education presented it as a source of personal and social liberation. Deer summed it up as follows: The image of the untapped pool of abilities was used to justify expansion on the basis of the equalisation of social chances and the democratisation of education. What was implicitly expected was that unlimited expansion would eventually bring the sector to a natural state of equilibrium where all those who would previously have been deprived of a higher education experience for more structural reasons would legitimately find a place in the system. (p. 15)

Hopper and Rouke (2000) maintained that the provision of tertiary education is an essential key to development and poverty reduction. According to Nsiah (2003), the growth and expansion of Ghana's universities, unlike other countries is imperative. Ghana's universities must grow because the nation needs these institutions to develop its people. University education should help the nation and its people "understand the complex problems of politics and economics, which have been the problems of our under-development" Nsiah, 2003, p. 1). In a country where 90% of the population is composed of rural dwellers below the poverty levels, the pressure for the country's public universities to expand and create economic empowerment for all can be understood. Rural dwellers are largely unable to access private and expensive universities. Yet, there are thousands who need university education in Ghana, but cannot be served by the state universities for lack of space and funds to expand existing facilities (Nsiah, 2003). Right now Ghana is one of many countries, which Ogunrinade (1997) referred to as going through a educational system crisis. Coombe (1991) highlighted the fact that the crisis is inherent in every educational system because they will be faced with "shortages of everything but students" and that the explosive demand for education, lack of finance and absolute management methods will always fuel the crisis of diminishing resources.

With transformations taking place globally and in Ghana's economy, the gap between the skill and knowledge needs of the public sector, commerce and industry, and what traditional tertiary institutions provide is growing and the changes in these needs unmet by the existing tertiary education system is creating a crisis, which is creates opportunity for private universities and institutions of higher learning. Private universities are adapting to the needs of the consumer driven market and are offering programs in formats convenient for students based on market needs (UCC Corporate Strategy, 2003). Ghana's public universities have reached the point of transforming the education they provide and the challenge for them to remain relevant and effective to serve their *raison d'être* in the changing global and national environment.

Djagmah (n. d.) observed that Ghana's government has shifted its focus and resources towards providing universal basic education; making it increasingly difficult to channel significant amounts to the tertiary education system. Ghanaian universities are faced with the deterioration of the academic infrastructure, poverty level wages and poor conditions of service for faculty and administrative staff, shortages of books and laboratory materials, discontinuation of journal subscriptions, inadequate numbers of computers and communication equipment. Staff with doctoral degrees are not being recruited in sufficient numbers in key areas like Mathematics, Statistics, and Computer Sciences and retired faculty members are retained to fill vacancies. (Djagmah, n. d.). Djagmah argued that

without expansion of the academic facilities and with inadequate maintenance of existing facilities the university is unable to admit the many new students who qualify for admission each year. Currently three out of five qualified candidates fail to gain admission to Ghanaian universities.

UNIVERSITY OF CAPE COAST ICT RESOURCES

UCC's existing ICT structure assists in teaching and learning, communication, and the management of records in three sectors, academic, administrative, and commercial computing. The academic computing sector is responsible for training staff and students in computing. Staff in these centres are responsible for maintaining the university's technology and providing technical support. These centers are small in size having five to ten computers and a maximum of 50 in the Faculty of Education. Each centre has at least one resource person responsible for the facility. The centers are controlled and supervised by the various departments and used by their students and faculty for training in basic computing skills, teaching and learning and use of the Internet for research. Few lecturers use computers and LCD's for classroom presentations. The university recently introduced an e-learning system, which is in the second year of operation. However, it is only being used in two programs namely; Masters of Science in Non Governmental Studies (MSC.NGO) and Masters of Education in Information Systems (MED.IT).

The administrative computing sector is responsible for managing student and staff records. This is the Data Processing Unit and is referred to as the Student Records and Management Information Section. Presently, this sector is responsible for automating students' academic records. With the help of a LAN, the unit is able to store information about student grades and course registration. It also provides transcripts and identity cards for students and staff. The third sector is the commercial computing sector, which is located in the university's main library. This centre is composed of two classroom areas with 30 PCs each, a small area with about ten computers for senior personnel and a large hall with about 80 PC's. The ICT center has a reserve of computers for students to rent and use for browsing, however, students pay an ICT user access fee.

Infrastructure and Personnel ICT skills

In order for ICT to be effective and influence organizational objectives, an appropriate infrastructure must exist and the specific technology being introduced needs to be compatible with users' experiences and values. These issues are fundamental to ICT's capability to address expansion. Tertiary education in Africa is facing a critical challenge to meet 21st century demands (Darkwa & Mazibuko, 2000). As more people seek access to higher education, academic courses are being diversified to meet enrolment and in the process, educational institutions have become larger and more complex. At the same time, resources to acquire ICT infrastructure has been difficult to obtain.

University administrators and lecturers exhibit a range of ICT skills from moderate to proficient with a majority able to word process for a variety of tasks and use the internet for email and browsing. With the computerization of students' grades, most lecturers use the LAN, UCC Online Students Information System (OSIS) to record students' course outcomes. A few still rely on administrative staff to manage students' records. Overall the use of computers is high among lecturers and administrators in the university.

In assessing the ICT skills of staff it is important to note that their perceptions toward technology influence their use. According to Bosu (2002), University of Cape Coast lecturers had a positive attitude toward educational technology and agree that it is effective and useful for instructional purposes. Staff training is the responsibility of the computer centre. The centre organizes training in basic computing and the creation and use of web pages for academic staff. The University has a limited number of technicians and programmers to provide the needed services for the university. Technicians' skills are efficient for computer maintenance, hardware repair, and managing the university's communication network.

The university does not have a written ICT policy to manage its facilities use, however, it does have a strategic plan drafted and a committee has been formed to write an ICT policy. The ICT facilities in the computer center, Data processing unit and ICT centre are managed and controlled centrally in the university. Computer laboratories are managed by the various departments, schools, and institutes where they are located.

RESULTS

Students Services

Positive customer service and relations are important to an organization's clients. Efficiency that simplifies and makes administrative tasks easier and enables immediate access to and consumption of information is also required in 21st century organizations. ICT's integration into the student services dimension of a university's operations allows timely response to client needs. Eight items were framed for the student services domain of the ICTES, which provide a window to view the extent of ICT's integration into this aspect of university operations (see Table 1).

Table 1. *University Administrators and Lecturers Responses to Student Services Subscale*

Items	N	Mean
1. Students can access course schedules electronically.	30	2.63
2. Student applications are processed electronically.	30	3.33
3. The university uses software to maintain biographical and demographic data	30	3.77
4. The university uses software to maintain student personal information.	30	4.13
5. Students use software to register for courses.	30	4.33
6. The university uses software to maintain student enrolment data.	30	4.57
7. The university uses software to generate student personal information.	30	4.63
8. Faculty members use software to record and report student grades.	30	4.67
Average Mean of Student Services		4.01

Note: Mean scores above .5 are rounded to the next response option.

Expansion in the form of student enrollment impacts the University of Cape Coast. In the 2007-2008 academic year, 11, 046 students qualified for university admission. Only 4, 136 (38%) were admitted. Student enrollment has increased 40% over the past five years. This increase requires student services operations to keep pace with and respond to the challenges presented by this growth. Effective and efficient client services depend upon appropriate mechanisms and tools to perform tasks. Expansion is also characterized by students' demand for new courses and accommodations for registration in the system. The university must also maintain accurate student data and generate information upon request. Student increase engenders the need to expand storage capacity, maintain and properly manage records for easy access to student data. Today, the ability to serve client needs in part determines an organization's viability and longevity. Ghana's public universities compete with private universities that are seeking a place in tertiary education. The ability to employ ICT in response to client needs place addition pressure on public tertiary institutions. As can be seen in table 1, ICT use for student services is prevalent at the University of Cape Coast. Respondents agree or strongly agreed with six of the eight items. The mean score separation between items 6, 7, and 8 is minimal, indicating extensive use of ICT in these areas. Mean scores for Items 1 (2.63) and 2 (3.33) provide another view of ICT and expansion. At the present time the university does not use ICT that allows students to access course schedules, which could assist them in personal planning, and it is uncertain whether applications are being processed electronically.

Curriculum and Instruction

Expansion is more than the increase in student enrollment. Because of changing global and national realities, the tertiary education system in Ghana must respond by offering new programs and courses to accommodate employment options and make viable a student population for 21st century challenges. ICT is recognized as an important factor in democratization and social equalization in developing countries. As can be seen in Table 2, mean responses for items 11 (3.47), 13 (4.00), 14 (4.03), 15 (4.03), 16 (4.07), and 17 (4.23) provide evidence that the UCC is responding to expansion based upon recognition of national development, local conditions, job market realities, student interests, and 21st century economic realities. With regard to ICT in this domain, respondents were uncertain as to whether the university offered courses online via distance education technology. In one way, the university is responding to expansion appropriately, however, given ICT's capability to directly influence programs, courses, and their delivery, its potential is not being exploited. Aware that many Ghanaians live in rural areas and desire tertiary education, ICT remains unexploited as a program and course delivery mechanism to

potential students. The university has a centre for continuing education with an enrollment of 6,000 in various parts of the country. However, providing these students instruction via ICT has not occurred.

Table 2. *University Administrators and Lecturers Responses to Curriculum and Instruction Subscale*

Items	N	Mean
9. The university offers courses online via distance education technology.	30	2.53
10. Because of relevant curriculum, students can be assured of gainful employment upon graduation.	30	3.40
11. University programs curriculum content are linked to employment	30	3.47
12. Faculty members integrate technology into their teaching.	30	3.53
13. The university has expanded the number of degree programs to accommodate student interests.	30	4.00
14. This university has introduced new programs that are the result of recent national development policies.	30	4.03
15. The university curricula have recently undergone major revisions to reflect more accurately local conditions.	30	4.03
16. The university's has introduced new programs that are a result of 21st century economic realities.	30	4.07
17. The university has increased the number of degree programs to accommodate Ghana's changing job market realities.	30	4.23
Average Mean of Curriculum and Instruction		3.70

Note: Mean scores above .5 are rounded to the next response option.

Budget and finance

Respondents appear to have limited knowledge of the university's budget and finance operations. Most lecturers and some administrators who are not section or department heads are never involved in purchasing or acquisitions and are not informed about the university's financial processes. This may explain this domain's average mean score of 3.20, which was the lowest among the ICTES subscales. Respondents agreed with items 24 (3.83), and 25 (3.93), managing student fees and salaries, respectively. Respondents were uncertain about ICT's role in university budget and finance items 18 through 23. In the present financial accountability environment, using ICT in all phases of budget and finance creates an effective and efficient organization. Moreover, software applications increase accountability and productivity.

Table 3. *University Administrators and Lecturers Responses to Budget and Finance Subscale*

Items	N	Mean
18. The university uses software to conduct internal audits.	30	2.70
19. The university uses software to record purchases.	30	2.73
20. The university uses software to track and document expenditures.	30	2.80
21. The university uses software to manage its inventory of materials and supplies.	30	2.87
22. The university uses software to budget and plan finances.	30	3.30
23. The university uses software to track all cash flows.	30	3.47
24. The university uses software to manage student fees.	30	3.83
25. The university uses software to manage salaries.	30	3.93
Average Mean of Budget and Finance		3.20

Note: Mean scores above .5 are rounded to the next response option.

Academic records

Respondents agreed with six of the eight statements in the Academic Records domain. As can be seen in Table 4, mean score responses to items 28 (3.60), 29 (3.67), 30 (3.90), 31 (4.07), 32 (4.13), and 33 (4.50) show agreement. These results indicate that ICT is being used extensively for academic record keeping. Thus the traditional bureaucratic label of paper shuffling is not an appropriate characterization based upon ICT use. Results in this domain are encouraging also because they show the university's recognition of ICT's role in data management.

Table 4. *University Administrators and Lecturers Responses to Academic Records Subscale*

Items	N	Mean
26. The university uses software to make course content available to students.	30	2.93
27. The university uses software to schedule courses for teaching and examinations.	30	3.03
28. The university uses software to monitor student progress.	30	3.60
29. The university uses software to score and record student test results.	30	3.67
30. The university uses software to maintain student biographical and demographic	30	3.90
31. The university maintains an information database on its graduates.	30	4.07
32. The university maintains an information database on courses available.	30	4.13
33. The university uses software to generate student academic transcripts.	30	4.50
Average Mean of Academic Records		3.73

Note: Mean scores above .5 are rounded to the next response option.

University Management and Operations

Items in this domain were designed to elicit responses that would inform about UCC's relationship with ICT in the policy, planning, and infrastructure arenas. The average mean score for this domain was 3.42. It is one of the three dimensions that consider ICT as software for processes and operations. Table 5 shows that respondents agreed with items 39, 40, 41, and 42 statements. Responses affirm that the university (a) uses ICT to improve administration and management, (b) has a strategic ICT, (c) 3) has incorporated ICT into its mission statement, and (d) has been incorporated ICT into the mission statement. What is surprising is respondents' ambivalence with regard to item 34, published standards for ethical use of ICT. ICT can benefit a university community; however, without supervision there is the potential of its misuse. Likewise, mean scores for items 35, 36, and 37 give reason for pause recognizing the university's need to meet the challenges of expansion. These responses relate uncertainty about crucial institutional performance and ICT integration. It is apparent from responses that the university needs to address infrastructure capacity to take full advantage of ICT.

Table 5. *University Administrators and Lecturers Responses to University Management and Operations Subscale*

Items	N	Mean
34. The university has published standards for the ethical use of ICT.	30	2.90
35. ICT is used to facilitate communication between university administrators and faculty members.	30	3.10
36. The university ICT infrastructure supports wireless networking and remote access.	30	3.20
37. The university maintains a secure, fast, high-capacity network and computing infrastructure.	30	3.33
38. The university uses software to collect and analyze data for planning and evaluation.	30	3.40
39. ICT is used to improve administration and management.	30	3.57
40. The university has a strategic ICT plan.	30	3.63
41. The university maintains an interactive website where interested parties can access information.	30	3.67

42. ICT has been incorporated into the university's mission statement.	30	4.00
Average Mean of University Management and Operations		3.42

Note: Mean scores above .5 are rounded to the next response option.

CONCLUSION

The University of Cape Coast faces a number of challenges for ICT to meet the effects of expansion. The challenges include the management of vast amounts of data because of increased enrollments and ensuring the accuracy and uniformity of information. There is also the need to communicate and share accurate information expeditiously in the university and with external constituents. ICT as a delivery mechanism in curriculum and instruction is a particular pressing need. As well, provisions for lecturers and staff to acquire appropriate skills to use ICT effectively and efficiently must be viewed as a priority.

The high costs associated with ICT acquisition and maintenance presents another expansion challenge. Government support to tertiary institutions continues to decline at this critical time when universities are attempting to negotiate expansion. According to Sumner and Hostetler (1999), institutions of higher education in developing countries need for assistance in the use of ICT. Assistance refers to the availability of technical support and capacity building of staff, be it academic or administrative. ICT use requires continual training to remain abreast of technology's changes. However, tertiary institutions lack the funds to organize training programs, which consequently results in obsolete technology skills.

ICT for teaching and learning to address increasing enrollment requires attention given that the university's lecture halls are not equipped with or constructed to use ICT. This means that lecturers, when equipment is available, have to transport the technology used for instruction from room to room. Finally there is the issue of authorized and antivirus software. These are expensive and the procedure of procuring them is tedious.

Individually, UCC and other public universities in Ghana have made strides toward securing and integrating ICT into its processes and operations. There is more work to be done particularly in curriculum and instruction and professional development. Funding that will permit the continuation of efforts to transform operations using ICT is uncertain, but necessary. Making ICT an integral part of university processes will assist in meeting the demands of expansion. Accommodating student needs through ICT is a viable response to expansion. In addition, providing new programs and courses to students via ICT is an intervention that can bring to fruition national development goals.

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AN EXCEL BASED SOLUTION MODEL FOR THE MACHINIST'S SEQUENCING PROBLEM

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ABSTRACT

The machinist's sequencing dilemma is defined as a single machine sequencing problem of n -jobs which are applied to a single product. While each job adds value to the product, the accumulated product value is always at risk due to a given chance that the next job will fail. Once a job fails the product is considered defective and cannot be repaired. The goal is to find the sequence of jobs which minimizes the expected value of failure. This sequencing problem, which we call the "machinist's dilemma", depends on the value of each job and the likelihood that the job will fail. We offer an Excel based template which can be used to solve such a problem in a practical manner. The template can be easily modified when a large number of jobs are considered.

INTRODUCTION

The machinist's sequencing dilemma (MSD) is defined as a sequencing problem where the central question is to find the proper sequence of a series of jobs, each with a probability of failure and with an independent value added to a product be sequenced in order to minimize the overall loss of accumulated cost. The accumulated cost at risk involved in this scenario is sequence dependent as well as not intuitively obvious. This problem is shown to be NP hard (White and Asllani, 2008) and as such the goal is to find solution alternatives which are both optimal and practical. Improper sequencing in the MSD can lead to substantial losses; that is, optimal solutions may result in significant savings over suboptimal approaches.

The purpose of this paper is to introduce an Excel based solution template for the machinist's dilemma sequencing problem. The template uses Excel's Solver and is based on the mathematical (nonlinear) programming formulation of MSD and provides optimal solutions to the problem. In addition, the template can be easily modified and is appropriate for large problems.

MSD AND ITS MATHEMATICAL FORMULATION

In the MSD problem, n jobs must be performed on a given product. Associated with each job j is a value p_j ($j = 1, 2, \dots, n$) and a probability of failure f_j with $0 < f_j < 1$. The jobs will be processed sequentially until one job fails. In that case the product becomes defective and not repairable. The value of jobs accumulated up to that point will be lost. If no job fails the product is not defective and no losses occur. For any sequence S , the accumulated value of the k -th job is the value added of the first k jobs calculated as $C_{\max(k)}^S = p_{s(1)} + p_{s(2)} + \dots + p_{s(k)}$, where $p_{s(i)}$ is the processing time of job i in sequence S . Job processing is statistically independent and so for any sequence S the probability that k -th job will be carried out is $Q_k^S = q_{s(1)} q_{s(2)} \dots q_{s(k-1)}$ where $q_{s(i)} = 1 - f_{s(i)}$ is the probability (Q) that job i for ($i = 1 \dots k$) in sequence S will not fail.

For processes with a small number of operations, this approach is feasible and not time consuming. For determining the combinatorials of this type of problem requires the calculation of a factorial; that is, the possible number of sequences of K processes is $K!$. The natural break point of effort for the decision tree solution presented in this paper is 5 or perhaps 6 operations ($5! = 120$ combinations; $6! = 720$ combinations). For pieces of work

requiring 20 machining processes, the possible number of sequences (20!) equals 2.43×10^{16} and is not feasible using our methods. If, on the other hand, an algorithm can be found to find the first process, that process can be removed from the alternative list of choices and the algorithm can be repeated on the remaining choice continuing until a final solution is determined.

The following 0-1 mixed integer non-linear model is the basis for the proposed Excel template design. Notations for the model are:

$j = 1, \dots, n$ job index used as a unique identifier for each job;

$k = 1, \dots, n$ job index used to identify the position of a job in a given sequence;

p_j = Processing time for job j ;

f_j = Probability of failure for job j ;

$x_{jk} = 1$ if job j is assigned to the k -th position in the sequence;
0, otherwise;

$C(k)$ = Completion time for the job in the k -th position in the sequence;

$P(k)$ = Processing time for the job in the k -th position in the sequence;

$f(k)$ = Probability of failure for the job in the k -th position in the sequence; and

$E(k)$ = Expected value of failure for accumulated makespan in the k -th position in the sequence.

Using the above notations, a 0-1 mixed integer non-linear formulation is presented:

$$\text{Minimize} \quad Z = E(1) \quad (1)$$

subject to

$$\sum_{j=1}^n x_{jk} = 1 \quad k = 1, \dots, n \quad (2)$$

$$\sum_{k=1}^n x_{jk} = 1 \quad j = 1, \dots, n \quad (3)$$

$$P(k) = \sum_{j=1}^n x_{jk} p_j \quad k = 1, \dots, n \quad (4)$$

$$C(k) = \sum_{s=1}^k P(s) \quad k = 1, \dots, n \quad (5)$$

$$f(k) = \sum_{j=1}^n x_{jk} f_j \quad k = 1, \dots, n \quad (6)$$

$$E(n) = f(n)C(n) \quad (7)$$

$$E(k-1) = f(k-1)C(k-1) + [1-f(k-1)]E(k) \quad k=2, \dots, n \quad (8)$$

$$x_{jk} = \{0,1\} \quad j = 1, \dots, n \quad k = 1, \dots, n \quad \text{and} \quad (9)$$

$$C(k), P(k), f(k), E(k) \geq 0 \quad k = 1, \dots, n \quad (10)$$

Equation (1) is the objective function. The goal here is to minimize the expected value of failure in the first position. Note that this is a recursive function which includes all the decisions made in all positions. Equations (2) and (3) assure that only one job is assigned to each sequence position and a job is assigned to only one sequence location, respectively. Equation (4) determines the processing time, and equation (5) determines the accumulated value at risk of the k -th position in the sequence. Equation (6) identifies the probability of failure of the job in the k -th sequence position. Equations (7) and (8) recursively identify the expected value of failure for all positions 1

through k . Finally, equation (9) and (10) represent the integrality and non-negativity constraints.

If n is the number of jobs to be sequenced, our model has $n^2 + 4n$ variables. When the number of jobs increases, the number size of the model with respect to decision variables will increase significantly. For example, a five-job scheduling problem requires 45 decision variables and a 10-job scheduling problem requires 140 decision variables. When more than 20 jobs are considered, the number of decision variables and constraints can become well above 500. Further, equations (7) and (8) make this a non-linear programming model and the complexity of the problem increases. Such large models make the implementation of the proposed mathematical model very time consuming and impractical.

However, since the solution provided by such models is optimal, operations schedulers should consider the use of such models when the number of jobs is relatively small. Scheduling complexity in such cases can also be avoided by preparing a user-friendly interface for the purpose of data entering and solution interpretations. The next section provides an MS Excel template and Excel's Solver Add-Ins as an optimization tools.

MS EXCEL TEMPLATE FOR THE MSD

Figure 1 illustrates the formulation of the MSD model when there are 10 jobs to be sequenced. There are three main sections to this model: data entry, set of constraints, and objective function. In the data entry section, the user will enter the value for each job (column B) and failure rate (column C). Also this section will calculate the cumulative value for the initial sequence (column E) and the expected value of the initial sequence (column D).

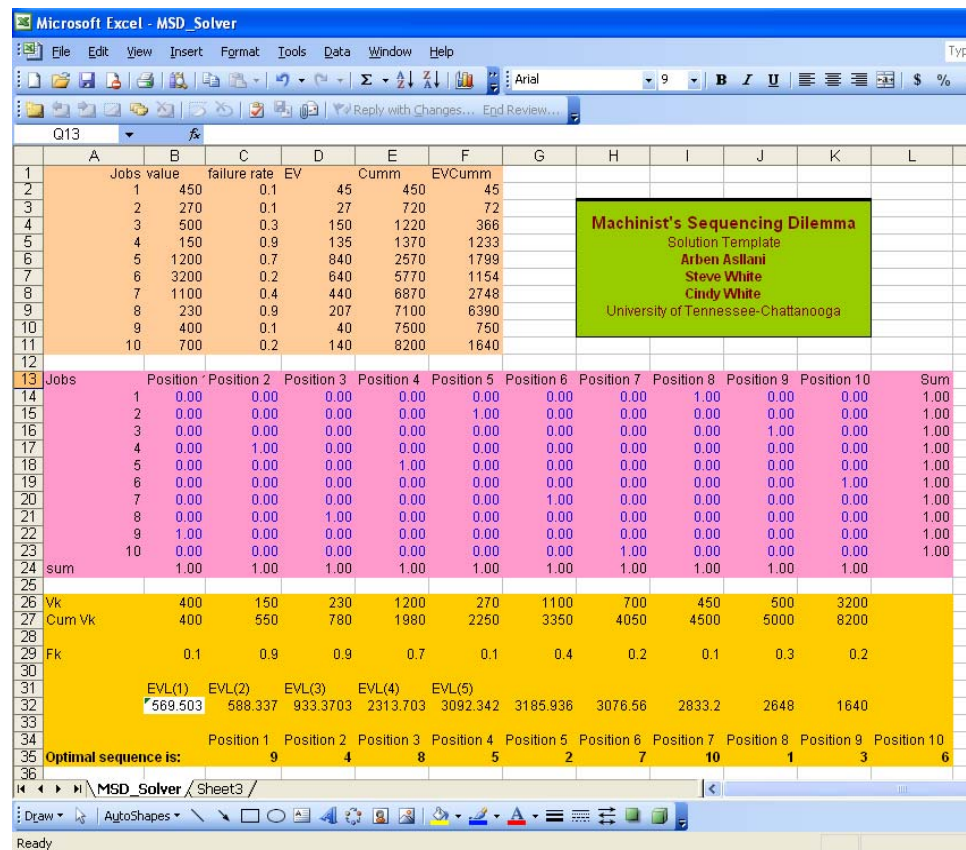
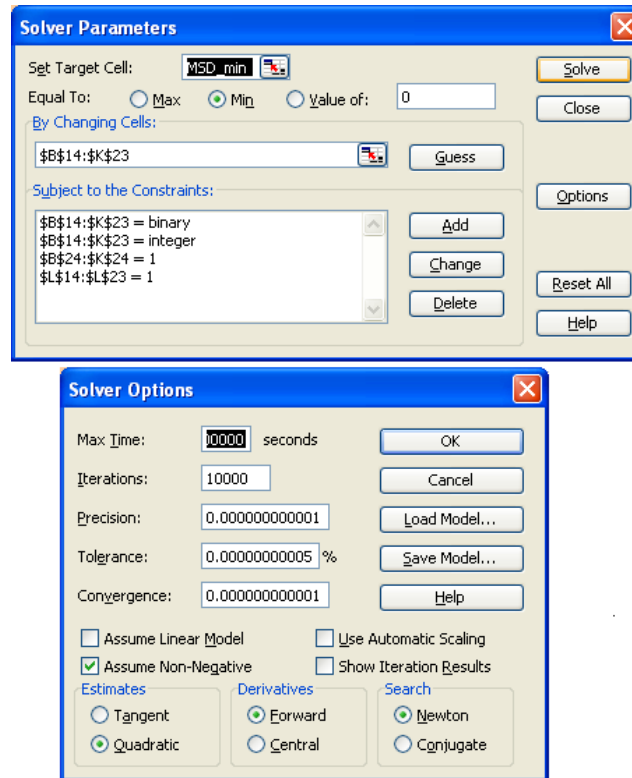



Figure 1: Excel based formulation of the MSD problem

Figure 2 shows the Solver setup. MS Solver, an add-ins in the MS Excel, is a powerful optimization tool which can be used for both linear and nonlinear formulations. It allows seeking a minimum value for the target cell (our objective function) by changing another set of values (our decision variables). This minimization process occurs under a set of constraints which also can be added gradually. Under the option section (shown separately in


Figure 3) the modeler can select a certain degree of tolerance, precision, and convergence. Also, the decision maker can select the maximum number of iterations if an optimal solution can not be reached, and the time to search for the solution.



Solver Parameters

Set Target Cell: 

Equal To: ☐ Max ☒ Min ☐ Value of:

By Changing Cells: 

Subject to the Constraints:

Solver Options

Max Time: seconds
Iterations:
Precision:
Tolerance: %
Convergence:

☐ Assume Linear Model ☐ Use Automatic Scaling
☒ Assume Non-Negative ☐ Show Iteration Results

Estimates: ☐ Tangent ☒ Quadratic
Derivatives: ☒ Forward ☐ Central
Search: ☒ Newton ☐ Conjugate

Figure 2: Solver Setup for MSD Problem

CONCLUSIONS

This paper introduces and demonstrates an Excel based solution to the MSD problem. Solver optimization tool is utilized to achieve an optimal and practical solution even when the problem size is large. We demonstrated a case with 10 jobs. Using other traditional techniques, such as a decision tree, the solutions can become computationally difficult for large numbers of sequential processes. The technique we present here is entirely sufficient with regard to their accuracy and their computational effort.

We suggest that the modeler should design a template which will fit the maximum possible number of jobs and then when less jobs are required to be sequenced, one can simply enter the jobs information and assume a zero added value and failure rate for the rest of the slots in the template. However, the time to seek an optimal solution is significantly increased when more jobs are entered. As such, we suggest that the model should be based on the maximum number of jobs but not necessary more that what is ever needed. In fact, we found that the template can be easily expanded when more jobs are needed to be sequenced.

The suggested Excel template can be used for sequencing problems which assume that each job is 1) independent, 2) of constant value and 3) of constant risk of failure. These assumptions allow for the computation of expected loss at any point in the solution. The first assumption of independence is easily violated by the physical properties of the piece of work. Our problem assumes any process can be placed at any point in sequence. Often one process must precede another. For example, a hydraulic piston rod must be lathed before fastening threads can be cut. Therefore regardless of the value added and risk of failure of the processes, the lathing must precede the thread cutting. Our problem also assumes that value added calculations use a measure of total time to complete a process. In fact, a lengthy individual process may be botched in the first few seconds of work rather than at inspection when all work is completed. Finally, risk of failure may be a function of the number of previous processes completed. Damage to an already machined section of a piece of work may be more likely if adjacent places on the work have

already been machined and are susceptible to being ruined. The template can be adjusted to reflect any possible violation of these assumptions.

REFERENCES ARE AVAILABLE UPON REQUEST

HOW TO IMPROVE YOUR TEACHING EVALUATIONS USING INFORMATION AVAILABLE ON THE INTERNET: FROM AVERAGE TO OFF THE CHART IN ONE SEMESTER

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ABSTRACT

Student evaluations of teaching are primarily determined by low achieving students in a class, and faculty have a perverse incentive to design the class to satisfy the preferences of these students. We test this theory empirically by investigating grade distributions and student ratings in a sample of classes. Insights for how the instructor may lower class workloads to maximize his ratings are provided by online ratings sites.

INTRODUCTION

Student evaluations of teaching (SET) are the principle measure used to evaluate an instructor's suitability for hiring, promotion or continued employment. We contend this practice creates perverse incentives that lead to a reduction in the educational value of college classes. The theory presented by this paper is that high achieving students in a class have little or no influence on the class SET measure, while by contrast, low achieving students have large and determining influence. If this is true, the instructor will have the incentive to maximize his SET by designing his class to suit the preferences of these influential, low achieving students. We offer empirical evidence in support of this theory.

THEORY AND EMPIRICAL EVIDENCE

The theory presented by this paper is extremely simple. We contend that high achieving students in a class have little influence on the class SET measure, and low achieving students have large and determining influence. The implication of this theory is that the instructor can maximize his SET by designing his class to suit the preferences of these influential, low achieving students and can do so at the expense of the high achievers. We offer two reasons why low achieving students have more influence on the SET than high achievers, the first reason having to do with the structure of the SET survey tool, and the second reason having to do with differences in what is at stake for low achieving students compared to high achievers when class grades are considered.

The SET survey filled out by students is called a Likert Scale, basically a customer satisfaction survey asking students to rate the class on a five point scale, where five is best and one is worst. In practice, among a typical group of instructors, the typical average SET on the five point scale is about 4.2, or in other words a result at the very high end of the scale. It is known that SET among students are higher as expected class grades are higher, and therefore it should be true that high achieving students are giving the instructor ratings of 4 or 5 typically, while low achieving students are giving the instructor ratings below this level, toward the middle or lower end of the scale. Our first reason for believing that high achieving students have small influence on the SET is that their rating of the instructor is "off the scale" in the sense that much greater levels of satisfaction could not be indicated by choosing a rating higher than five, while much lower levels of satisfaction would still merit a rating of five, or perhaps four at worst. Simply put, high achieving students assign top ratings for a wide range of performance on the part of the instructor. Low achieving students by contrast give ratings that naturally fall toward the middle portion of the scale and have more scope to raise or lower their SET. By virtue of the moveability of their ratings they become the students who matter to the instructor because it is only their ratings within the class that can be changed.

A second reason for the importance of the low achieving students' ratings may lie in the fact that the stakes they face where grades are concerned are higher than the stakes faced by high achieving students. A high achieving student may get an A, a B, or a C, and obviously prefers the A intrinsically, but the stakes are rarely very large unless a scholarship or admission to a graduate program is affected. By contrast, the low achieving student may get

a C, a D or an F, and obviously prefers the C intrinsically, but in addition will find himself on academic probation if he gets too many D's, and will find himself blocked from progress altogether if he gets too many F's. This disparity in what is at stake for students suggests that the relief of the low achieving student who gets a C is greater than the dismay of the high achieving student who gets a C, and so it makes sense that the SET rating of the low achiever would be more sensitive and likely to change, depending upon his expected grade result, than the SET rating of the high achiever.

We therefore have plausible reasons for believing that low achievers are the influential students who will determine (much more than the high achievers) the SET rating of the instructor. Where should we look for empirical support for this theory? Consider the distribution of grades within a class and assume the grades are distributed normally in a bell curve. Hypothetically, assume the grade of one A student is lowered to a B, and the grade of one D student is raised to a C. Our theory predicts that the overall SET rating of the instructor will rise because the A student will not lower his rating of the class, while the D student *will* raise his rating. Notice also that the class grade average has not increased as this is done. Our theory predicts therefore that SET will be higher for an instructor whose grade distribution is less dispersed, in essence because he has given fewer D's (and F's). The class grade average does not have to be higher because while the instructor has become more lenient in the assignment of grades to low achievers, he has also become less generous in the assignment of A's to high achievers. We test for this effect empirically by looking at grade distributions and SET ratings among a group of finance department faculty at California State University in Fullerton.

We were able to obtain data for SET and grade distributions for 73 sections of the introductory finance class presented at CSU, Fullerton. All sections of the introductory class from spring 2003 to spring 2005 are included in our sample. SET at CSU, Fullerton, are based upon a five point scale running from 0 to 4. The average SET in our sample of 73 classes is 3.26 but only a portion of these classes are included in our test for the following reason. We have suggested the theory that low achieving students determine the overall SET based in part on the possibility that ratings by high achievers are 'off the rating scale' and therefore do not move much even if levels of satisfaction of these high achieving students are different from one class to the next. This would not be true if their levels of satisfaction were to fall below some threshold. For this reason, we would expect their ratings to rise in influence on the SET if an instructor gets ratings that are particularly low, and the effect of grade distribution upon SET would not be observed as a result. For this reason we remove classes where the SET falls below 3.0 from our sample. 13 out of 73 classes were removed, leaving a sample of 60 classes. We use standard deviation of grades in a class as our measure of grade dispersion. We regressed Class SET on two independent variables, class GPA and class standard deviation of grades and obtained the results presented in table 1.

Table 1. *OLS Results when SET are Regressed on Standard Deviation of Grades (SD) and Class Grade Point Average (GPA)*

	<i>GPA</i>	<i>SD</i>	<i>Constant</i>
Coefficient	0.062	-0.557	3.76
T-statistic	0.405	-3.21*	8.68*
Adj. R-squared	16.6%		

* significant at the 1% level

Standard deviation of grades has a negative coefficient and is significant at the 1% level. This means that tighter grade distributions are associated with higher SET. The GPA variable is not significant. We therefore have evidence for our contention that low achieving students are more influential in determining the SET for a class. More lenient grades for the low achievers will produce better SET even if class wide GPAs are held down by limiting the good grades given to the high achieving students.

How then may an instructor alter his class to suit the preferences of low achieving students? Teacher rating sites that have sprung up on the internet offer unique insights in this area because students at these sites communicate frankly to help each other and it may be argued that the views expressed might be ones that students are reluctant to put down on the schools' official forms. One such site is RateMyProfessor.com. We read hundreds of comments at this site for instructors who received good ratings and bad and find that with very high frequency, instructors who receive good ratings have given out sample examinations and study guides or held pre-test review

sessions. The comments often report that “the sample exam is the same as the test”, or “the teacher tells you what will be on the test in the review session”. We argue that methods of telegraphing the questions that will be on a test reduce the workload of the class for the low achieving student by making it unnecessary to study anything apart from these materials, if only a grade of C is desired. The student who wants an A must still study all of the contents of the course however, because presumably some fraction of the test is not revealed by the sample exam or review. Instructors who adopt these practices will be considered ‘easy’, and a glance down the ratings at RateMyProfessor.com will also show the high correlation between easiness and ratings. The class has become easier, but more so for the low achieving students than for the high achieving students. The degree of difference between the performance of the low achievers and the high achievers is less, and the low achieving students reward the instructor with higher SET as a result.

DISCUSSION AND CONCLUSIONS

The theory of this paper, that high achieving students have no influence on the instructor’s SET while low achieving students have large and determining influence implies the following amazing lesson: *the interests of the best students in the class can safely be sacrificed in order to emphasize satisfying the preferences of the weakest students!*

Administrators who are apprised of these findings may be inclined to keep SET in place but hedged with constraints of the sort where “all classes must have five percent minimum F grades,” or “no sample exams are allowed,” and so on. No matter what rules are put in place, this will not change the fact that the essence of a successful strategy for maximizing SET is target marketing: the low achieving students are the ones that must be pleased. There is an alternative method of giving preference to the weaker students that does not involve offering previews of test questions: the instructor instead may adapt the essence of the strategy to make changes in his presentation of the material with the particular nature of the normal, harder test in mind. The objective would be to make certain that all those things that pose an obstacle to earning a C under any harder standard are dealt with thoroughly enough in the class so that the weakest students would have their best chance to meet the C standard.

As an example, suppose the subject of the class is the Civil War, and let us recall the questions that a journalist would try to answer about, say the battle of Gettysburg: the questions are who, what, where, when and why. Applying this to Gettysburg, a test might include questions like who was the Confederate general, what was the outcome of the battle, where is Gettysburg located, when did the battle occur, and why was the battle important? Now, there are five questions, but in order to get a C on a test, suppose it is necessary to get only four questions right. If all the issues surrounding the questions receive equal emphasis in class or some other emphasis reflecting aspects of the topic that the instructor finds most interesting (such as why the battle was important), perhaps some students will only get three of the questions right and that is below the cutoff for a C. To avoid this, the instructor can provide drill or whatever else is necessary to insure that all students will get at least four questions right. In the case of my example, drill on the concrete facts of who, what, where, and when would probably maximize the number of students who get at least four questions right, and dwelling on “why the battle was important” to any length may jeopardize this goal. The point is that emphasizing the more abstract issue of why the battle was important may not be too smart if a) you are an instructor who wishes to maximize SET ratings, and b) the low achieving students will not reward you with good ratings if you did not prepare them as well as possible to pass the test, and c) they are the most influential students in the class.

Contrast all of this with something one of our most experienced instructors once said about his own teaching in a finance department meeting. He said that he was aiming his approach to the material of the class at the top 25 percent of the students. Now, this approach is laudable in many ways, and as an example it has happened that on occasion some of his students have won awards in national competitions. Many of those who read this might prefer that their own children take classes from such a professor, and yet, this is not an SET maximizing strategy, in fact it misses the bulls-eye completely and his SET ratings are undistinguished at best. The sweet spot is the other end of the grade distribution, where we have the 15 percent or so least prepared and most poorly motivated students, this is the best place to aim our efforts in order to get the highest possible SET ratings, according to our theory. If this is true, the conclusion must be that SET create a perverse incentive for faculty to alter their teaching and lower classroom workloads in ways which may lead to a general reduction in the quality of higher education over the long term.

EXAMINING DIFFERENCES IN COMPUTER SELF-EFFICACY

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ABSTRACT

One hundred three participants completed a Computer User Self-Efficacy (CUSE) scale which included a composite of participant's responses to 30 Likert-type items. Participants were asked to identify the strength of agreement/disagreement to statements about computers using a 6 point scale (1 = strongly disagree to 6 = strongly agree) and has a satisfactory internal consistency ($\alpha = .96$, $N = 103$). Participants computer experience revealed a statistically significant main effect ($F(3,97) = 4.942$; $p < .05$). Participants computer experience revealed a statistically significant main effect ($F(3,97) = 4.942$; $p < .05$). Participants familiarity of computer programs revealed a statistically significant main effect ($F(3,97) = 4.464$; $p < .01$). Participants self efficacy score revealed a statistically significant main effect ($F(3,97) = 6.397$; $p < .05$) indicating that not all four groups have the same self efficacy score. Participants' computer training score was not significant.

INTRODUCTION

Technology integration in the classrooms has been the focus of research in the past decades (Schunk & Ertmer, 1999). In today's world, computer technology is an integral part of the classroom teaching environment. While recognizing the significance of technology enhanced education, especially in teacher education, researchers have not yet established the interconnection between the cognitive aspects of computer learning like motivation and self-regulation and the expectancy component of self-efficacy in computer usage in cross-national studies. Bandura (1997) has defined self-efficacy as beliefs in one's capabilities to organize and execute the courses of action required to learn computers. It is the students' appraisal of her/his ability to master learning of computers.

Zimmerman, Bandura, and Martinez-Pons (1992) hypothesized that if students' perceived themselves as highly self-efficacious in using self-regulatory strategies, it would result in an increase in their perceived efficacy for achievement, in this case, achievement in computers. Computer self-efficacy refers to a judgment of one's capability to use a computer. The individual's decision to use computers is influenced by computer self-efficacy (Compeau & Higgins, 1995). Schunk and Ertmer (1999) found that those students who have high motivation to learn computers have high computer self-efficacy, and, in turn, those students who have high computer self-efficacy have self-regulatory strategies for learning computers.

Pedagogical concerns regarding self-efficacy in usage of computers have been raised but not many explanations are available. The purpose of this study was to examine differences in computer experience, computer familiarity, computer self-efficacy and computer training across age groups for students attending a Northeastern University, students attending a Southern University, and some not currently attending a University.

According to DeLoughrey (1993) as many as one-third of college students suffered from technophobia, or fear of computer and information technology. In the past decade computer use has increased from learning in the classroom to learning in the home as well. Online learning systems have become a major part of college/university education and not without its own critics. There are a number of issues related to student's reactions to online learning especially with older adult returning to the university to complete the degree set aside in earlier life. Online learning doesn't just encompass one to come to class prepared to participate in a lecture but instead requires tools beyond the classroom where the student must be able to use a variety of computer-related technologies such as e-mail, internet search engines, chat rooms or discussion boards, databases, and so on (Bates and Khasawneh, 2007).

According to Imhof, Vollmeyer, and Beierlein (2007) computers have saturated all aspects of life to a degree that even individuals who hold guarded attitudes toward computers and who do not think that they could be successful computer users simply cannot avoid using computers. Thus, personal beliefs can have a serious impact on actual computer performance. In this context self-efficacy has been singled out as particularly important. It has

been shown that higher levels of computer self-efficacy are related to higher levels of computer use (Dickhäuser & Stiensmeier-Pelster, 2002, 2003; Shapka & Ferrari, 2003).

Prior research (Chou, 2001; Compeau & Higgins, 1995; Gist et al., 1989; Torkzadeh et al., 1999; Marakas et al., 1998) suggest that computer training is an important means of improving computer self-efficacy. However, Venkatesh and Davis (1996) suggest that computer training programs are more effective in increasing computer skills or systems use rather than self-efficacy. Other researchers (Al Khaldi & Al Jabri, 1998; Levine & Donitsa-Schmidt, 1998; Potosky & Bobko, 2001; Rozell & Gardner, 1999; Shashaani, 1997; Williams, Coles, Wilson, Richardson, & Tuson, 2000) have found that the more experience individuals have with computers, the more likely they are to have positive attitudes towards computer use and concur that computer training has a positive impact on computer attitudes.

According to Chen and Persson (2002) computer use has the ability to enhance the quality of life for older adults in numerous ways. Obviously, computers can provide ready access to information, such as facts about medical conditions, travel destinations, history, culture, and almost any other topic. Additionally, computers encourage cognitive stimulation as older adults learn to use new functions and navigate the world wide web. Computers also make it possible for communication among family and friends via e-mail, instant messaging, and on-line chat when the older adult reaches out to understand the use of computers. Despite the good that computers might bring to older adults there seems to be a delay in the adoption of technology by older adults. However, there still seem to be mixed results in prior studies where Selwyn, Gorard, Furlong, and Madden (2003) found that approximately 20% of older adults compared with 65% of younger adults had used computers within the past 12 months while Matanda, Jenvey and Phillips (2004) found higher rates of computer use for older adults.

METHODOLOGY

A longitudinal study is currently being conducted for at least 3-4 years using both quantitative and qualitative methods. The first phase of the study has just been completed.

Participants

For this survey there were a total of 103 participants, with 80% female and 20% male (82, 21 respectively). The participants included students attending a Northeastern University, students attending a Southern University, and some not currently attending a University.

Instruments

Computer User Self-Efficacy Scale (CUSE). A composite of participant's responses to 30 Likert-type items. The instrument is generic within the confines of computer use and was developed to measure the relationship between self-efficacy and computer experience. Participants were asked to identify the strength of agreement/disagreement to statements about computers using a 6 point scale (1 = strongly disagree to 6 = strongly agree) and has a satisfactory internal consistency ($\alpha = .96$, $N = 103$).

Cassidy and Eachus (2002) developed the instrument and tested for reliability and validity. Internal consistency of the 30-item scale, measured using Cronbach's Alpha was high ($\alpha = .97$, $N = 184$). Test-retest reliability over a one-month period was also high and statistically significant ($r = 0.86$, $N = 74$, $p < 0.0005$).

Construct validity was assessed by correlating the self-efficacy scores with a self-reported measure of computer experience and with number of computer packages used (i.e., familiarity). Cassidy and Eachus (2002) found both correlations were significant; experience correlated at $r = 0.79$, $p < 0.0005$, $N = 212$ and familiarity correlated at $r = 0.75$, $p < .0005$, $N = 210$. Cassidy and Eachus (2002) also tested Criterion validity by comparing total computer self-efficacy scores across five groups. A one-way ANOVA identified a significant main effect for group ($F = (4,207)$, 50.66 , $p < 0.0005$).

Procedures

Students were given the opportunity to complete the instrument during normal lecture times at both universities. Several classes were available to the researchers through colleagues at both campuses. Additionally, other

participants not currently attending either university were given the opportunity to complete the survey; hence some of these participants either had a college degree or worked without a college degree.

RESULTS

Means and standard deviations are presented in Table 1. Preliminary analyses were done to examine the data. Four separate Oneway Analysis of Variance (ANOVA) were used to examine the question of whether there are differences across age groups for computer experience, computer training, familiarity, and self-efficacy.

For the first ANOVA, the independent variable represented the age category for participants: (1) age 27 and under; (2) age 28 to 38; (3) age 39 to 55; and (4) age 56 and up. The dependent variable is the participants' computer experience. The test for homogeneity of variance was not significant (Levene (3, 97) = .269; $p > .05$) indicating this assumption underlying the application of ANOVA was met. The oneway ANOVA of participants computer experience revealed a statistically significant main effect ($F(3,97) = 4.942$; $p < .05$) indicating that not all four groups have the same computer experience. The $\omega^2 = .105$ indicates that approximately 10.5% of the variation in computer experience is attributed to differences in age groups.

Post hoc comparisons using Tukey procedures were used to determine which pairs of the four age categories differed. These results indicate that the computer experience scores of participants in the age category 55 and up ($\bar{M} = 1.67$) differed participants in the age category 27 and under ($\bar{M} = 2.64$), age category 28 to 38 ($\bar{M} = 3.12$), and age category 39 to 55 ($\bar{M} = 3.29$). However, there were no significant differences for the remaining three groups with each other. The effect sizes for these three significant effects were -.153, -.190, and -.212 respectively, indicating the groups differed by approximately 1.5 to 2.0 standard deviations.

For the second ANOVA, again, the independent variable represented the age category for participants: (1) age 27 and under; (2) age 28 to 38; (3) age 39 to 55; and (4) age 56 and up. The dependent variable is the participants' familiarity of computer programs. The test for homogeneity of variance was not significant (Levene (3, 97) = .3004; $p < .05$) indicating this assumption underlying the application of ANOVA was not met. But, according to Lindman (1974) the F statistic is quite robust against violations of this assumption and therefore the ANOVA was used to analyze this data. The oneway ANOVA of participants familiarity of computer programs revealed a statistically significant main effect ($F(3,97) = 4.464$; $p < .01$) indicating that not all four groups have the same computer experience. The $\omega^2 = .093$ indicates that approximately 1% of the variation in computer experience is attributed to differences in age groups which according to Grimm (1993) is considered to be low.

Post hoc comparisons using Tukey procedures were used to determine which pairs of the four age categories differed on familiarity of computer programs. These results indicate that the familiarity of computer programs scores of participants in the age category 39 to 55 ($\bar{M} = 5.214$) differed with participants in the age category 27 and under ($\bar{M} = 3.776$) and age category 56 and up ($\bar{M} = 2.000$). However, there were no significant differences for the other age category groups. The effect sizes for these two significant effects were .756, and 1.69 respectively, indicating the groups differed by approximately 1 to 1.5 standard deviations.

For the third ANOVA, the independent variable represented the age category for participants: (1) age 27 and under; (2) age 28 to 38; (3) age 39 to 55; and (4) age 56 and up. The dependent variable is the participants' self efficacy score. The test for homogeneity of variance was not significant (Levene (3, 97) = .784; $p > .05$) indicating this assumption underlying the application of ANOVA was met. The oneway ANOVA of participants self efficacy score revealed a statistically significant main effect ($F(3,97) = 6.397$; $p < .05$) indicating that not all four groups have the same self efficacy score. The $\omega^2 = .140$ indicates that approximately 14% of the variation in self efficacy is attributed to differences in age groups.

Post hoc comparisons using Tukey procedures were used to determine which pairs of the four age categories differed. These results indicate that the self efficacy scores of participants in the age category 55 and up ($\bar{M} = 3.054$) differed participants in the age category 27 and under ($\bar{M} = 4.659$), age category 28 to 38 ($\bar{M} = 5.073$), and age category 39 to 55 ($\bar{M} = 5.053$). However, there were no significant differences for the remaining three groups with each other. The effect sizes for these three significant effects were -.187, -.235, and -.233 respectively, indicating the groups differed by approximately 1.5 to 2.0 standard deviations.

For the fourth ANOVA, the independent the independent variable represented the age category for participants: (1) age 27 and under; (2) age 28 to 38; (3) age 39 to 55; and (4) age 56 and up. The dependent variable is the participants' computer training score. This ANOVA was not significant indicating there are no differences in the age categories with computer training.

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SOCIALIZING INTERNATIONAL STUDENTS INTO AMERICAN HIGHER EDUCATION CULTURE: STRATEGIES AND CHALLENGES

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ABSTRACT

This study follows a group of Brazilian students pursuing a degree in American universities as they negotiate their relationships with professors and as they develop an understanding of the social, cultural and educational rules that apply in the context of American academic settings.

International students in American universities have the double task of having to perform within the required academic standards at the same time that they struggle to make sense of American culture. When caught in between two worlds, international students may opt for acting based on their native or second culture background, or they can display features that characterize the development of an "Interculture".

This paper analyzes data from interactions between professors and students negotiating a test. We discuss the challenges faced by professors as they help international students to socialize into mainstream American culture and make suggestions on how to address the needs of these students.

INTRODUCTION

With the introduction of *communicative competence* (Dell Hymes, 1972) in second language studies, research in second language acquisition (SLA) shifted its main focus from linguistic to communicative competence in an attempt to describe language in actual use, its relationship with both native and non-native speakers, and what a communicative competent language user is and does when interacting in the second language. The field of Interlanguage Pragmatics is a result of this concern and research in this area aims at describing learners' linguistic production, not only in terms of their grammatical and lexical knowledge of a target language, but also in terms of their knowledge of the socio-cultural rules of the target culture.

Learning the grammar and vocabulary of a second language does not guarantee successful communication. Second language learners frequently find themselves forgetting, ignoring or not knowing the rules which reflect the pragmatic features of the second language (L2), the sociolinguistic strategies and expressions that allow interlocutors to understand each others' intentions, and negotiate communication challenges appropriately (Kasper & Blum-Kulka, 1993; Naiditch, 2006a, 2006b; Kasper & Roever, 2005).

The research described in this paper is a result of this concern and aimed at understanding how international students, non-native speakers of American English, develop socio-cultural skills in order to communicate their meanings in American university classrooms adequately. Their perceptions of the different social situations they may find themselves in and the factors that contribute to their assessment and performance in those situations are also analyzed.

Our focus is on the relationship between professors and international students in American universities negotiating a final exam. The situation of taking a test and negotiating the possibility of postponing it proved to have been challenging for both parties involved because in order to succeed in communicating your needs effectively and in order to understand the needs of your interlocutor, one needs to understand the cultural values and social assumptions that different cultures place in not only taking a test, but in establishing an educational contract between professors and students, developing relationships between professors and students, and incorporating personal situations and circumstances in the equation.

METHODOLOGY

The participants of this study were international students from Brazil who were pursuing a degree (from a B.A to a PhD) in different American universities in the New York area. All the Brazilian ESL learners had been in the United States for a minimum of two years. Baseline data were obtained through native speakers of both languages and cultures involved in this study, American English and Brazilian Portuguese. Three

instruments were used in this study to collect data: a role-play, an assessment of social variables, and one-on-one interviews.

All participants were given a description of a situation and its interlocutors, and asked to participate in an interaction to develop that situation in any way they found appropriate, which means it was up to participants to decide on how to go about resolving the situation, how long interactions should be and what language was needed to do so. Baseline data were collected from native speakers of American English who were paired up with members of their same community. The same was done with native speakers of Brazilian Portuguese. The international students were paired up with a native speaker of American English in order to perform the dialogue.

The description given to participants specified the social context and the social roles of the characters. The roles to be acted out varied according to the variables described by Brown and Levinson (1987): power, social distance and degree (or rating) of imposition. In this paper we focus on the situation between a university professor and a student asking for permission to take a test on a different day from the one initially assigned.

Apart from acting out the situation, participants were asked to evaluate it in relation to each of the three variables described by Brown and Levinson (1987). A semi-structured interview was also carried out on a one-on-one basis with volunteer members of each group of participants. In the interviews, participants were able to describe the linguistic and cultural processes involved in participating in the situation and reflect upon their understanding of the factors involved in establishing and developing inter-cultural communication.

Data were analyzed both quantitatively and qualitatively. The qualitative analysis was developed from what participants said in the interviews and categories were developed based on common threads identified. For the quantitative analysis, a number of categories were analyzed, such as the strategy used to perform the request, the perspective in which the requests were made, and the internal and external modification participants used, such as the use of upgraders, downgraders, justification, and politeness markers.

FINDINGS

The way to understand the findings is by looking at the contexts in which the situations were created by the participants and bringing in the cultural aspects that influenced their linguistic choices. As far as request strategy is concerned, in this situation the groups were split between impositive and conventional request strategies with the ESL group having a slightly higher preference for the impositive strategy. This divide between the impositive and conventional strategies reflect the difference in what it is that participants needed to highlight when making the request. For international students (IS), familiarity between interlocutors still seems to be playing the most decisive role, i.e., a professor (P) in Brazilian culture is considered a friend, someone you can go to and share personal problems and expect some sympathy from. As can be seen in the example below, international students tended to transfer the cultural patterns of their first language and culture into their use of English as a second language:

IS: I won't be able to be here for the final test and would like for us to set another time to do it.

P: But why? Did anything happen?

IS: I have family problems and my mom asked me if I could go home and help them out. My dad lost his job and my mom, poor thing, works like a dog taking care of the house, catering, and she still needs to look after my two little brothers. Things are pretty tough...

American university students (AS) avoided being so personal and seemed to have been more direct, as can be seen through the use of the conventional strategy – a question – in asking for permission to take the test at a later date:

AS: Would you be willing to give me a make-up exam?

AS: Is there any way I could arrange to take the exam at a different time?

International students who had been living in the US for a longer period of time made use of some the same strategies as their American counterparts. Their linguistic production could be understood as representing their linguistic and cultural knowledge of the second language and culture, as reflected in their interlanguage

and interculture, or still in some cases, as pragmatic transfer from their L1:

IS: I would like to take the test on another date.

IS: Is it possible to schedule another day to do the final exam?

IS: Can I take the test the week after?

The analysis of modifiers focused on the linguistic devices participants made use of in order to either mitigate or intensify their requests. The modifiers we focused on were the use of downgraders and upgraders, justification for the request, and politeness markers. In this category, language transfer was evident in that international students tended to hold on to the pragmatic strategies and devices used in their first language and culture. For example, the use of augmentative, which is a common feature of Brazilian Portuguese, as was seen in the baseline data (Brazilian Students – BS) was used by international students who carried these features on to their use of English as a second language, which clearly characterizes pragmatic transfer:

BS: Mas eu tô com um *problemão*. (But I have this *huge problem*)

BS: Preciso de um *favorzão*. (I need a *big favor*)

IS: Hi, professor. I have a *really big* problem.

IS: You're gonna do a *huge* favor for me.

The use of justification in this study was characterized by two main aspects: participants' use of personalization and white lies. There were significant differences in the way Brazilians and Americans justified the need for permission. Even though, as a pragmatic strategy, justification is a cross-cultural category, the way in which different cultures understand and express it also varies interculturally.

The test situation was the situation in which Brazilians personalized the most and it may be because their interlocutor, the professor, was considered a friend by them. Bringing the hearer closer seems to enable you to share openly and to expect sympathy – and ultimately, get the permission:

BS: É que minha mãe não anda muito bem. Ela tem problema renal e de vez em quando entra em crise e aí ela sempre precisa da minha ajuda. (It's because my mom hasn't been feeling well. She has kidney problems and sometimes she has a crisis and then she always needs me)

By making use of this pragmatic strategy, international students bring their interlocutors closer to them and thus minimize the imposition of the request. Brazilian ESL learners confided in the professor with the cultural expectation that once you share your personal problem, you are also sharing the responsibility for not being able to take the test on the day previously assigned for the exam:

IS: My mom got really sick and I need to take her to the doctor, and I'm the only person at home that has a car. Actually, I'm the only person at home that knows how to drive. Nobody ever cared to learn, so now, professor, everything is me. I have to be responsible for organizing my life around their lives, I have to be the chauffer, the big brother, everything... and I have to go to grad school, too.

American students did not use personalization as their preferred pragmatic strategy in justifying the need for permission. Their justifications tended to be more general. Americans tended to avoid sharing personal problems, especially with a professor, and therefore, justified their requests without getting into specific information about the circumstances that created the need for permission. Moreover, they tended to refer more to the general rules of test taking in universities when addressing the professor, as if they wanted to make it clear that they understand the school culture and hierarchy:

AS: I know it's on the syllabus and that everybody else will be there for the exam, but due to some circumstances, I really can't take it on that day.

Another revealing category analyzed was that of perspective, which focused on the viewpoint used by participants in order to make their requests. Naming yourself as the agent of the request (*I*-perspective) prevailed in the requests made by all the participants in this study. However, international students displayed

an interesting pragmatic strategy when talking to their professor. Once their problem had been shared with the professor, they tended to shift the perspective to establish a shared experience with the professor, which may be an indication of this tendency Brazilians have of sharing responsibility with their interlocutors in finding a solution to the problem. The examples below shows how speakers make use of perspective shifts during the interaction to convey this meaning:

BS: Eu tô com um probleminha com relação à prova e queria que a gente discutisse isso [...] Não dá pra eu vir fazer a prova depois? [...] Dá pra nós marcar uma data depois da cirurgia? (I have a little problem in relation to the test and I was hoping we could discuss it [...] Can't I come and take this test later? [...] Is it possible for us to set a date after the surgery?)
IS: I was wondering if you would let me take the test some other time [...] I was just wondering if maybe we could negotiate another date.

In the interviews, American students' responses and attitudes toward the professor tended to highlight American culture as being structured and regulated by social conventions, and how hard it is to try and break this structure. An understanding of the rules that apply in establishing the relationship between a professor and a student in American culture, though, did not translate into inaction or mere acceptance of the rules by American participants in this study. The same society that is governed by rules is the society that values competition and measures academic success by assigning numbers or letters to a student's performance: (meritocracy; grade inflation):

AS: I would argue to be able to take the test at a different time. I would strongly argue because it's for my grade.

Therefore, we could argue that there is a paradox in terms of how Americans perceived and how they responded to this situation. Participants were almost unanimous in defining this relationship as asymmetrical, describing the professor as an authority, someone whose knowledge and role is respected and looked up to. However, they also pointed out that people have to fight for their rights and since they were paying tuition, they had some rights that also needed to be respected. In responding to this situation, Americans felt that permission should have been granted simply because they were *entitled* to it. The relationship with the school and the system it represents is seen as a contract, like any other business relationship:

AS: I am paying tuition. I am ultimately paying this professor's salary. Going to school in the US is much like any other business. You are buying an education, paying for a service; and you want to be well served.

In Brazilian culture, the situation was not about the grade as much as it was about the relationship. The sense of entitlement is also present, but it refers to a different kind of entitlement: it is the entitlement created as a result of the relationship – *because we are friends, you have to let me do this*. In other words, because Brazilians establish that their interlocutor is a friend, the hearer is expected to act accordingly, which means granting permission:

BS: The professor is like a friend, and a friend understands your problems and situations and will do anything to help.

Transforming the professor into a friend makes it easier for Brazilians to negotiate permission. There seems to be a cultural norm that was described by participants, that the first step in any new relationship is to bring the interlocutor closer to you by addressing him/her as a friend. Regardless of the quality or intensity of the relationship, there is a cultural need to forge closeness, intimacy and a sense of equality. Most international students showed awareness of the differences between establishing relationships and interacting with professors in Brazil and in the U.S.:

OS: In Brazil it's much easier to go and talk to a professor. Here, in most cases, the professor doesn't even know the student and the student doesn't even have access to a professor. The professor only goes to class to lecture and everything else is done through the TA's.

The difficulty international students reported was not in identifying the differences, but in being able to incorporate them into their discourse. The problem they seem to face is not even in terms of their ability to reproduce the kind of language the situation requires, given their high level of proficiency. Their problem has to do with identity. In the interviews, international students expressed some resistance in becoming a different self in the second language, especially one that goes against their most basic beliefs about human nature and relationships.

CONCLUSION

Learners' experiences in their second language socialization process is what mediates their understanding of the cultural and pragmatic features of the second language, and their ability to express this understanding linguistically. Relationships are established in both cultures studied based on different premises and expectations. When pragmatic failure occurs, it is mainly as a result of the misconstrued image international students build based on their cultural beliefs of what the relationship should be, as opposed to what it actually is.

Even though international students may be aware of cultural and linguistic differences, this awareness does not always translate into actual linguistic production. The findings presented in this paper confirm the importance of communicative competence in its cultural and interactional dimensions (Kramsch, 2000). Exposing students to appropriate pragmatic input is a necessary pedagogical tool as far as awareness-raising is concerned (Schmidt, 1993), but the teacher needs to be aware that providing learners with input does not necessarily lead them to acquisition (Long, 1985). When learning a second language, learners should be made aware of the cultural differences that create contexts and situations in that language, and therefore, the role of instruction should also include addressing issues of the cultural and social nature of language, both implicitly and explicitly (Celce-Murcia & Olshtain, 2000).

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VOCATIONAL BELIEFS AS THE CONSTRUCTS OF STUDENTS' PERCEPTION OF THE ACCOUNTING PROFESSION: A COMPARATIVE STUDY

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ABSTRACT

This study introduces a new theoretical framework to investigate Malaysian and English students' perception regarding the accounting profession. We examine similarities and differences among these two groups concerning accounting vocational constructs and the relationship between students' perception and intention to pursue an accounting career. Both groups are found to hold positive perception of the accounting profession. The results indicate a significant correlation between students' perception and intention to pursue the profession.

INTRODUCTION

An ever changing and integrating global economy and dynamic business environment combined with rapidly expanding new office automation techniques have profound implications for the required skills and qualifications of business professionals. In respect of contemporary accountants in particular issues such as the need for creative accountants with highly analytical skills, the need for diversity in the accounting profession (AP) and the need to recruit outstanding future accountants means that greater endeavours must be devoted to understanding the career decision making process of business students. A substantial body of empirical systematic research has investigated the area of accounting career choice (ACC) (Adams et al., 1994; Felton et al., 1994; Lowe and Simons, 1997; Ahmed et al., 1997; Auyeng and Sands, 1997; Coate et al., 2003). However, empirical research has predominantly focused on general factors that affect ACC of students entering the AP (Ahmed et al., 1997).

Several accounting academics argue that the perceptions students hold about the AP influence them towards pursuing an accounting career (Felton et al., 1995; Marriott and Marriott, 2003). Nevertheless, the interest among accounting educators and researchers regarding the perception has not been vigorously investigated. Accounting research does not appear to consider the multifaceted nature of perception regarding the AP and its effect on other vocational constructs. With few exceptions there is a scarcity of empirical investigations utilizing relevant theoretical frameworks and systematically developed instruments to measure this perception of the AP. As recruitment is a crucially important issue for the profession, a well-founded theoretical framework is required to better understand accounting students' perceptions of a career in accountancy. This paper focuses on students from two countries with different cultural and stage of economic development backgrounds.

The specific objectives of the present study are:

- To investigate Malaysian and English accounting students' overall perception of the AP;*
- To identify differences and similarities in the perception between the two groups;*
- To examine the relationships between students' perception and their intention to pursue an accounting career.*

PRIOR RESEARCH

Given the significance that perceptions play in the recruitment of new members into any profession there is only a limited number of accounting studies that have dealt specifically with accounting and non-accounting students' perceptions of the AP (Fisher and Murthy, 1995; Hermanson and Hermanson, 1995; Pollock et al. 2002). These accounting studies present contrasting results for students' perceptions of accounting. Most demonstrate

negative perceptions; however, they have measured students' perceptions using different and unrelated constructs for perceptions, such as the characteristics of accountants and of the accounting job, stereotypes of accountants and intentions to pursue the accounting profession often without any theoretical justification (see Mladenovic, 2000; Marriott and Marriott, 2003; Byrne and Willis, 2005). It appears that what is missing from the accounting research carried out so far is the conceptualization and operationalization of the perception of the accounting profession based on a common accepted theoretical framework. Therefore, investigating perceptions and their relationship with the other constructs of ACC confounds and casts doubt on the validity of the conclusions proffered in most studies.

THEORETICAL FRAMEWORK

The word perception is defined as the "ability to perceive and the result of receiving, to realize or become aware of something through the senses an impression accompanied by an understanding of what it is" (Webster, 1937). Relevant vocational literature suggests that students' career perceptions are highly individual and are the product of contracted images from personal contact with a job, derived images from the range of media to which young people are exposed and delegated images by adults concerning the jobs and careers they come into the contact with. From a psychological perspective the measurement of specific vocational perceptions of the personal attractiveness of a profession relates only to specific beliefs concerning attributes and outcomes associated with this profession (Rokeach, 1973; Bandura, 1986; Fishbein and Ajzen, 1975; Foskett and Hemsley-Brown, 1999).

The construct of beliefs in accounting career choice is itself broad and encompassing. For the purpose of research it is diffusing and ungainly, too difficult to operationalize and too context free.). Specific vocational beliefs are beliefs concerning the attributes or outcomes associated with a particular occupation and their conceptualisation is based on the concept of work values (Germanou, 2004). The theory of work values (Super, 1973) will serve as a conceptual and operational framework for the specific cognitive beliefs concerning attributes and outcomes that are associated with the accounting profession.

The work values studied in the context of academic research are quite broad; they refer to what a person wants out of work in general rather than to the narrowly defined outcomes of particular job (Ros et al., 1999). Hence, the characteristics are mentioned as being "general" because they are not exclusively related to particular, specific occupation. There is a debate among vocational researchers concerning the number of job characteristics /work values that influence individuals when selecting their ideal job. According to Zytowski (1970) the commonly mentioned by researchers work values range between 10 to 25. Work values researchers have concluded that each time the number of the relevant individual preferred job characteristics is associated with the specific population under research (Pryor, 1983; Elizur et al., 1991; Hofstede, 1998). Furthermore, researchers have sought to identify a set of general categories or types of work values (Marini et al., 1996; Ros et al., 1999). A recent innovation in the classification of work values into broad categories is that of Ros et al. (1999). According to Ros et al. (1999), work values can be classified into four general types: *extrinsic*, *intrinsic*, *prestige* or *image* and *social* or *altruistic* work values each parallel to one of the four higher-order basic types of individual values.

RESEARCH METHOD

Participants and Procedures

The research strategy used was a questionnaire survey of Malaysian and English accounting students in the final year of their studies. Although participation in the study was voluntary, the rate of participation was nearly 100 percent because the instruments were administered by the instructor during class time.

The data was collected by means of a self-administered questionnaire that was distributed to students. This method was selected in order to examine patterns of associations, which requires quantifiable data and a large enough number of responses to allow for statistical testing. In total 242 questionnaires from final year Malaysian and English accounting students were collected. Several (18) questionnaires were excluded because they had over 25% of the questions left blank or answered inappropriately. Overall 224 (105 females, 119 males) usable questionnaires, 87 questionnaires from English students and 137 from Malaysian students were obtained which was a response rate of 93 per cent. This response rate was satisfactory, considering that each questionnaire demanded responses to approximately 70 items (see Baruch, 1999). Of the respondents 78.1% were between 21-24 years of age and they had a mean of 21.4 years.

The Instrument

The instrument used in this study to measure the students' intention and perception is based on the above theoretical framework and contains 71 items with a five point response format. The instrument is divided into two sections as follows:

Part I of the questionnaire gathered business students' demographic information, i.e., gender, age, ethnicity, family status.

Part II of the questionnaire (Appendix) asked business students to indicate on a 5-point scale, from "Disagree Strongly" to "Agree Strongly" the degree to which they agreed that the 66 items-beliefs concerning attributes and outcomes are associated with the accounting profession (Accounting Perception Scale, hereafter APS).

Part II of the questionnaire also contained 5 more items that assessed students' intention to follow the accounting profession (Accounting Intention Scale, hereafter AIS).

Measures

Intention to pursue a career in the accounting profession was measured using the AIS which were developed for the purposes of the present investigation. The aim was to develop a brief general scale of intention that exhibits reliability and validity. The variable of intention was created using the sum of scores for the five items related with the students' intention to pursue a career in accountancy. The range of possible scores was 1 to 5, midpoint 3. Cronbach α for the present sample was .91.

The *extrinsic dimension* was operationalized as the beliefs concerning job security, working conditions and economic benefits that students held for the accounting professions' attributes and outcomes of a material nature. Arithmetic average for the extrinsic dimension was calculated by using the score for each questionnaire item included in the extrinsic factor with loadings greater than 0.40. The scale consists of 13 items. The range of possible scores was 1 to 5, midpoint 3. Cronbach α for the present sample was .77.

The *intrinsic dimension* was operationalized as the beliefs concerning nature of accounting job, self esteem, intellectual creativity, achievement, feedback and autonomy that students held for the various accounting professions' attributes and outcomes concerning the feelings that are produced inherently by the accounting job itself. Arithmetic average for intrinsic dimension was calculated by using the score for each questionnaire item included in the intrinsic factor with loadings greater than 0.40. The scale consists of 23 items. The range of possible scores was 1 to 5, midpoint 3. Cronbach α for the present sample was .84.

The *prestige dimension* was operationalized as the beliefs concerning business decision making, social status and advancement that students held for the accounting professions' attributes and outcomes of a prestige nature. Arithmetic average for prestige dimension was calculated by using the score for each questionnaire item included in the prestige factor with loadings greater than 0.40. The scale consists of 12 items. The range of possible scores was 1 to 5, midpoint 3. Cronbach α for the present sample was .83.

The *social dimension* was operationalized as the beliefs concerning contribution to society and working with others that students held for the accounting professions' attributes and outcomes of a social/affective nature. Arithmetic average for social dimension was calculated by using the score for each questionnaire item included in social factor with loadings greater than 0.40. The scale consists of 4 items. The range of possible scores was 1 to 5, midpoint 3. Cronbach α for the present sample was .69.

The *Overall perception* was assessed with the APS that was developed for the purposes of the present investigation. The variable of perception was created using the sum of scores for the 52 items related to students' beliefs associated with extrinsic, intrinsic, prestige and social attributes and outcomes of the AP. The range of possible scores was 1 to 5, midpoint 3. Cronbach α for the present sample was .91.

Hypotheses

Based upon the review of related literature in the areas of vocational research and ACC, on the above theoretical framework and on the results of the factor analysis the following were the hypotheses for this study:

Hypothesis 1: Accounting students hold a positive overall perception of the AP.

Hypothesis 1a: Malaysian accounting students hold a positive overall perception of the accounting profession.

Hypothesis 1b: English accounting students hold a positive overall perception of the AP.

Hypothesis 2: There is no statistically significant difference in the overall perception of the AP between Malaysian and English students.

Hypothesis 2a: Malaysian and English students do not differ in terms of their extrinsic, intrinsic, prestige and social dimensions of perception.

Hypothesis 2b: Malaysian and English students do not differ in terms of their sub-dimensions of perception.

Hypothesis 3: There is a statistically significant relationship between students' intention to pursue an accounting career and their overall perception of the AP.

Hypothesis 3a: There will be a significant positive relationship between students' intention to pursue the AP and the dimensions of perception.

RESULTS

Descriptive Analysis of Questionnaires

Descriptive statistics for all the main variables of the study are presented in Table 1.

Table 1 Descriptive statistics of the constructs under investigation

Variables	Total sample			Malaysian sample			English sample		
	N	Mean	Std. Dev	N	Mean	Std. Dev	N	Mean	Std. Dev
Intention	223	3.48	0.82	136	3.43	0.80	87	3.55	0.94
Perception	215	3.42	0.35	132	3.42	0.36	83	3.43	0.33
Extrinsic dim.	222	3.25	0.45	137	3.21	0.25	85	3.31	0.40
Intrinsic dim.	221	3.33	0.39	135	3.33	0.41	86	3.33	0.37
Prestige dim.	222	3.63	0.45	135	3.66	0.47	87	3.58	0.42
Social dim.	221	3.33	0.57	136	3.05	0.59	85	3.81	0.54

The descriptive analysis of questionnaires suggests that there is positive intention and overall perception of the AP for the entire sample and for the two groups separately. This is in line with previous research that accounting students and students who have attended accounting courses have positive views of the profession (Mladenovic, 2000; Byrne and Willis, 2005). However, 16% and 15% of Malaysian and English students respectively indicated a neutral to negative overall perception of the profession. In addition 33% and 28% of Malaysian and English students respectively indicated a neutral to negative intention to follow the AP.

As the sample size is large enough and there is not a parametric test that satisfactorily tests whether the mean scores are significantly different than the mid point of the measures (Pallant, 2001) one sample t-tests were carried out to test the hypothesis 1, 1a and 1b. The results indicated that the mean scores for overall perception for the total sample (3.42), for Malaysian students (3.43) and for English students (3.42) are all significantly greater than the mid point of the scale 3.00 ($p < 0.000$). Therefore the hypothesis 1, 1a and 1b fully supported. Furthermore the above descriptive results show that the dimensions of perception are above the midpoint of the scales for both samples. However there are large and small differences in the mean scores of variables between the two groups.

Similarities and Differences Among Groups

In order to examine whether the above differences are statistically significant between the two groups a series of *t*-test were performed. The results presented in Table 4 shows that there are not statistically significant differences in overall perception and in the three dimensions extrinsic, intrinsic and prestige between accounting students from Malaysia and England. However, there is a statistically significant difference on the score of social dimension. Therefore the Hypotheses H2 is fully supported whereas the H2a is partially supported.

Table 2 presents information concerning whether there are statistically significant differences between the two groups' scores in the four dimensions of their perception (Table 2).

Table 2 T-tests- Identifying differences between Malaysian and English students

Variables	Nationality	N	Mean	Std. Dev	T-test	P-value
Intention	English	87	3.55	0.94		n.s.
	Malaysian	136	3.43	0.80		
Perception	English	83	3.42	0.33		n.s.
	Malaysian	132	3.42	0.36		
Extrinsic dimension	English	85	3.31	0.40		n.s.
	Malaysian	137	3.21	0.25		
Intrinsic dimension	English	86	3.33	0.37		n.s.
	Malaysian	135	3.33	0.41		
Prestige dimension	English	87	3.58	0.42		n.s.
	Malaysian	135	3.66	0.47		
Social dimension	English	85	3.81	0.54	4.22	.000

Relationships Between Accounting Vocational Constructs

Hypothesis 3 postulates a statistically significant positive relationship between students' intention to pursue an accounting career and their overall perception of the AP. This hypothesis was tested using Pearson product-moment correlation coefficient (Pearson's r). Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. The results in tables 3a, 3b, 3c, show a medium positive correlation (Cohen, 1988) between intention and perception for the total sample. A large positive correlation was found between intention and perception for the Malaysian sample and a medium positive correlation between intention and perception for the English sample. Therefore Hypothesis H3 is supported.

Table 3a Total Sample and intercorrelations (N = 224)

	Variables	1	2	3	4	5	6	α
1	Intention	1						.91
2	Perception	.46**	1					.91
3	Extrinsic dim	.22**	.71**	1				.77
4	Intrinsic dim	.51**	.90**	.47**	1			.84
5	Prestige dim	.31**	.79**	.39**	.59**	1		.83
6	Social dim	.35**	.60**	.22**	.53**	.44**	1	.69

**Correlation is significant at the 0.01 level (2-tailed).

Table 3b Malaysian Students and intercorrelations (N = 137)

	Variables	1	2	3	4	5	6	α
1	Intention	1						.90
2	Perception	.53**	1					.91
3	Extrinsic dim	.28**	.68**	1				.81
4	Intrinsic dim	.53**	.90**	.44**	1			.83
5	Prestige dim	.41**	.80**	.32**	.63**	1		.79
6	Social dim	.22**	.45**	.20**	.50**	.48**	1	.70

**Correlation is significant at the 0.01 level (2-tailed).

Table 3c English Students and intercorrelations (N = 87)

	Variables	1	2	3	4	5	6	α
1	Intention	1						.88

2	Perception	.36**	1					.91
3	Extrinsic dim	X	.79**	1				.75
4	Intrinsic dim	.50**	.89**	.56**	1			.85
5	Prestige dim	X	.79**	.57**	.56**	1		.86
6	Social dim	.38**	.65**	.29**	.57**	.53**	1	.67

**Correlation is significant at the 0.01 level (2-tailed).

Hypotheses 3a postulates a statistically significant positive relationship between intention and the extrinsic, intrinsic, prestige and social dimension of perception, respectively. These hypotheses were also tested using Pearson product-moment correlation coefficient. The results presented above in Table 3a, indicate, a large positive correlation between intention and the intrinsic dimension, a medium positive correlation between intention and the prestige and social dimension, and a small positive correlation between intention and the extrinsic dimension for the total sample. The results presented in table 3b show a strong positive relationship between intention and the intrinsic dimension, a medium positive relationship between intention and the prestige and social dimension and a small positive relationship between intention and extrinsic dimension for the Malaysian sample. The results presented in Table 3c show a medium positive correlation between intention and the intrinsic and the social dimension for the English sample. There were not statistically significant relationships between English students' intention and the extrinsic and prestige dimension of perception. Therefore Hypothesis 3a is partially supported.

CONCLUSION

This study explores Malaysian and UK accounting students' perception and beliefs concerning the attributes and outcomes associated with the accounting profession. It extends prior research on students' vocational perceptions by introducing a new theoretical framework for the conceptualization and measurement of their overall perception of the AP. The results of this study provide further evidence of the importance of students' overall perception on making an ACC (Cory, 1992). Specifically the intrinsic and social dimension of perception were found to related significantly with the English students' intention and all the dimensions are related significantly with the Malaysian students' intention.

An important interesting similarity between the two student groups is that both Malaysian and English students perceive the accounting job as stressful and that accountants work under difficult working conditions (pressure and stress) following instructions from others and strict deadlines for the completion of accounting assignments Furthermore, our findings indicate that accounting students from both countries are motivated to pursue the profession mainly based on their beliefs about the nature of accounting job and self-esteem.

There are several directions for future research that are suggested from this study. The new theoretical framework of the perception of the AP proposed by this study, while empirically validated in the accounting career choice of a small sample of Malaysian and English accounting students, could provide researchers with an important tool that can be used for the investigation of perception in other research settings. Researchers can use the new framework to examine the perceptions of students in business and other academic disciplines and at different stages of their educational life (high school, university). Conducting research concerning the perception of the AP and using a common theoretical approach will greatly facilitate research by producing comparable data and conclusively identifying the dominant beliefs concerning attributes and outcomes associated with the accounting profession involved in the creation of students' perceptions that ultimately affect their accounting career choice. Further research is needed to validate and improve the newly developed scale of perception.

APPENDIX

Accounting Perception Scale (APS)

Using the scale below, please indicate the extent of your agreement with the following statements. Please circle your response in the column. There is no right or wrong answers.

- | | |
|--|-----------------|
| 1. If you disagree strongly | Circle 1 |
| 2. If you disagree | Circle 2 |
| 3. If you not agree or disagree | Circle 3 |
| 4. If you agree | Circle 4 |
| 5. If you agree strongly | Circle 5 |

Accountants deal with a variety of people at work.	1	2	3	4	5
Accountants earn higher income than other employees in business.	1	2	3	4	5
Accounting jobs normally have good working conditions/environment.	1	2	3	4	5
Accounting profession provides a chance to earn other extra money.	1	2	3	4	5
Accountants have feedback from the service to the clients.	1	2	3	4	5
The accounting profession offers a high economic standard of living.	1	2	3	4	5
Accountants are usually in employment.	1	2	3	4	5
Accounting jobs usually don't give you the chance to someday have your own business.	1	2	3	4	5
The accounting profession offers a secure and stable future.	1	2	3	4	5
Accountants are able to do the best business decisions.	1	2	3	4	5
The accounting profession has convenient hours of work.	1	2	3	4	5
Accountants have social responsibility to disclosure the right financial information.	1	2	3	4	5
Accounting information is valuable for the future of the company.	1	2	3	4	5
Accounting jobs have a high long term salary.	1	2	3	4	5
Accountants get ahead quickly in their careers.	1	2	3	4	5
The accounting profession has flexibility of career options.	1	2	3	4	5
Accounting job has a lot of different employment opportunities.	1	2	3	4	5
The accounting profession is interesting.	1	2	3	4	5
Accountants can be promoted to senior level positions in the company/organization.	1	2	3	4	5
The accounting profession has plentiful supply of jobs.	1	2	3	4	5
Managers and businesspersons need the advice of accountants to make any decision.	1	2	3	4	5
Accountant doesn't need special skills; the accounting job is just bookkeeping.	1	2	3	4	5
The accounting profession is well respected in Malaysian (English) society.	1	2	3	4	5
Accountants have personal authority in the workplace.	1	2	3	4	5
Accountants are the best suited to become consultants, business advisors and strategic planners.	1	2	3	4	5
Accounting jobs have a high status and prestige.	1	2	3	4	5

Accountants give advice and suggestions to all others managers.	1	2	3	4	5
Accounting is a profession on a par with law, engineering and medicine.	1	2	3	4	5
Accountants are viewed as special persons in the business.	1	2	3	4	5
Accounting job is monotonous and accountants have to do the same things every day.	1	2	3	4	5
Accounting job gives the chance to participate in decision making.	1	2	3	4	5
Accountants need to be very good in maths.	1	2	3	4	5
Accountants have the same chance as the other business managers to be CEO in their company.	1	2	3	4	5
Accounting jobs need diverse business knowledge, skills and abilities.	1	2	3	4	5
Business graduates fully use their knowledge and abilities in the accounting profession.	1	2	3	4	5
Accounting job provides you with a chance to have a good salary.	1	2	3	4	5
Accounting knowledge and skills never go out of date.	1	2	3	4	5
Accountants have to attend a lot of seminars to keep in touch with changes in their profession.	1	2	3	4	5
Accountants are not confused about their job.	1	2	3	4	5
Accountants can see the results of their job.	1	2	3	4	5
Accountants have extra bonus.	1	2	3	4	5
Accountants have specific clear task to do every day.	1	2	3	4	5
Accountants can understand their mistakes and correct them.	1	2	3	4	5
Accountants have life-long learning opportunities.	1	2	3	4	5
Accounting information is useful in all departments of the company.	1	2	3	4	5
The accounting profession leaves a lot of time for other things in your life.	1	2	3	4	5
Accounting job is challenging and dynamic.	1	2	3	4	5
Accountants need new ideas all the time to do their job	1	2	3	4	5
Accountants cooperate with variety of people outside the company.	1	2	3	4	5
Accountants have to solve difficult and challenging problems.	1	2	3	4	5
Accounting jobs have a lot of stress.	1	2	3	4	5
Accounting profession helps the well being of society.	1	2	3	4	5
Accountants work slowly on their own pace.	1	2	3	4	5

Accounting job for you is worth doing.	1	2	3	4	5
Most accounting jobs have independence and autonomy.	1	2	3	4	5
Accounting job requires you to use your mind.	1	2	3	4	5
Accounting job needs intellectual abilities.	1	2	3	4	5
Most accounting jobs are free from supervision.	1	2	3	4	5
Accountants are proud of their job.	1	2	3	4	5
Accountants need to be creative in their job, they have to find solutions for the company's' problems.	1	2	3	4	5
Accountants have to arrange every economic matter in time.	1	2	3	4	5
Accountants have the possibility for long vacations than the other business employees.	1	2	3	4	5
Public recognizes the importance of accounting job.	1	2	3	4	5
Accountants keep moral principles and standards in their job.	1	2	3	4	5
Accountants work alone, seldom cooperate with others employees.	1	2	3	4	5
There is always something new to learn each day in accounting jobs.	1	2	3	4	5

Accounting Intention Scale (AIS)

Further down there is a list of sentences that reveal your intention to pursue the accounting profession.

If you are **absolutely negative** about becoming an Accountant

Circle 1

If you are **negative**

Circle 2

If you **have not made up** your mind

Circle 3

If you are **positive** about becoming an Accountant

Circle 4

If you are **absolutely positive** about becoming an Accountant

Circle 5

	Absolutely negative					Absolutely positive				
1. Accounting is a job I might be very interested in having some day.	1	2	3	4	5					
2. I like the accounting profession and will pursue it in the future.	1	2	3	4	5					
3. My first choice will be the accounting profession.	1	2	3	4	5					
4. I will follow the accounting profession if I find a job as accountant after my graduation.	1	2	3	4	5					
5. I would enjoy being an accountant.	1	2	3	4	5					

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TEACHING TEAMWORK AND TECHNOLOGY SKILLS TO NAVIGATE A FLAT WORLD

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ABSTRACT

In today's information society organizations leverage the opportunities offered by widely available Information and Communication Technologies to bring together people with different knowledge and skills who may be geographically dispersed. As our students step into their professional lives they need to have the skills to succeed working in such virtual teams. This paper outlines an experimental curriculum in which two-year college students from a marketing class teamed with students from a multimedia class in the same college to work on a common project. The curricular goal was to help students gain team experience and skills in an interdisciplinary team setting that simulated the real world. The study looks at the results and lessons learned from this experimental collaboration, and discusses curricular components that can facilitate the development of technology-mediated teamwork skills in students.

INTRODUCTION

In the last ten years the rise of the Internet and related technologies have created new, faster and less expensive ways for people to communicate with each other. Not surprisingly organizations across the globe have taken advantage of this trend to improve how, where and how fast they work. As organizations become geographically dispersed, there is an increasing amount of work done by virtual teams, teams who do not meet in person and rely on information and communication technology (ICT). Such teams carry out many critical functions, including information collection and dissemination, decision making, and implementation (Canney-Davison & Ward, 1999). However they also bring with them new challenges in communication, cultural norms, leadership, performance evaluation and other areas.

Technology can both rise to meet these challenges and contribute to them. These virtual teams could not function without the Internet, low cost communications and advanced ICT such as web-based chat and conferencing tools, e-mail, collaborative writing tools, group decision support systems and workflow automation systems. As information and communication technologies permeate every aspect of organizational and personal life they challenge us, changing how we interact. Professionals and those studying to become professionals need to adapt to be successful.

Are our students ready to be a part of this trend? Harvard and MIT economists Richard Murnane and Frank Levy explain that in the future "good jobs will increasingly require expert thinking and complex communication. Jobs that do not require these tasks will not pay a living wage" (Levy and Murnane, 2004). It is increasingly likely that "expert thinking" and "complex communication" will make use of some form of ICT and that the jobs will be as part of a team or teams. To be ready for this trend students need both technological and collaboration skills.

Technological Skills

Studies show that student use of ICT is high and rising (Salaway et al. 2006, 2007). The newest generation of students is steeped in communication technology. They email, chat, send text messages, post videos on YouTube, share pictures on Flickr, and network with friends on MySpace and Facebook. The average college student spends 18 hours a week online (Salaway et al 2007). While online 99.9% of them use email, 84.1% use Instant Messaging and 81.6% use social networks such as Facebook. Evidence like this supports claims that students are indeed "Digital Natives," (Prensky 2001) comfortable using these technologies. However the question remains as to whether this familiarity with ICT actually translates into effective interpersonal communication and collaboration skills when those skills are needed to do "work" with teams, especially virtual teams.

Collaboration Skills

Industry representatives emphasize that recent graduates should have developed abilities to work in teams, to communicate effectively, to think critically, and to solve open-ended design problems (Black 1994; Coleman 1996). What are the skills necessary for successful collaboration? Stevens and Campion (1994) reviewed extant literature on teams to develop a conceptual model that suggested there is a set of interpersonal (including conflict resolution, collaborative problem solving, and communication) and self-management (including goal setting/performance management and planning/task coordination) knowledge, skills and abilities (KSAs) essential for effective team performance.

COLLABORATIVE EXERCISE

To address the need for technological and collaboration skills in today's students we modified two existing courses, a marketing class from the business field and a multimedia class from the field of technology. We used these two courses because they are both in professionally oriented fields, the interdisciplinary aspect of the project would parallel teams common in the real world and the skillsets of the students in the two classes complemented each other well for a hands-on project. The overall objective of the curriculum restructuring was to provide a setting for students where they could gain experience working in face-to-face and virtual teams and gain teamwork knowledge.

The curriculum planned for collaboration at two levels: within group collaboration and between group collaboration. Students in both the Marketing class and the Multimedia class were divided into an equal number of groups. Then each in-class group was paired with a sister group in the other class. Intra-class groups would communicate largely face-to-face and inter-class groups would communicate virtually. This virtual communication would be mediated by ICT, chiefly email and a web-based collaboration tool. The students were briefed by a client (in this case the career center) on a project that had to be completed by the end of the semester. The project was the creation of a learning object that was modular in nature and expressed as a web site. The Marketing students were responsible for developing the business specifications and much of the written content and the Multimedia students were responsible for developing the visual design and web pages. Each of the paired-groups was responsible for one module of the project.

A number of steps were undertaken by the researchers to ensure that the groups were well-formed and part of the overall course curricula. The groups were chosen by the instructors with efforts to create relatively equal groups with diverse backgrounds and skills. Clear roles were outlined for the group members (the students themselves chose who would fill the roles), and a general timeline with deliverables and inter-class workflow was laid out. The groups were integrated into the curricula through various means. Group assignments were included in the curriculum and were part of the final grade for the courses. A technology was chosen by the researchers to facilitate the interclass communication. Class time was used to demonstrate the technology and train students in its use (the technology, JotSpot has since been bought by Google). Students had time during class to work in groups with access to computers so they were able to use this technology during class time when the instructors were available for assistance.

Effectiveness of the Exercise

In order to assess whether the collaborative exercise increased students knowledge of how to work in teams, students were given a teamwork knowledge test at the beginning and then at the end of the semester. We used the team knowledge test (TKT) developed by Sims-Knight et al. (2002), and based loosely on the format used by Stevens and Campion (1994) for their Teamwork Knowledge Skills Aptitude (KSA) Test. The TKT is a measure intended to assess individual team members' general knowledge of team issues and concepts. The current test was designed for use with an undergraduate college population rather than a corporate population. Its 20 items are designed to sample students' understanding of four domains -- team process, decision making, communication, and conflict resolution.

This test presents a series of hypothetical situations in which the respondent is asked to choose the best response from among several options. An example of the items used in the TKT test is

Table 1. *Example TKT test question and answer choices. Correct answer in italics.*

'Your team leader comes to your scheduled meeting without an agenda. What should you do?' The four response options for this question are:

1.	<i>Make your first agenda item developing an agenda as a team.</i>
2.	Let the meeting proceed without an agenda.
3.	Tell the team leader to write out an agenda right now and take the rest of the team for coffee until s/he is done.
4.	Suggest the meeting be postponed until the team leader gets his act together

The developers reported relatively high reliability coefficients for the TKT scale [Cronbach's alpha was .78 pre-test and .76 post-test] (Sims-Knight et al. 2002). Thus the developers of the scale recommended that it would be valid to calculate an overall score for the TKT scale. The overall score can be interpreted as the amount of teamwork knowledge an individual possesses because it reflects knowledge of how to act in team situations. While the test is designed so that participants can receive an overall teamwork KSA score (Sims-Knight et al., 2002) we looked at differences between the total score and also individual items because in our case the reliability coefficient was somewhat lower, with Cronbach's alpha being .64 for pre-test and .67 for post-test.

RESULTS

The scores were summed to get an overall pre-test and an overall post-test score. On each item of the team knowledge test (TKT) students received a '1' for a correct answer and a '2' for an incorrect answer. Thus, a lower overall score meant more correct answers and implied greater team knowledge. A paired t-test was run to examine if there was a significant difference between pre- and posttest scores. Results did not indicate a significant difference ($t(1, 21) = -.29$; $p > .1$) between pretest scores (Mean = 25.68) and posttest scores (Mean = 25.91). Since the reliability coefficient of the TKT scale was not as high as those reported by the authors, we also examined differences between pre- and posttest scores for individual items using a Wilcoxon test, a paired non-parametric test. Results, again, did not indicate significantly greater team knowledge on any of the individual items. A count of correct answers indicated that 54.5% improved from the pre-test to the post-test, 41.0% did worse and 4.5% remained the same. The average number of items correctly scored on the pre-test was 13.36 while the average number of correctly scored items on the post-test was 13.68.

Table 2. *Improvements & Declines in Pretest vs. Posttest Scores*

	N	%
Improved	12	54.5%
Same	1	4.5%
Worse	9	40.9%

The TKT scale was meant to measure four domains: team process, decision making, communication, and conflict resolution, areas that are considered important for collaboration. Varimax factor analysis of both the pretest and post-test scores did not reveal any clear factor structure that reflected these domains.

In addition to the empirical data we collected we also observed the students during the class time allotted for them to work in groups. While a formal methodology was not used, some interesting observations were made. Overall, students struggled with basic project management skills. This included day-to-day activities like setting meeting agendas, and progress updates, and the more overarching strategic skills such as looking for bottlenecks and dependencies and making contingency plans. A significant number of students (although still in the minority) held

paying jobs where they had been exposed to teamwork. These students seemed to have a better grasp of what needed to be done to manage a project. However problems still arose when they got frustrated with other students who didn't have the same understanding or experience.

Another observation was that all students, even the business savvy ones, appeared to have trouble knowing how and what to communicate in the context of the project. One of the big problems seemed to be the lack of norms related to how much information to communicate, how often to communicate it and what tone to use. On more than one occasion when stalled teams were asked what the problem was they replied with something along the lines of "we sent the other team an email/JotSpot update and they did not get back to us."

Based on our observations it was clear that while the students did not have a problem with using technology itself (email, JotSpot, IM and others they used), they did have a problem using technology to effectively communicate and work within and across groups. It appeared that transfer of effective use of ICT tools from one domain to the next (personal life to class team) is not a simple matter.

DISCUSSION

There are several possibilities for why no improvement was seen in the TKT scores and for the difficulties we observed. One possibility is that the TKT scale itself needs further development. Factor analyses of both the pretest and posttest scores did not reveal any clear factor structure. The scale was meant to measure team process, decision making, communication, and conflict resolution, areas that are considered important for collaboration. More work may need to be done to ensure that the scale actually measures these areas and that the items in the scale correlate with behavioral measures of these different domains of collaboration. However we believe there are other, more significant, reasons for the lack of a significant difference between the scores.

The lack of improvement between students' pre and post-test scores in team knowledge and their observed difficulties could also be explained because of the absence of some specific interventions in the restructured curriculum. This absence may have been the result of two implicit assumptions that we made while setting up the course that then hindered the students from gaining more teamwork skills.

The first implicit assumption was that students' familiarity with various information and communication technologies would help them with inter- and intra-class communication and with the web-based tool we used for inter-class communication. This assumption failed to acknowledge that effective use of technology requires contextual knowledge and skills and our student did not have a good grasp on either. Because of our assumption we did not include any lessons or exercises to show the students how they could transfer their existing ICT skills to the context of their group projects.

Our second implicit assumption was that students would get better at teamwork just by working in teams. Unlike earlier studies that used this scale (Sims-Knight et al. 2002, Powers et al. 2002) we did not specifically teach students these types of teamwork skills either by giving them assigned readings on team skills or engaging them in team-building exercises. We created a curriculum that required students to work on hands-on projects in teams, and supported them with in-class time and communication technology, but it was not enough. This suggests that getting students together in teams, however well supported, is not sufficient to help build their knowledge of how to collaborate. Other research agrees with the idea that teams alone are not sufficient (Vik, 2001).

This second assumption led to a lack of directed interventions in the curriculum design. There are three activities in particular that were not present: 1) explicit teaching of knowledge and theory related to teamwork, 2) setting and discussing norms and behavioral standards, 3) feedback on or formative assessment of the groups.

Teaching teamwork skills and theory at the beginning of the course would have set a foundation for further practice and discussions of teamwork throughout the course. Making team-knowledge an essential part of the course content and helping students practice this knowledge in team-building exercises may be a necessary pre-requisite for success. However it may be a necessary but not sufficient requirement for students to learn teamwork. For example, Sims-Knight et al. (2002) also found no difference between pre- and post-test scores on the TKT scale even though students had readings on effective team functioning, homework assignments on the readings and two team-building exercises.

Another necessary prerequisite may be norms. For teams to function effectively it is necessary for them to develop norms and expectations related to communications and feedback, set and monitor goals related to team product, manage conflicts, and develop effective team problem-solving skills. Norms touch on how to behave in all four domains of the TKT. In the workplace people learn these norms through corporate culture, feedback from bosses, customers and co-workers already familiar with the norms. In an educational setting there is usually not an

existing culture to rely on or the same feedback channels. If norms are not established, modeled and brought up for discussion by the team and the faculty then they will develop in an ad hoc and not necessarily productive manner.

Feedback and formative assessment of adherence to norms and the performance of the groups are important for students to gain new skills. While people do internal checks of their own as they work in groups, relying on this informal self-assessment falls into the trap of our second assumption, that students will get better at teamwork just by being on a team. What is missing is a mechanism where students and groups are required to do self-assessment using more formal criteria and complete the assessment cycle by reflecting on the results and putting together an action plan for improvement. Faculty assessment of groups' collaboration skills would also be beneficial during the course of the semester.

In short, we did not clearly explain what good teamwork was, show what good teamwork looked like in action, and give the teams opportunities for feedback, self-assessment (including reflection and action on the assessment) and assessment by the faculty on their teamwork skills during the course of their projects.

RECOMMENDATIONS FOR THE FUTURE

The first recommendation is recognize that it is not information and communication technologies alone that makes or breaks collaboration. It is in fact the underlying communication and project management skills in combination with technology skills that drive effective teamwork. Much has been written about the "digital native" students who are learning, playing and communicating in new ways through technology and their "digital immigrant" teachers who don't quite get it all (Prensky, 2001, 2005; McHugh, 2005). An implicit or explicit theme is that teachers need to "get with already" and master the new technologies. While we believe that keeping up with technological innovations is important, we feel that the race to keep up and the discussions it fosters hide the need students have for more foundational, non-technical, skills and knowledge about collaboration. These core skills and knowledge are what allow students to effectively use their technological skills in academic and professional settings.

The second recommendation is make teaching, practicing and assessing teamwork skills an important part of the curriculum. It's not good enough to just put students in teams and hope for the best. If students are to improve their collaboration skills, those skills must be an explicit part of the curriculum. The following are three practical steps towards creating such a curriculum.

Step 1: Provide Foundational Knowledge on Important Collaboration Skills

The first step is to teach foundational knowledge of collaboration at the beginning of the course. Most traditional students entering college do not have much experience working in teams and therefore need to be provided with knowledge regarding how teams work and the skills that are salient to collaboration. The curriculum should cover how to make decisions, manage conflict, create communication networks, identify problems and develop solutions and foster decision making processes that allow all members to participate and voice their opinions. The teaching should also allow students to ask and answer questions such as: Is conflict bad? What happens when members have different goals and expectations? How do you facilitate creativity in a team? What is the best way to provide feedback? What tools can be used to facilitate team coordination?

Step 2: Set Norms and Guidelines on Behaviors

The second step is to set and model norms and behavioral guidelines. In order to be effective in team settings, members should be given norms, guidelines and training on what personal actions they can and should take to facilitate teamwork. They need to recognize when conflict is healthy and when it is not and what they can do to develop solutions and negotiate trade-offs to manage conflict. They also need guidelines on when and how to practice brainstorming, consensus building, fostering trust and developing benchmarks. These should be seen as a starting point for the students and not commandments in stone. Through the assessment process outlined in the next step students should be able to evaluate and modify these norms.

Step 3: Weekly Self-Assessment Process

The third step is to put in place a formative assessment process. This process should be based on the previous steps and also serve as a way to document the teams in action. Team processes are dynamic and it takes time for a

group of people to emerge as a strong team. Thus, for teams to work well, it is necessary to assess and monitor both individual as well as team performance. This assessment should also incorporate mechanisms for clarifying the norms and expectations of these team behaviors on an ongoing basis. Weekly documentation of team processes and decisions can be used for assessment purposes and allows the team to reflect on what works and what needs to be changed. Since these team dynamics underpin effective team performance, it is recommended that students be rewarded for completing these assessments. The weekly self-assessment can also be used by the faculty to monitor teams' progress and can serve as a tool for intervention if a team falters.

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FARM BUSINESS DIVERSIFICATION: A LOGIT ANALYSIS

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ABSTRACT

This study investigates the effect of socio-economic and demographic characteristics, and farm attributes on on-farm and/or off-farm diversification. Results of estimated logit models suggests that age, education, area under vegetables, income from farming, variability in rainfall, debt management, and participation in government educational programs significantly influence farmer's on-farm and/or off-farm diversification. Findings of this study contribute to the literature on the subject of farm diversification in urbanized areas.

INTRODUCTION

The aim of this study is to examine the impact of various factors on farm diversification in New Jersey. There are several reasons for undertaking this study. First, New Jersey agriculture is structurally different from the rest of the country in terms of product mix, farming environment and farm business characteristics. Farms are much smaller in size and produce a much wider range of products compared to those in other states. In 1998, farmers receive most of their revenues from greenhouse and nursery enterprises that accounted for a third of their total cash receipts. Vegetables production was the second most important revenue source for farmers accounting for about a quarter of total cash receipts. Although livestock and dairy products accounted for about a fifth of New Jersey agricultural revenue, the share of this sector is steadily declining. Fruits and berries represented 12 % of total agricultural cash receipts. Finally, field crops and forages contributed for 7 % of total cash receipts.

Second, risk and uncertainty have major impacts on farming. New Jersey horticultural producers use crop diversification to manage their farm risks, but the reduction in overall farm risk via this strategy often comes at a cost in terms of lower overall farm return. We used data (1980-1998) on vegetable crops and found that partial correlations of per acre revenues from nine major vegetable crops produced in New Jersey ranged from 0.25 between cucumber and cabbage, and 0.93 between tomato and lettuce. This suggests opportunity for significant revenue risk reduction via crop diversification. Knowing that New Jersey farmers produce a large number of vegetable crops, it is not apparent which crop mix offers the best risk-return prospect. Nine vegetable crops can lead to more than 100 alternative crop combinations. We found only 19 of them were on the efficient risk-return frontier and therefore dominate other crop mix. We also found that a vegetable grower can achieve reasonable degree revenue stabilization with only 4 crops. Further diversification brought additional revenue reduction only at a decreasing rate.

Third, there are several factors must be taken in account in deciding whether to specialize in the production of one or two crops or whether to diversify by producing a number of crops. Even where farm diversification is apparently gaining ground, it is only a limited amount of diversification. Past studies did not analyze the impact of socio-demographic factors (age, education, experience, farm size and type, gross income, marketing practices and indebtedness) on perceptions and use of diversification by New Jersey farmers. Lack of such information may adversely affect producers' production decisions.

ESTIMATION

We used a logistic regression model to examine the relationship between socio-economic and demographic factors and farmers' use of diversification. The estimation method of choice is the maximum likelihood estimation (MLE), because the data set contains individual rather aggregate observations. The parameter estimates from the MLE are consistent and asymptotically efficient. The model assumes that the probability of observing a particular outcome, P_i , is dependent on a vector of explanatory variables (X_i) associated variable i . This probability is calculated from the following general form:

$$P_i = F(Z_i) = F(\alpha + \beta X_i) = 1/(1 + e^{-Z_i})$$

Where:

$F(Z_i)$ = the value of the standard normal density function associated with each possible value of index Z_i .

P_i = the probability that the farmer will invest in on- or off-farm opportunities.

e = the base of natural logarithms approximately equal to 2.7182.

Z_i = the underlying index number or βX_i (linear combination of independent variables)

$$Z_i = \log [P_i / (1 - P_i)] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon$$

Where:

Z_i = the weighted sum of a vector of factors which are hypothesized to influence farm diversification.

X_n = the n^{th} explanatory variable for the i^{th} observation.

β = the parameters to be estimated.

ε = the error or disturbance term.

DATA

Data used in this study were collected during March-June 2001 via statewide mail survey by New Jersey Agricultural Statistics (NJ/NASS) on behalf of Rutgers University. The objective of the survey was to gather information on the importance of various risk sources and risk management practices as perceived by the farmers as well as the socioeconomic and farm characteristics of farmers. The survey primarily targeted two groups of farmers: (1) fruits and vegetable growers; and (2) field and forage crops, and livestock producers. About 1200 farmers were randomly selected for each group with a target sampling error of $\pm 3\%$.

A total of 845 usable responses were returned which represented a reasonable 34 percent response rate. Survey analysis results show that 41% of farmers earned more than half of their annual revenue from off-farm investment opportunities. About 43% of farmers derive 60% or more of their income from farming. Table 1 contains summary statistics for each independent variable included in each model. After removing observations with missing values, 524 cross-sections were used in this study.

Table 1. Definitions and Summary Statistics of Explanatory Variables Used in Logit Models

Variable	Description	Mean	Std. Dev.
EXPER	Farming experience (years)	28.613	15.167
OWNLAND	Area owned by the farmer (acres)	92.400	167.039
AC_FIELD	Area under field crops (acres)	109.743	311.346
AC_VEG	Area under vegetables (acres)	15.621	48.897
AC_FLOW	Area under flowers (acres)	0.252	1.263
AC_GREEN	Area under greenhouse (acres)	14.743	327.661
FARMINC	Percentage of total income comes from farming (%)	42.328	39.888
FULLTIME	= 1 if farming is the farmer's full time occupation, 0 otherwise	0.475	0.500
INCGT_250	= 1 if gross income from farming operation was above \$250,000, 0 otherwise	0.109	0.312
AGE_55	= 1 if the farmer's age was above 55, 0 otherwise	0.466	0.499
ED_COLL	= 1 if the farmer's has some college education, 0 otherwise	0.536	0.499
RAINRISK	= 1 if the farmer has greater concern about variability in rainfall, 0 otherwise	0.500	0.500
O_PRICERISK	= 1 if the farmer has greater concern about variability in output prices, 0 otherwise	0.365	0.482
GOVT_RISK	= 1 if the farmer has greater concern about changes in government programs, 0 otherwise	0.197	0.398
DEBTSVG51	= 1 if at least 51% of gross farm income went to debt servicing, 0 otherwise	0.082	0.275

R_AVERSE	= 1 if her primary marketing goal is to reduce risk than raise her sales price, 0 otherwise	0.139	0.347
MULTECH	= 1 if the farmer has more than one variety or technique of production, 0 otherwise	0.679	0.467
IRRIG	= 1 if the farmer uses irrigation, 0 otherwise	0.410	0.492
LIVESTOCK	= 1 if the farmer has livestock, 0 otherwise	0.443	0.497
SPREAD	= 1 if the farmer spreads sales, 0 otherwise	0.597	0.491
RESERVE	= 1 if the farmer maintains financial reserves, 0 otherwise	0.635	0.482
DEBTMGMT	= 1 if the farmer works with lenders to ease debt burdens in bad times, 0 otherwise	0.494	0.500
PACINGINV	= 1 if the farmer plans for capital spending by pacing investments, 0 otherwise	0.653	0.477
CROPINS	= 1 if the farmer uses crop and/or revenue insurance, 0 otherwise	0.332	0.471
GVTPROG	= 1 if the farmer participates in government programs, 0 otherwise	0.481	0.500
RISKEDUC	= 1 if the farmer attended any educational programs in the recent years, 0 otherwise	0.351	0.478

RESULTS AND DISCUSSION

Regression model results suggest that factors such as age of the operator, level of education, area under vegetables, income from farming, variability in rainfall, risk aversion, debt management, and participation in government programs influence product and/or income diversification. Tables 2 and 3 present the results of the estimated logit models (Model #1 with “off-farm investments as dependent variable” and Model #2 with “on-farm investments”). The McFadden R^2 s of 0.17 and 0.32 for Model #1 and for Model #2, respectively, indicate that the explanatory variables used in the regression models explained 17% and 32% of the variation in farm diversification. The log-likelihood ratio (LR) Chi-square statistic (-2LogL), which tests the joint significance of the explanatory variables is significant at the 1% level for both models.

Table 2 contains the maximum likelihood estimates of Model #1. The coefficient of “AC_VEG” is negative and significant at 10% level. The coefficient of “FARMINC” is negative and significant at 1% level. The coefficient of “ED_COLL” is positive and significant at 5% level. This result suggests that farmers with a higher level of education are more likely to invest in off-farm opportunities (Mishra and Morehart, 2001). The coefficient of “RAINRISK” is positive and significant at 10% level. The coefficients of “RESERVE”, “DEBTMGMT”, and “PACINGINV” are positive and significant at least 1% level. Attending educational programs on agricultural and risk management has positive effect on off-farm investment since the coefficient of “RISKEDUC” is positive and significant at 5% level.

Table 2. Maximum Likelihood Estimates of the Logit Model with Off-Farm Investments as Dependent Variable

Explanatory Variable	Parameter Estimate	Standard Error	Wald Chi-Square	Pr > Chi ²
INTERCEPT	-0.807**	0.393	4.215	0.040
EXPER	0.012	0.008	2.122	0.145
OWNLAND	0.000	0.001	0.073	0.787
AC_FIELD	0.000	0.000	0.646	0.422
AC_VEG	-0.004*	0.002	3.046	0.081
AC_FLOW	-0.136	0.120	1.270	0.260
AC_GREEN	0.244	0.239	1.046	0.306
FARMINC	-0.011*	0.005	5.188	0.023
FULLTIME	-0.462	0.353	1.718	0.190
INCGT_250	-0.197	0.423	0.217	0.641
AGE_55	-0.355	0.243	2.133	0.144
ED_COLL	0.451**	0.230	3.839	0.050
RAINRISK	0.401*	0.232	2.982	0.084
O_PRICERISK	0.150	0.261	0.332	0.564

GOVT_RISK	-0.155	0.317	0.240	0.624
DEBTSVG51	-0.096	0.396	0.059	0.808
R_AVERSE	-0.154	0.322	0.229	0.632
MULTECH	0.023	0.265	0.008	0.931
IRRIG	0.364	0.278	1.712	0.191
LIVESTOCK	0.282	0.243	1.351	0.245
SPREAD	0.283	0.245	1.333	0.248
RESERVE	0.632***	0.247	6.553	0.010
DEBTMGMT	0.598***	0.243	6.066	0.014
PACINGINV	0.951***	0.262	13.213	0.000
CROPINS	-0.424	0.293	2.089	0.148
GVTPROG	0.438	0.297	2.178	0.140
RISKEDUC	0.496**	0.272	3.331	0.068

Notes: Single, double, and triple asterisks (*) denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 3 contains the maximum likelihood estimates of Model # 2. The coefficients of “AC_FIELD”, “AC_VEG”, and “AC_FLOW” are positive and significant at least 5% level. The coefficient of “INCGT_250” is negative and significant at 5% level. The coefficient of the variable “AGE_55” (age above 55) is negative and significant at 10% level for Model #2. The coefficient of “MULTECH” is positive and significant at 1% level. The coefficient of “IRRIG” is positive and significant at 5% level. The coefficient of “LIVESTOCK” is positive and significant at 1% level. The coefficient of “DEBTMGMT” is negative and significant at least at 10% level. This suggests that farmers with low debt levels are more likely to diversify their income with off-farm investments. This result is also consistent with the findings by Mishra and Morehart (2001). The coefficient of “PACINGINV” is positive and significant at least at 5% level.

Table 3. Maximum Likelihood Estimates of the Logit Model for Use of Multi-Enterprises as Dependent Variable

Explanatory Variable	Parameter Estimate	Standard Error	Wald Chi-Square	Pr > Chi ²
INTERCEPT	-1.722***	0.459	14.088	0.000
EXPER	0.004	0.009	0.168	0.682
OWNLAND	-0.001	0.001	0.492	0.483
AC_FIELD	0.002***	0.001	5.184	0.023
AC_VEG	0.030***	0.012	6.114	0.013
AC_FLOW	0.552**	0.289	3.660	0.056
AC_GREEN	0.248	0.399	0.388	0.533
FARMINC	0.001	0.006	0.032	0.857
FULLTIME	-0.072	0.392	0.034	0.853
INCGT_250	-0.967**	0.544	3.163	0.075
AGE_55	-0.466*	0.279	2.799	0.094
ED_COLL	-0.012	0.270	0.002	0.965
RAINRISK	0.209	0.261	0.641	0.423
O_PRICERISK	-0.067	0.303	0.049	0.825
GOVT_RISK	0.267	0.380	0.495	0.482
DEBTSVG51	0.717	0.476	2.266	0.132
R_AVERSE	-0.279	0.367	0.580	0.446
MULTECH	2.083***	0.269	59.823	< 0.0001
IRRIG	0.643**	0.318	4.083	0.043
LIVESTOCK	0.976*	0.285	11.754	0.001
SPREAD	0.306	0.266	1.328	0.249
RESERVE	0.342	0.282	1.474	0.225
DEBTMGMT	-0.461*	0.274	2.821	0.093

PACINGINV	0.553**	0.294	3.532	0.060
CROPINS	-0.116	0.339	0.117	0.733
GVTPROG	0.022	0.331	0.005	0.946
RISKEDUC	-0.078	0.302	0.067	0.796

Notes: Single, double, and triple asterisks (*) denote statistical significance at the 10%, 5%, and 1% levels, respectively.

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PEOPLE'S REPUBLIC OF CHINA (PRC) AND COUNTERFEITING: SHOULD GLOBAL BRAND OWNERS CARE?

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ABSTRACT

Peoples Republic of China (China) stands tall as a one of the fastest growing economies in the world. With Gross Domestic Product (GDP) growth of over 10% per annum, rapid economic development and a burgeoning consumer class, China has the potential to become one of the world's most significant markets. As the world watched the miracle of China with amazement and envy, many have lost sight of the fact that yet another phenomenon has been emerging with the potential to become a multi-billion dollar opportunity for China and many of its low cost neighbors. This phenomenon is "Counterfeiting." The author will illustrate how China's value proposition, which is driving multinationals to move manufacturing to China, has also created an ideal climate in which counterfeiting will thrive to the detriment of corporate brand reputation.

INTRODUCTION

In less than three decades People's Republic of China (China) has transformed itself from a lumbering agrarian economy to a rapidly developing industrial economy. China's resilience as an economic powerhouse is reflected in the fact that whereas socialist regimes around the world have crumbled, China's Communist Party managed to survive the 1989 Tiananmen Square uprising, the 1997 Asian crisis and the SARS virus without making concessions to democracy. Since joining WTO in 2001, China has rapidly become an economic force, doubling its share of global manufacturing output, creating a commodity-market boom and accumulating \$1 trillion of foreign exchange reserves (Economist, 2007). China today is home to some of the largest companies in the world and its economy will soon rival those of leading countries such as France and the United Kingdom (Mckinsey Quarterly, 2004).

In many industries, especially the labor-intensive ones, China is already a dominant global player. China-based factories today manufacture 70 percent of the world toys, 60 percent of world's bicycles, 50 percent of world's shoes, and 33 percent of world's luggage. China also manufactures 50 percent of the cameras, 30 percent of the air conditioners and televisions, 20 percent of the washing machines, and 20 percent of the refrigerators sold worldwide. In high technology, China manufactures computer chips, telecommunications, and military aircraft as well as assembling automobiles and commercial aircraft (Shenkar, 2005). China's value proposition is reflected in its seemingly limitless supply of cheap and skilled labor, flexible investment policies, consistently developing infrastructure, and the rapid acquisition of technological prowess. Preferential treatment and strong incentives via tax policies have converted China's coastal provinces into the world's factory for manufactured goods and established a critical node in the global supply chain.

CHINA: A MAGNET FOR FOREIGN DIRECT INVESTMENT

China's current growth rate, its entry into the WTO, and the 2008 Beijing Olympics all point to unprecedented levels of interest in the world's largest market. Thousands of companies of all sizes, including more than 460 Fortune 500 companies now operate in China. Foreign Direct Investment (FDI) flow into China is presented in Table 1 below:

Table 1: FDI Inflow-Main Recipients 2002 – 2006

2006 rank		2002	2003	2004	2005	2006	Cumulative 5 years
1	US	74.5	53.1	122.4	99.4	183.6	523.0
2	UK	25.5	27.6	77.9	195.6	137.7	434.3
3	France	49.5	43.1	38.7	70.7	86.9	288.9

4	China	49.3	47.1	54.9	79.1	78.1	308.5
5	Belgium	18.1	34.5	44.4	32.0	72.5	201.5

Source

s: World Investment Prospects – Global Foreign Direct Investment to 2011

China is projected to attract almost 6 percent of global trade and 16 percent of the projected inflow of FDI into the emerging markets in 2007 and beyond. The World Investment Report (2007) predicts that the United States and the developed European Union members (inclusive of intra-EU inflows) will continue to dominate as recipients of world FDI.

In its new role as the manufacturing capital of the world, China has experienced a significant surge in its exports. China's exports, which exceed \$1 billion daily, include huge volumes of electrical appliances, garments, toys, processed foods and other consumer goods. China has recently recorded phenomenal growth in exports of high-tech products such as notebook and desktop computers, DVD players, mobile phones and the like. The products exported by China to the U.S. and elsewhere include the brand name products of multinationals which have established a manufacturing base in China or have contracted the manufacturing to Chinese companies. Also included in these exports are the unbranded or private label products, Chinese brands, and knockoffs or counterfeit products that are shipped around the world via the integrated supply chain.

PRODUCT COUNTERFEITING

From a lay person's viewpoint the terms "counterfeit" "piracy" "fake" and "knockoff" generally refer to goods that are infringements of trademarks, patents or other proprietary know-how. A counterfeit product, in simple terms, is something that is forged, copied or imitated without the consent of the intellectual property right holder for the avowed purpose of deceiving or defrauding (Economist, 2003). Technically, the term "counterfeiting" refers only to cases of trademark infringement while "piracy" refers to copyright infringement (Consumer Reports, 2008). Since different types of infringements overlap, the author will use the term "counterfeiting" to include all types of intellectual property infringements.

Counterfeiting is a global phenomenon that crosses national and industry boundaries. Since the early 1990s, counterfeit trade is estimated to have grown 8 times faster than legitimate trade. According to the U.S. Dept. of Commerce counterfeiting is inherently secretive and much like illegal immigration its true impact is hard to measure. While there is no precise way of measuring the impact of counterfeiting and piracy in monetary terms, the following estimates have been provided to bring home the fact that the intensity of this global problem is enormous (Tella 2007; Boswell 2006; OECD, 2007; U.S Immigration & Customs, 2007). According to the World Customs Organization (WCO), pirated and counterfeit goods account for roughly seven to ten percent of global trade. World Customs Organization estimates that more than \$600 billion in pirated and counterfeited goods flooded the world market in 2005.

The past quarter of a century has witnessed a significant rise in the counterfeiting of consumer and industrial goods across the globe. While the western world was almost totally absorbed monitoring the next quarterly earnings and stock price performance counterfeiters were busy expanding and establishing sophisticated manufacturing facilities and luring major distributors to move their products worldwide. Once a localized cottage industry concentrating on the copying of high end designer goods and music in the back alleys of shady towns, counterfeiting has emerged as a massive, sophisticated global business involving the manufacture and sale of counterfeit version of everything imaginable.

While it is not a crime to buy fake products, the counterfeiting and piracy of intellectual property are crimes policed by a complex partnership of manufacturers and federal agencies, including the departments of homeland security, commerce and justice, the state department, and the office of the U.S. trade representative, custom and border protection officers and import specialists target and seize counterfeit merchandize at the nation's 326 ports of entry and mall facilities (Consumer reports, 2008). Counterfeiters produce everything from fake ZARA clothing and LEGO play bricks to CARTIER and Rolex watches computer component parts bearing brand names of Intel, Cisco, Phillips Electronics, Motorola and Siemens. Even well respected automobiles like BMW, Mercedes Benz, Toyota and General Motors are not immune. Counterfeiters manufacture automobile and aircraft spare parts and even entire automobiles (Spring, 2006: Schwartz, Wong, 2006).

As China became the world's leading assembler and exporter of manufactured goods, it also gained prominence in the manufacture and trade of knock-off and counterfeit products (Yeh, 2006). Although overall global

rankings of counterfeit nations are not available, various indicators point to the fact that China is the undisputed leader in use, manufacture, distribution and exportation of pirated and counterfeit products. Besides China, counterfeit exports have been traced to Russia, countries in the former Soviet bloc, India, the Philippines, the Middle East, Africa and Latin America (Tella, 2007; Mingkun, 2007; Rein, 2007; Shenkar, 2005).

Driving forces

Counterfeiting has become a problem for societies and economies around the world due to a number of factors including: the rise in popularity and value of brands; the availability of advanced computer technologies to legitimate businesses and counterfeiters alike; the globalization of markets and the high profit potential in counterfeit products and, the low probability of being caught or punished. Some of these driving forces are highlighted below:

Globalization and Free Trade: The last decade of the twentieth century changed the globe for ever as the world experienced the fall of the Berlin wall, the dissolution of the Soviet Empire, and the opening up of economies. The market oriented economic reforms that swept the world in 1990s and privatized industries in many economies also boosted the incentives to take advantage of opportunities offered by open economies by entrepreneurs ignorant of intellectual property rules and legitimate businesses (Naim, 2006).

Globalization also empowered the multinational and transnational as well as the counterfeiters. Emergence of Free-trade zones, with their relative lack of controls, has expanded rapidly in recent years, also become important channels for counterfeit and pirated products. Offshore outsourcing, which has become the key catalyst to current globalization, enabled companies to move from “contract assemblers” and “systems component” to manufacturers of completed products ready for the world market (Shin-Fen S. Chen, 2007).

Technological Innovation: The counterfeiting industry took advantage of new technology and perfected the art of manufacturing the exact replicas of brand name products to the extent that it is not possible to detect fake components or parts under normal incoming inspection routines (Grundy, 2005). New technologies facilitating more efficient shipments, new loading and unloading tools, better port management, new packaging materials, just in time inventory management, satellite navigation and tracking benefitted makers of legitimate and counterfeit products alike (Naim, 2006). The Internet provided counterfeiters and pirates with a new and powerful means to sell their products via auction sites, stand alone e-commerce sites and e-mail solicitations.

Global Branding and Knowledge Sharing: A prerequisite to successful global branding via offshore outsourcing, franchising and licensing is sharing of technology and know-how, intellectual property-designs, molds, specifications, trade secrets with overseas subsidiaries, suppliers and licensees and hundreds of contractors and subcontractors all over the world. This practice created a lucrative business opportunity for counterfeiters across the globe (Parloff, 2006).

Complex Legal System: Maneuvering through the Chinese legal system to protect intellectual property, recover embezzled identities, retrieve stolen data, or prosecute the exposure of private information has been a challenging experience for U.S. corporations (Reed, 2005). The high profitability of many counterfeiting and piracy activities and low risk of detection and relatively light penalties have provided counterfeiters and pirates with an attractive environment for these illicit activities. There are, in fact, more incentives to break IPR laws in China, since criminal penalties for counterfeiting consist of modest fines and prison terms (Kearney).

SAVING BRAND REPUTATION

Counterfeiting of branded products not only creates competition for genuine brand names, it also robs the brand owners of their intellectual property. When a brand attack occurs, brand owners not only lose their revenue and market share but their corporate and brand reputations also suffer huge damages. Lack of transparency and awareness about the ill effects of counterfeiting creates an impression and conviction that counterfeiting is a victimless crime. Consumers do not think twice about purchasing a knock off product if it looks the same and/or the price is right. Research indicates that multinational corporations are trying to fight counterfeiting by hiring full time staffers, recalling fake products, and bringing about lawsuits and investigations to protect their intellectual property (Business Week, 2005). To protect their brand image and their bottom line many are deploying detectives around the world and pressuring governments from Beijing to Basra to crack down using everything from electronic tagging to redesigning the products, to aggressively pricing them to thwart the counterfeiters.

While many multinational enterprises operating in China have devised reactive IP-protection strategies most are working on an ad hoc basis, a sort of learn-as-you-go system. (Kearney). Combating Counterfeiting and piracy requires proactive strategies that allow the corporations, industries and governments to get to the root of the problem and develop a coordinated global effort to stem “counterfeiting.” At the corporate and brand level, a proactive approach to stem the problem would require a comprehensive, integrated process of brand audit, supply chain management, continuous monitoring, use of technology and education. According to Organization for Economic Cooperation and Development (OECD, 2007) the tangible and monetary costs involved in preventing counterfeiting is comprehensive. A brief overview of such costs is provided in Table 2 below:

Table 2: Costs Factors in Combating Counterfeiting and Piracy

Type of costs	Costs variables
Product protection	Products are modified to make them difficult to counterfeit
Packaging	Special packaging such as holograms and track and trace technologies are used to deter counterfeiters and pirates
Litigation	Legal actions are taken against counterfeiters and pirates
Investigation and research	Investigations are carried out to track down counterfeiting activities
Cooperation with governments	Resources are used to provide technical and other type of support to governments
Awareness	Initiatives are taken to raise the awareness of stakeholders of development and issues
Liability	To build good will, firms may settle claims arising from counterfeit or pirated products
Disposal	Handling and disposal of seized products

Source: Organization for Economic Cooperation and Development (OECD, 2007)

Final Words

Counterfeiting affects both Chinese and foreign IPR holders, and is a growing concern for major trading partners such as North America, the European Union and Japan. While concerns about shrinking profit margins, increased warranty costs, intellectual property and brand protection are important issues, equally important is the need to take a proactive approach to stem counterfeiting and piracy. Offshore outsourcing as a business model is here to stay and China will continue to be a key beneficiary of this business strategy. Implementing the proposed recommendations will not stop the counterfeiters in China or elsewhere but corporations and their value chain participants can become considerably more effective adopting proactive initiatives, leveraging new capabilities, embracing converged solutions and managing their brand reputation in a systematic and prudent manner.

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USING BLOOM'S TAXONOMY TO INFORM COURSE DESIGN: TEACHING AND ASSESSING BASIC CONCEPTS TO ADVANCED APPLICATIONS IN AN ONLINE ENVIRONMENT

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ABSTRACT

Online courses are required by accrediting agency standards and school policy to achieve the same course objectives and learning outcomes as their traditional classroom equivalents. Students also expect to receive the same quality of education regardless of delivery method. However equity cannot be equality because the methods available to traditional course and online courses differ considerably. The instructor's primary challenge is to design a course that can progress from basic concepts to advanced applications within a single semester in an online environment. The secondary challenge is assessing whether the learning objectives are reached. In this paper, Bloom's Taxonomy of Educational Objectives is utilized to guide course design and assessment considerations. The development of a core undergraduate level online organizational behavior course will serve as an example.

INTRODUCTION

Online courses are becoming an increasingly important part of a college or university's mix of offerings. More schools are offering courses online and those that already do are expanding their offerings. As this trend develops, students are expecting to have the option to take at least some of their courses online. Schools that do not provide online courses risk being at a disadvantage in recruiting and retaining students. Despite the apparent acceptance of online instruction it is obviously different than traditional classroom instruction. The real-time in-person interaction between students and instructor in a real classroom is lost in a virtual environment. The primary challenge for the instructor is to design an online experience that moves from delivery of basic knowledge to some equivalent of the sophisticated meaningful discussion available in traditional classroom based courses. The secondary challenge is to assess the steps along the way. This paper starts with a brief discussion of these challenges. Next will be a description of Bloom's Taxonomy of Educational Objectives, which is used as a guide for the next section – an approach to designing a course. An undergraduate level organizational behavior course will be used as an example. The paper concludes with a suggestion that this approach can be used for designing other college courses and perhaps entire curricula.

THE CHALLENGE OF TEACHING AT MANY LEVELS IN AN ONLINE ENVIRONMENT

Distance education has been around since at least the 1700's (Harting & Erthal, 2005). What started with the correspondence school model has now migrated to the internet. There are many reasons for the proliferation of online courses including the development of facilitative technologies, increased competition in higher education, shifts in ideas regarding teaching and learning and financial pressures (Dykman & Davis, 2008). Not only are they increasing in number, there is also an increase in their acceptance among students. Most students that take online courses would recommend them to others and continue to take other courses online if possible (Borstorff & Lowe, 2007). Concurrent with the rise of online education has been a corresponding academic literature that outlines the major concepts and issues related to online and distance education (Bryant, Kahle & Schafer, 2005; Hamzaee, 2005). "The critical task that lies ahead is to create and disseminate curricula of high quality that students can embrace and educators can sustain" is how Dykman and Davis (2008) outlined the primary underlying issue. Much of the research is focused on the importance of getting faculty buy-in to effectively implement online courses (Lee, Tan & Goh, 2004) and the process of adapting traditional courses to an online environment (Su, 2005). There is also significant concern with how accrediting agencies such as the AACSB will react to the increase in online courses (Vincent & Ross, 2002).

Learning outcomes, learning activities, and learning assessments are considered "three key components of course design" (Whetten, 2007). With learning objectives already in place for most courses, the primary challenge for the instructor becomes the selection or development of learning activities. The idea is to design an online

experience that moves from delivery of basic knowledge to some equivalent of the sophisticated meaningful discussion available in traditional classroom based courses. Student achievement of multiple course objectives is not significantly less in web-based instruction compared to traditional classroom instruction (Kotey & Anderson, 2006). However, despite no difference in such measures as final exam performance, students frequently are more satisfied with and prefer traditional courses and perceive greater skill development and learning (Priluck, 2004). Students want more communication with the instructor and each other (Borstorff & Lowe, 2007). It is also important to note that the equivalent performance is primarily on objective material (Jones, Moeeni & Ruby, 2005). There may be differences in learning of higher level skills, which are associated with greater interaction and communication. Therefore it is advantageous to 'humanize' online courses by designing active participation and interaction into the course (Lee, Tan & Goh, 2004).

In this paper we present an approach to online course design that considers various online methods, including more active and participatory methods, and coordinates them with Bloom's taxonomy of educational objectives to enhance learning at higher levels and address common student concerns. The secondary challenge is to assess learning objectives at different levels of learning. Using several methods of assessment, each closely linked to learning objectives and activities is the key in this area. Along with these concerns is the practical concern of how accrediting agencies will react to the implementation of online courses (Vincent & Ross, 2002). Recently the AACSB standards have shifted from a focus on assessment of internal processes to a focus on assessment of learning, and other accrediting organizations use either process or learning focus. The process that we propose in this paper is based on both learning and assessment; therefore it addresses concerns associated with either approach.

BLOOM'S TAXONOMY

In 1956, a group headed by Benjamin S. Bloom, after working on a project since 1949, finally published what is now known as 'Bloom's Taxonomy' (Bloom, 1956). It was originally intended to help instructors measure learning by providing guidelines as to what can be expected from instruction. The taxonomy has six levels - Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation – used to help develop rubrics and measure learning (Bloom, 1956; Krathwohl, 2002). It is still used in its original form, however there are occasional modifications (i.e. Christopher, Thomas & Tallent-Runnels, 2004), revisions (i.e. Krathwohl, 2002) and alternative typologies proposed (i.e. Lytras & Pouloudi, 2006). The typology is still used in evaluation (Bissell & Lemons, 2006; Athanassiou, McNett & Harvey, 2003); however it has found great use in course and curriculum development and design (Christopher, Thomas & Tallent-Runnels, 2004; Noble, 2004). It has been used in developing specific curriculum areas such as the teaching of business ethics (Reeves, 1990). Bloom's typology has even found use in supervision (Granello, 2000), graduate work (Granello, 2001) and with such contemporary methods as discussion boards (Christopher, Thomas & Tallent-Runnels, 2004). For example it has been used in combination with the ideas of W. Edwards Deming in creating quality control sheets to track interactions between instructor and students (Hills, 2004).

Table 1

Levels of Thinking – Adaptation of Bloom's Taxonomy

Adapted Level	Original Levels	Typical Behaviors
Low level	Knowledge or Understanding	Behaviors that emphasize recall or memory or indicate a literal understanding
Medium level	Application or Analysis	Behaviors that require students to use what they have learned in a new way or that break down knowledge into its component parts
High level	Synthesis or Evaluation	Behaviors that combine elements of learning into a new whole or that assess the value of particular ideas or solutions

Note - Adapted from Christopher, Thomas & Tallent-Runnels, 2004

DESIGN APPROACH USING BLOOM'S TAXONOMY

Our approach to course design uses a modification of Bloom's Taxonomy (Christopher, Thomas & Tallent-Runnels, 2004). We reduced the taxonomy to three levels, as shown in Table 1. The basic approach involves three

ideas. First, course elements must correspond to and address course learning outcomes. Second, course elements need to cover all levels of learning and the third consideration is that the course elements (and learning outcomes) can be assessed. Many techniques or 'course elements' can be used in designing a course. Table 2 shows the course elements used in an undergraduate level organizational behavior course. The same table shows the degree to which each element addresses topics at the three levels of learning. For example, online multiple choice questions deal with basic material, therefore are rated 'high' on the first level of learning. Some questions do beyond the basic material, so a rating of 'medium' is given for the second level of learning. Synthesis and evaluation is not possible in online multiple choice quizzes, therefore 'low' is indicated. Online quizzes are not a teaching/learning method. The more accurate description is 'online quizzes of book material', whereas reading and studying the textbook is the learning activity and the quiz itself is a grading and assessment vehicle.

Table 2**Course Element Correspondence to Bloom's Taxonomy**

Course Element	Knowledge/Understanding	Application/Analysis	Synthesis/Evaluation
Chapter Quizzes	High	Medium	Low
Essay Quizzes	Medium	High	Medium
Discussion Board	Medium	High	Medium
Podcast Quizzes	Medium	Medium	High
Individual Project	Low	Medium	High

LEARNING OUTCOMES AND ASSESSMENT

Multiple teaching methods are often preferable to a single approach for achieving a given learning objective (Bonner, 1999). The online environment facilitates the use of an assortment of teaching methods that respond to a variety of course learning objectives and student learning styles (Zapalska & Brozik, 2006). The complexity of the skills related to a learning objective determines the appropriate teaching methods. More active and integrative methods are needed for more complex skills, whereas passive approaches can be used for basic content delivery and simple skills (Bonner, 1999). Textbooks provide adequate coverage of basic material. Students with weaker backgrounds will spend more time learning the basics and knowledgeable students can breeze through it. In our example, coverage of basic material is the first of four learning objectives. Table 3 shows which course elements cover each of the objectives.

Lower order learning can and should be measured by objective exams, whereas higher order learning requires essays or some other form of evaluation (Ingram & Howard, 1998). Multiple choice questions are appropriate for measuring basic knowledge (Buckles & Siegfried, 2006). In our course design, multiple choice quizzes for each book chapter serve the purpose of assessing student mastery of basic material.

The learning objectives of formulating personal stances and applying course material to real life situations reflect the strong push for improving the critical thinking skills of business school graduates (Braun, 2004). Some methods of instruction are better than others at meeting the challenge of improving critical thinking skills (Braun, 2004). Discussion boards and essay quizzes encourage critical thinking about the course content (DeLoach & Greenlaw, 2007). There is some evidence of higher levels of some cognitive processes in online discussions compared to traditional classroom discussions (Heckman & Annabi, 2006).

Discussion boards also give the instructor an indication of the level of understanding of the course material. To avoid a 'follows the leader' reaction to instructor posts, instructor comments should be limited as to not lead the conversation (DeLoach & Greenlaw, 2007). When the instructor does not frequently post, the discussion follows its own path and unexpected directions and themes emerge. A free flowing discussion provides insight into the class and allows students a sense of power and freedom. Seed questions and forum topics can be chosen in response to feedback such as essay quizzes in ways that supplement or compliment other course elements and increase students' intrinsic motivation (Shroff, Vogel & Coombes, 2008).

In the example course 'podcasts' were used to replace in-class exercises and supplemental lectures. Various websites (i.e. BBC, Business Week, and NPR) regularly post business related podcasts. They vary in length from a few minutes to a half hour or more, and cover a wide range of topics, many of which are course related. The

course instructor frequently posts links to specific podcasts, sets up podcast related discussion boards. There are also essay podcast quizzes. The podcast related activities correspond to the objectives of formulating personal stances and being able to apply course material to real life situations.

The individual project is at the level of synthesis and evaluation, and addresses the real life application and communication goals. Although the project is not explained in detail in this paper, it involves the entire class watching the same movie and each student finding how some part of the course material is revealed in the story and situations. Online discussions of the movie and a written paper are required. The project, essay quizzes (content and podcast) and discussion boards generally address the communication objective.

Table 3

Course Element Coverage of Learning Objectives

Course Element	Basic Theories/ Facts	Personal Stances	Real Life Applications	Communication
Chapter Quizzes	High	Low	Low	Low
Essay Quizzes	Medium	High	High	Medium
Discussion Board	Medium	High	Medium	High
Podcast Quizzes	Medium	High	High	Medium
Individual Project	Low	Medium	High	High

CONCLUSIONS

In this paper we propose a simple approach to designing an online course. The approach allows for various levels of learning. It also addresses the coverage and assessment of learning outcomes, which are essential for high quality programs. The key ideas are to use a variety of learning activities and assessment methods, selected to correspond to different levels of learning and course learning objectives. A key component of the approach is to develop tables such as those presented to help in the course development process. These tables can periodically be reassessed as greater use of advanced technologies such as the intelligent discussion board (IDB) (Wijekumar & Spielvogel, 2006) and social media technologies (Fisher & Baird, 2005) are available. The tables are also useful in documenting both curriculum/course development processes and assessment practices for accreditation purposes.

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THE ATTITUDES OF BLACK MALES TOWARDS BECOMING EDUCATORS AND CHILD CARE CAREGIVERS IN EARLY CHILDHOOD SETTINGS

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ABSTRACT

This work-in-progress will triangulate research-based literature with participant-observation techniques and interviews in order to capture the attitudes of Black males towards becoming teachers and caregivers in early childhood settings. Understanding the mindsets or dispositions of these men towards entering the early childhood profession could help to uncover some of the reasons why Black men in the early childhood field constitute a statistically insignificant number, consistent with the 1.4% representation of Black men in the teaching profession at the national level.

BACKGROUND

A year ago, I was approached by a director seeking advisement and encouragement for Matthew, a Black male high school graduate, who has been working with young children for more than five years in a childcare center. That director was concerned, because Matthew had not expressed any interest in obtaining his credentials as a certified early childhood educator. I started to visit Matthew regularly at the center, and I provided him some counseling on-site. At the beginning of December last year, Matthew submitted an application for admission to the teacher education department in Borough Of Manhattan Community College. The director and teachers at the childcare center applauded Matthew's first step towards getting his credentials in child care, but he did not follow through despite he was promised free tuition and stipends if he chose early childhood as a field of study.

Another man who shun away from the early childhood field is Michelet, a six-foot tall and muscular Black man, who has worked in a day care center for more than three years. In spring 2007, he came to my office on two separate occasions to discuss his decision about quitting his job as well as his studies in early childhood education. Michelet decided to become a firefighter, because he would make a higher salary than working as an early childhood educator. It was not a decision based solely on an anticipated higher income. Michelet also felt that some parents at his workplace were intimidated by his stature and began to question his ability to work with young children.

Next, there is Howard, a licensed real estates agent, who enrolled in the early childhood education program last year, because he wanted to work with young children. Howard eagerly accepted a position as an assistant teacher in a childcare center, while being enrolled in the early childhood education program at Borough Manhattan Community College. Howard is a Black man who is relatively older than Matthew and Michelet.

In general, male teachers and caregivers in the early childhood field are faced with fears, doubts, challenges and opportunities as they are finding out whether or not working with young children is for them. While some men seriously embrace the early childhood field as a career path, a lot more men perceive this field as a female domain. The fact remains that there is a dearth of men in the early childhood profession (Torelli, 2007; McDonald, 2003; King, 1998). And, Black men teachers and caregivers in the early childhood profession are visibly absent. Perhaps, an examination of the attitudes of Black men towards becoming teachers and caregivers in the early childhood field might help to uncover some of the reasons why the nationwide representation of Black males in the teaching profession is only 1.4%, and of that figure Black men in the early childhood field constitute an even more statistically insignificant number.

HYPOTHESIS

While some people argue that salary may be the determining factor in attracting men into the childcare profession, others maintain that pride and similar attitudes may be at play. There are no definite answers or any adequate explanations to the underlying questions about the reasons why male teachers and caregivers in general are rare to find in the early childhood profession, and Black men in particular are almost invisible in this field. I am proposing a research study seeking to examine the attitudes of Black men towards becoming early childhood

teachers and caregivers, because I am subscribing to the notion that mindsets or dispositions are governing factors in almost every decision that a person makes.

METHODOLOGY

I will use surveys and interview techniques to collect data from six primary sources, including (a) pre-service, male teachers who are enrolled in B-6 education programs at Borough of Manhattan Community College (BMCC); (b) Black male students who are participating in a mentoring programs at Borough Of Manhattan Community College (BMCC); (c) BMCC education professors who have Black male students in their classes; (d) mentors and counselors who guide and advise Black male students in BMCC general programs; (e) Black male teachers and caregivers in the childcare profession; and (f) members of community groups and organizations that support men in B-6 education.

ANALYSIS

Data will be collected and analyzed in order to uncover patterns and behaviors relating to (1) the attitudes of Black males towards becoming B-6 educators; (2) issues and concerns of pre-service, Black male students in Birth-6 teacher education programs; (3) challenges identified by in-service, Black male teachers and caregivers in Birth-6 settings; (4) institutional resources and community-based support available for men in Birth-6 programs; and (5) recruitment and retention strategies aimed at increasing the pool of men teachers and caregivers in B-6 programs.

LIMITATIONS

People's attitudes towards something often change depending on their personal experiences as well as some external events over which they do not have any control. This study is limited in that sense, because it will not be able to examine all the personal experiences and external events impacting the attitudes of Black men towards choosing early childhood as a career option. In addition, people do not always respond fully and truthfully when they respond to research surveys and interview questions. The study, however, will also examine a series of factors that shape attitudes—as referred to in the analysis section above.

SUMMARY

Black male teachers and caregivers are few and less directly involved in caring for and nurturing young children. This research proposal assumes that income is not the sole factor keeping those men away from the field. It hopes to examine the perceptions of those men about working in a field that is traditionally being viewed a domain for women. The intellectual merit of this study is that it will help to inform and guide teacher education programs, social services agencies, businesses, public policy and the wider community about the dearth of Black male teachers and caregivers in the early childhood profession. It will also help to explore ways to gage the interest of those men in the field.

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USING MULTIMEDIA TO CONVEY PROCEDURAL KNOWLEDGE: STUDENT AND FACULTY PERCEPTIONS

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ABSTRACT

This paper reviews the use of multimedia, specifically streaming video, as a teaching and learning vehicle for procedural knowledge. While prior, experimental research in this area has illustrated how various technology attributes can be employed to positively affect learning outcomes, we seek to provide the observations of both students and instructors when a multimedia environment is used to supplement or replace the teaching of procedural knowledge in the classroom. We found that creating tutorials using streaming video provided benefits to students in the form of greater satisfaction with the learning process, a greater understanding of the material, as well as a reduction in the amount of effort required to complete a homework assignment. Furthermore, from an instructor perspective, we experienced a marked reduction in visits from students who required additional exposure to previously covered material, a decrease in prep time during subsequent semesters, and seamless portability to online learning contexts.

INTRODUCTION

With the increased accessibility to multimedia capabilities, many designers and developers are under the impression that adding multimedia elements to instructional material will make it more effective. Scholars, however, believe that the effects of technology will vary depending on individual differences and task characteristics (Alavi and Leidner, 2001; Goodhue, Klein, and March, 2000; Large, 1996; Steuer, 1992), indicating a need to investigate how delivery technologies can be utilized to maximize the learning experience given the characteristics of both the task and the individual learner. Thus, research investigating the effects of multimedia on learning outcomes has been ongoing.

Multimedia research views technology as the collection of tools used to deliver information to an individual (Piccoli, Ahmad and Ives, 2001). Examples of delivery technologies in this context include text, hypertext, graphics, streaming audio and video, computer animations and simulations, embedded tests, and dynamic content (Piccoli, Ahmad, and Ives, 2001). Prior research has been conducted to examine how various factors of a multimedia environment affect learning outcomes and to offer guidance in the development of effective multimedia systems. Results from this research have shown that interactive multimedia environments (i.e., control over features of the presentation) positively influence user attitudes (e.g., Haseman et al., 2002; Kettanurak et al., 2001) and that information complexity interacts with the multimedia environment to influence learning outcomes (Andres, 2004). Furthermore, research has shown that a more vivid (e.g., sensorially rich, such as animation and narration) and more interactive environment results in an increase in satisfaction and interest and that task complexity interacts with vividness and interactivity to affect performance and perceived mental effort (Nicholson, Nicholson, and Valacich, in press). Mayer and colleagues have also published numerous studies on using multimedia to help students in understanding scientific explanations (e.g., Mayer and Anderson, 1991; Mayer and Anderson, 1992; Mayer, Heiser, and Lonn, 2001; Mayer and Moreno, 1998), which resulted in the development of seven principles of how to effectively use multimedia.

Based on this prior research we are learning a great deal about when it may be most beneficial to add a multimedia element to instructional material as well as what technology attributes to incorporate into a multimedia presentation to positively affect the learner's experience and performance. We believe, however, that in addition to looking at the effects of multimedia on the learner, it is also important to examine the effects of multimedia on the instructor. The objective of this paper is to share the experience of both students and instructors. First, we provide a description of the task and the multimedia dimensions employed. We then provide student and faculty reactions.

THE TASK AND THE MULTIMEDIA ENVIRONMENT

As part of the curriculum in an introduction to management information systems (MIS) course, faculty must teach a specific set of skills using both Excel and Access. This type of knowledge, which can be classified as procedural, is best conveyed through a demonstration (Gagne, 1985; ten Berge and van Hezewijk, 1999) or a richer representation (Park, 1994). Thus, these skills have typically been taught by holding four class sessions throughout the semester in a computer lab where the instructor would walk students through a hands-on tutorial. Students would then be given a homework assignment to complete on their own time to illustrate their proficiency in these skills.

We often felt that this pedagogical approach for imparting these skills was not serving the needs of all students. Some students could barely keep up and seemed to be overwhelmed by the task, while others seemed bored and disinterested because they knew much of the material. Being that we were dealing with students who varied so much in their knowledge of these subjects, we decided the students would best be served if they were given more control over the learning process. We based this conclusion on prior research that suggests that some degree of learner control can lead to greater intrinsic interest in an activity and satisfaction with the learning experience, which ultimately leads to improved academic performance (Kinzie, Sullivan, and Berdel, 1988; Lepper, 1985; Merrill, 1983, 1994; Williams, 1996). Additionally, learner control can avoid overloading the learner's working memory (Rieber, 1994) as they can move through the information at a rate and sequence that is comfortable for them. Learner control also allows for repeatability, and the more information is repeated, the better and longer it is remembered (Alessi and Trollip, 2001).

Our answer to providing learner control, given the aforementioned studies illustrating the benefits of using an interactive and vivid multimedia environment, was to create a tutorial using streaming video to supplant the lab sessions. We used Camtasia Studio to create streaming videos for both the Excel and Access tutorials. The streaming videos used animation and narration to demonstrate each step of the tutorial, which corresponded to a specific skillset/tool. For example, showing students how to use the Solver tool was one of the steps in the Excel tutorial. Each step of the tutorial was listed in a table of contents fashion, allowing students complete control over which steps they viewed and in which order they were viewed. Furthermore, students had the ability to pause, skip, fast forward, and rewind the tutorials. Students were also provided an Excel file with each tutorial which allowed them to practice the various steps of the tutorial. Students were given access to all of the files approximately three weeks prior to the homework due date.

This approach was also integrated into a Business Web Applications (BWA) course where students were required to build an ASP.Net application. In this course, streaming video was used as a supplement to reinforce, and provide context for, coding examples that were given during the in-class lecture. In other words, students were provided streaming video illustrating the process for incorporating the code/concepts into a real-world application using Visual Studio.Net.

STUDENT PERCEPTIONS

At the end of the semester, students were given a qualitative questionnaire (see Appendix A) to fill out regarding their experience with the multimedia environment. Essentially, this questionnaire asked if this type of learning environment, when compared to a traditional, face-to-face, lab-type setting, increased their satisfaction, increased their understanding and interest in the material, and whether it decreased the amount of effort it took to complete the homework assignment. A total of 28 questionnaires were returned. Table 1 shows the number of responses for each category.

Overall, students reported that they were more satisfied with this type of learning environment and that it helped them understand the material better than a traditional, face-to-face, lab-type setting. Students attributed their increase in satisfaction and understanding to the ability to go through the material at their own pace, to pause, rewind, and fast forward as needed, as well as the ability to skip over material they were already familiar with and focus only on that material which was unfamiliar. It is interesting to note from Table 1 that all of the BWA students reported an increase in understanding. For the most part, those in the MIS course who responded that it did not increase their level of understanding (n=5) stated that they were already familiar with Excel and Access prior to the assignment. We therefore believe that for students having little prior knowledge in a given subject area, the use of a

multimedia environment may meaningfully increase their level of understanding of the material. Below are some of the comments made by students pertaining to their increase in satisfaction and understanding.

TABLE 1. *Summary of Student Responses*

	Total Number of Responses	Increase in Satisfaction	Increase in Interest	Increase in Understanding	Decrease in Effort
MIS	22	22	10	17	17
BWA	6	6	6	6	5
Total	28	28	16	23	22
Percentage		100.00%	57.14%	82.14%	78.57%

"I thought the videos were amazing. It added tremendous value to the lectures. It was the equivalent of having [the professor] over your shoulder for hours. I can't express how helpful they were and how much more I learned."

"I am one of those students that get it in class, but forget when I step out of the classroom and a tool such as this one helps refresh my memory."

"There was no confusion about missed directions..."

"...the multimedia allowed for hands on learning at the users pace."

"It allowed me to revisit sections I was unsure about, so it gave me the opportunity to gain a deeper level of understanding."

"Liked this method so much and I am coordinating my employer to test and purchase the recording equipment so that I can adapt it to my work functions."

A little more than half of the students replied that the multimedia environment increased their interest in the material. None of the respondents actually stated that the material was less interesting delivered in this manner, they essentially stated that, for the most part, their interest was about the same. Furthermore, if we look at only the BWA students, all replied that their level of interest in the material increased. Some of the reasons given for the increased level of interest include not having to sit through material that they were already familiar with and that it was a new and novel approach that they hadn't seen used in the classroom. Below are some of the comments made by students pertaining to their level of interest in the material.

"I feel that if it was taught in lecture format I may find myself bored with it if the professor was going over something I already knew how to do."

"the material itself was interesting but the videos made it more interesting because every session was available for review and quick reference which made learning more engaging and more memory permanent."

When it came to effort, a little more than three-quarters of the students believed that the multimedia environment decreased the level of effort it took to complete the homework assignment. Unfortunately, students seemed to equate effort with the amount of time it took to go through the tutorial and complete the homework assignment rather than whether it made it easier for them to complete the homework assignment subsequent to viewing the multimedia tutorial. Below are some of the comments made by students pertaining to the level of effort that was required to complete the homework assignment.

"It decreased the level of effort for me to complete the homework assignment because I listened to the multimedia delivery and did the practice during that. Then right after I did the homework and if I had any problems I could just go back to the video and play again the instructions."

"...decreased the level of effort it took to complete the homework assignment. I could skip over the videos of what I knew, and I could repeat the videos of what I didn't know to complete the homework assignment."

"If you took the time to learn from the tutorial, then you gained the knowledge to make the assignment easier."

"The multimedia delivery method both increased and decreased the level of effort to complete the assignment. Some of the videos were long; finding the time to watch the video and understand what was being said slightly increased the effort. However, after watching the videos, it was easier to complete the assignment, thus decreasing the effort."

"The media accelerated the time it took to complete the assignments because of the breeze of quick references on unsure material and the ability to skip through areas already mastered."

When asked what features of the multimedia delivery method were most beneficial, the unanimous response was the ability to move through the tutorial at your own pace, pausing, rewinding, and fast forwarding when necessary. Students also liked the step-by-step instructions, which allowed them to skip those steps they were familiar with, and liked the fact that they could watch the videos anywhere and anytime they wished. Another feature pointed out by some students was the ability to have the tutorial as a future reference for other projects and classes. One student even commented that he/she used the tutorial to help him/her complete an Access assignment in another class. Following are some general comments students made about the multimedia environment:

"I think these videos were some of, if not the, best educational tool used in any of my classes"

"I hope more classes adopt this method in the years to come"

"I truly enjoyed this method of learning, and enjoyment played a big part in learning the material"

"I was not intimidated by what was being taught because I had immediate access to the video with the ability to replay until I understood"

Overall, students seemed to react favorably to the multimedia learning environment. They were unanimously more satisfied with this type of delivery method over a traditional, face-to-face, lab-type setting. It appears from their responses that the streaming videos aided in their understanding of the material and, while it may have taken time to watch the videos (although this would have been time spent in class or lab), it seems to have decreased the amount of effort expended to complete the homework assignment. Next, we report on the impact of using streaming video from an instructor perspective.

FACULTY PERCEPTIONS

Several key issues emerge salient for faculty. First, Faculty must invest the necessary time in acquiring and learning the ins and outs of multimedia development tools (e.g., Camtasia) which include the following processes: capturing the graphical user interface, recording audio, editing raw recording, updating older recordings, securing against redistribution, and ultimately publishing the content for consumption. Second, faculty must have the appropriate IT infrastructure (e.g., Blackboard, ANGEL, etc.) and support to effectively organize and stream this content to users. Although other contextual and technical issues may emerge, the aforementioned surface as the primary front-end investment and potential pitfalls to the development, implementation and distribution of multimedia. With that said, in addition to the benefits expressed by students, we have experienced quite remarkable faculty-centered benefits from employing multimedia tools (e.g., streaming video) in the context of technology-centered, process-oriented learning modules. We discuss these advantages next.

1. Meeting faculty obligations with scarce resources

Faculty face a three-horned dilemma in deciding how to distribute their limited resources in meeting research, teaching and service/professional demands. We have experienced, with few exceptions, that students leverage office hours seeking assistance for what we call re-teaching. That is, they attended a lab or hands-on tutorial but for some reason or another were unable to grasp the material. After all, the classroom climate, especially hands-on labs, tutorials, etc., can move quite quickly and students may have a certain level of angst in slowing down the class or calling attention their way by asking for clarification or help. Regardless of the affect, the net effect is time spent re-teaching - thereby cutting into valuable resources (your time or your research assistant's time to meet other obligations).

We found that using streaming video to either supplant or support face-to-face, hands-on labs led to remarkable resources savings. Specifically, the number of students emailing or stopping by to receive help outside of class diminished greatly, which allowed us to use this time to meet research and service demands. Furthermore, when students did stop by, instead of spending valuable face-to-face time re-teaching, we were able to use the time to truly mentor them in life and career.

2. Archiving process knowledge for future opportunities

While the process of creating the streaming videos is front-loaded, the time and effort it takes is well worth it. For as long as the curriculum remains the same, these videos can be used as a tool to impart knowledge in future semesters. Furthermore, with the prevalence of online and distance education, these videos can easily become a component of an online course. Moreover, without the luxury of graduate assistants to fill in for a lecture (e.g., during travel, onsite data collection, conference presentation, emergencies, etc.) we have found streaming video to be a beneficial and highly valued substitute.

CONCLUSION

In the education equation, much focus is placed on the learner. Equally important, however, are the salient issues and benefits from a faculty perspective. Hence, while this paper provides only a glimpse into the reactions of students and faculty, we felt it was valuable to share our experience with using streaming video as a means to supplement or replace the transfer of procedural knowledge so others could see the ultimate benefit of implementing this type of technology in the classroom.

We found that creating tutorials using streaming video provided benefits to students in the form of greater satisfaction with the learning process, a greater understanding of the material, as well as a reduction in the amount of effort required to complete a homework assignment. Furthermore, from an instructor perspective, we experienced a marked reduction in visits from students who required additional exposure to previously covered material, freeing up resources that could instead be used for pursuing scholarly or service-oriented endeavors. Moreover, we experienced a decrease in prep time during subsequent semesters and seamless portability to online learning contexts.

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APPENDIX A

(Note that the wording in the first paragraph of the questionnaire given to the BWA students varied slightly to reflect the subject area of the tutorials)

STUDENT QUESTIONNAIRE

We would like to receive your feedback about having the Access and Excel tutorials delivered in a multimedia format rather than delivered by an instructor via a traditional, face-to-face, lab-type setting. Thus, we would appreciate it if you would answer the questions below about your experience with this type of delivery method compared to prior courses (e.g., Computing Environments) in which you were taught a software/productivity tool in a traditional, face-to-face, lab-type setting by an instructor. Once completed, please return via email to xxxxxxxxx.

Compared to a traditional, face-to-face, lab-type setting:

- 1) Were you more or less satisfied with the multimedia delivery method? Why?
- 2) Did the multimedia delivery method affect your level of interest in the material (i.e., make it more or less interesting to you)? Why?
- 3) Did the multimedia delivery method affect your level of understanding of the material (i.e., did it help you to understand the material better)? Why?
- 4) Did the multimedia delivery method increase or decrease the level of effort it took to complete the homework assignment? Why?
- 5) What features of the multimedia delivery method do you feel are most beneficial?
- 6) Any general comments you may have:

CELL PHONE USE AND EGO STRENGTH AMONG COLLEGE STUDENTS: A PRELIMINARY STUDY

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ABSTRACT

As the number of cellular telephone users have increased exponentially around the world, individuals can and do remain in contact by texting or conversation with one another. The present study investigates the link between ego strength and the number of cellular phone minutes used for two consecutive months. The P.I.E.S. scale utilized Erikson's model of ego development through an individual's life span. This study found upper class University students achieving ego stages on target with their ego development, but the research did not support relationship to monthly cell phone usage..

INTRODUCTION

Before cell phone technology became commonplace landline telephone conversations were more in concentrated areas of homes or, if in public, were restricted to phone booths or telephone areas (Bergvik, 2004). Now the hotel, restaurant, recreation area and entertainment facilities have very land lines for public use.

Cellular telephone users have evolved into a large population segment. For pre-adolescents through young adults cell phone usage has become a rite of passage. Young and old alike are seen communicating with others through cell phone conversation and text messaging. In the fall of 2007 approximately 93% of college students owned a cellular phone (Brandweek, 2007). The cellular phone allows college students to remain connected with family and friends from whom they may be living apart, and to remain connected to those on their campus. Cell phones are used in the school, at home during meals or study times, while operating a vehicle with or without friends, at the mall, in the lavatory, and at a restaurant. Since the Virginia Tech massacre on April 16, 2007 where 32 individuals were murdered many colleges and universities have developed a rapid response system where cell phones receive warnings.

Erikson describes eight sequential developing ego strengths for every person, which initially emerges in early childhood development, and continues throughout one's life span (Austrian, 2002). Erikson describes ego strength as qualities that "begin to animate man pervasively during successive stages of life" (Erikson, 1965, p.3). Erikson considered the entirety of life and considered the developmental crisis that individual "must be dealt with for healthy development" (Austrian, 2002, p. 45). With the confrontation of each conflict, both inner and outer, an individual "emerges...with increased judgment, sense of self, and inner unity" (Austrian, 2002, p. 45). At the conclusion of each developmental stage a new strength and focus is attained. While the ego strength of "hope" begins in infancy, "will", "purpose", "competency", "fidelity", and "love" are viewed as achieving a resolution as one develops into a young adult. Only "care" and "wisdom" gain resolution in later periods of life.

The Psychological Inventory of Ego Strengths (PIES) developed by Markstrom et al. (1997) targeted to assess Erikson's theory and writings specifying the establishment and emergence of ego development in sequential steps beginning at birth. The P.I.E.S. has been shown to have validity and reliability when administered to college students (Markstrom & Marshal, 2007). Higher scores of ego strength of the P.I.E.S. "were positively correlated with psychosocial indicators of identity achievement, self-esteem, locus of control, empathic concern, perspective-taking, and positive forms of coping" (Markstrom & Marshal, 2007, p. 63). The first five ego strengths are stages with which university students could have completed, or are currently progressing to completion (Erikson & Erikson, 1997). The first stage of infancy focuses on hope versus withdrawal from the maternal or nurturing caregiver. The second stage of early childhood focuses on will versus compulsion. The third stage of play age focuses on purpose versus inhibition within the basic family. The fourth stage of school age focuses on individual competence versus inertia. The fifth stage of adolescence focuses on one's fidelity versus repudiation.

Cell phones have given the consumer the ability to be in contact with others at all times. But being in contact with others has both positive and negatives aspects. Do college students who engage in excessive conversations or text messaging via their cell phones need assistance from friends or family members in making daily decisions? Individuals that may have encounter difficulty making daily decisions may feel uneasy when alone or may not

initiate projects because of lack of self-confidence or self-direction. The purpose of the current study is to examine the cellular telephone use of college students and their relationship to the ego strengths of hope, will, purpose, competence and fidelity. The goals for this study are twofold: to test a theoretical paradigm, and to discern the applicability of the model in an ongoing national issue.

Methods

After receiving Rowan University approval from the Institutional Review Board, the students from general education courses were requested to participate in the research study. Students were requested to complete a questionnaire and to provide two consecutive recent months of their personal cellular phone records. The questionnaire included demographic information and opinion questions regarding use of personal cell phone. The P.I.E.S. was included in the questionnaire. Since participants may have concerns regarding privacy of cell phone records and numbers dialed all identifying information regarding participants' names and personal information were eliminated prior to submitting these records to the researcher.

The analysis of the materials provided by the participants included the P.I.E.S. questionnaire with items ranked on a likert scale from one to five. Each ego strength scale was comprised of eight questions that have been shown to be of the specified ego strength. The sum score of each scale with a minimum of eight and a maximum of 40 was examined for the relationship between participants and the minutes used on the cell phone as well as the person called most frequently. The analysis of the cell phone records of each individual relating to the five ego strengths provided information regarding usage time and ego strength relationship.

Results

The study was comprised of 82 students from a four-year university. Data collected for this study was based on equal numbers of male and female undergraduate students, primarily from third and fourth year enrollees from Rowan University. The university is located in southern New Jersey and close to Philadelphia.

Fifty-eight percent of the students claimed 11 or more cellular phone calls per day with 67 percent of usage being text messaging. Eighty percent admitted to using the cell phone while driving, 73 percent dialing while driving, and 63 percent texting while operating their vehicle. Only 18 percent paid overage charges. When encountering a difficulty 55 percent of the students would personally consider their alternatives, and proceed with a desired course of action while 30 percent would dial a friend or family member.

If a student received a grade or an evaluation on a paper or assignment lower than expected, 63 percent would seek out the instructor regarding the evaluation. If the student encountered a disagreement with another person, 54 percent would approach the person for resolution, compared to 29 percent who would contact a friend. When a student was bored, 55 percent would play on their computer or watch television. While most students spend over 50 percent of their cell phone time interacting with their significant other, the secondary response would be to converse with a parent.

Based on the P.I.E.S. assessment of the 82 individuals in this study, each of the five scales of ego development or strength was related to the other four scales at the .01 level of confidence. This fact suggests the individuals achieved an appropriate level of ego development for their stage in life, and are in the process of negotiating the next stage of "love".

Based on the scale of ego strengths, the subjects seem to have mastered the tasks defining ego development for the first five scales of P.I.E.S. Yet, these five ego strengths have negligible relationships with cell phone minutes using the Pearson Correlation. This perspective suggests that the sixth stage of ego development, love, should be incorporated for future studies. Perhaps the addition of love would have defined a gradient of ego development.

Discussion

According to Neuber and Genthner (1977) individuals high in ego identity or ego strength exhibit better interpersonal as well as intrapersonal compared to those that exhibit lower ego strength. They would appear as more resilient individuals, more targeted in their behavior with less moodiness or withdrawal from their milieu.

Table 1

Hope vs.	Will vs.	Purpose vs.	Competence vs.	Fidelity vs.
Withdrawal	Compulsion	Inhibition	Inertia	Role Repudiation

Telephone Use Minutes Per Month	-.106	.093	.089	-.028	.145
Hope vs. Withdrawal		.680*	.719*	.729*	.695*
Will vs. Compulsion			.728*	.780*	.662*
Competence vs. Inertia				.749*	.684*
Fidelity vs. Role Repudiation					.651*

N=82

* Correlation is significant at the .01 level (2 tailed) using Pearson Correlation

Although the basic analysis demonstrated minimal relationships between minutes of cell phone usage and the five ego strengths, all of the ego strength scales were statistically related to each other at the .01 level of significance. Successful upper class university students may tend to possess ego strength above the collective society as these individuals must possess intelligence, perseverance and determination to progress through their college education.

Addiction may be defined as a practice or habit unlikely to be abated without creating a trauma response. Could the use exceeding two thousand minutes be considered an addiction for an individual? The Diagnostic and Statistical Manual of Mental Disorders-IV describes addiction as a potential symptom for an array of disorders. However, addiction is not considered a specific malady. For the sample group the number of cell phone minutes per month ranged from 37 to 4579 with a mean of 789. As such, each student averaged 26 minutes per day, compared to 153 minutes daily for the top user. At what point would cell phone usage become a maladaptive behavior or an addiction, or a behavioral disease?

Even though the data analyses did not specify or define maladaptive actions there may be several reasons and detriments to the health and behaviors of college students. In March, 2008, a university student at Rowan University collided with a moving car while crossing a street. The student was using the cell phone while walking. The detriment to pedestrians has been studied, and it has been found that pedestrians may have an increased risk of accidents because of their attention being focused in different directions (Nasar, Hecht, Wener, 2008). In the current study 80 percent of the college students indicated that they use their personal cell phone while driving. There is no way of knowing if the student would have been struck by the vehicle if her attention had not been focused on both crossing a busy road and conversing on her phone. There have been studies demonstrating the distraction potential of cell phone use while driving (Redelmeier & Tibshirani, 1997; Strayer, Crouch, & Drews, 2005). Strayer, Drews, and Johnson (2003) has clearly demonstrated that cell phone use while conducting a second activity, such as driving, reduces the ability to perform the activity as well as the activity could or should have been performed. In his research Nelson (2007) reported that 100 percent of 267 university students who owned both an automobile and a cell phone had chatted on their cell phone while driving. Seventy two percent text messaged while behind the wheel.

Cellular technology has many benefits or advantages including calling emergency personnel or family members if help or assistance is deemed urgent. In our society individuals may carry their cell phones with them at all times of the day and night allowing others to keep in contact. Individuals require moments or periods of quiet time, and need moments to reflect and critically process events of the day. How can this be achieved if an individual can always be communicating with another person while using a cell phone or other desired technologies?

According to Jenaro et al. (2006) increased cell phone use is related to experiencing higher anxiety, social dysfunction and increased insomnia. Cell phone use has been connected with the behavior of "staying up late at night engaged in exchanging messages, as well as emotional dependence reflected in the thought that users could not live without their cell phone" (Jenaro et al, 2006, p. 311). Although not directly related to personality, excessive cell phone use may reflect in the students' behaviors. Fields (2008) notes that alpha waves are the keystone of brain waves for sleep (p. 1) Cell phone use may increase an individual's alpha waves thus disrupting sleep patterns. In a study seeking the sleep effects of mobile phone signals, (Hung, 2007) described very low frequency pulse signals impacting on sleep. After the exposure from cell phone talking mode, sleep was delayed when contrasted with the listen only mode. Although cell phone transmissions may affect brainwaves and behavior the equivalent affect may

be obtained from a half a cup of coffee (Fields, 2008). Surroundings and other factors also play a role in postponed sleep.

In the state of New Jersey both talking on a hand held cell phone while driving and using a cell phone to text message while driving are against the law. A high percentage of students admitted to these two driving issues. This blatant disregard for the law may be a reflection of strong ego development, and a belief of their competence to multitask without distraction is achievable.

The foremost limitation to the present study is the results cannot be generalized to the general public. The focus of the study was strictly limited to college students at a four-year university. Ego strength and cell phone use may be correlated in other sub groups of the population such as high school students.

Future studies need to address further the implications of thought processes of individuals when they are constantly able to communicate with others via their cell phone. Could this lower the critical thinking processes as the individual does not need to introspectively reflect about events and personal actions taken. Future studies may also need to consider the personality associations for other groups such as adolescents and even pre-teens who are in constant use of their personal communication devices.

Another perspective might suggest that the college students' current level of ego development supports considerable confidence in their approach to their environment. They have elected good choices, felt comfortable with themselves, and believe in a level of personal competence based on past success. As a group they believe they make "good" choices, knowing past choices, based on their successful performance of the past supports, can continue such activities as drive and text message. Cell phones and other technological devices play a role in our lives and, thus, in the society as a whole. The implications of their use affect not only the user, but also others when their cellular phone use is in a public area or their inattention causes crashes or other types of accidents.

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A SERVICE LEARNING MODEL: APPLICATION OF A STRATEGIC MARKETING COURSE TO THE EXPLORATION OF COMMUNITY INITIATIVES

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ABSTRACT

Blending civic engagement with academia is one of the challenges facing higher education during the 21st century. This paper illustrates how the Strategic Marketing course at Richard Stockton College is used as a platform to explore, craft, and implement projects for a multitude of service learning partners including United Way, the Boys & Girls Club, Family Services Association, the School Peacemaker, Absecon Lighthouse, and Community Quest. This paper also explores the plethora of marketing tasks (e.g., web site design, brochure development, flash presentations, etc.) undertaken by students over a four-year period as well as a framework for ensuring a positive service learning experience for all parties. A reflection on the design, evolution, and application of the Strategic Marketing course is undertaken, as well as the pedagogical trials and tribulations associated with teaching the class.

INTRODUCTION

Blending civic engagement with academia is one of the challenges facing higher education during the 21st century. Colleges and universities are under pressure to revisit their historic commitment to service (Hinck & Brandell, 2000). Indeed, developing partnerships between the campus and external organizations is at the heart of renewing community engagement (W.K. Kellogg Foundation, 1999), and advancing civic responsibility (Gronski & Pigg, 2000). The Richard Stockton College of New Jersey (hereafter referred to as "Stockton") has embraced this initiative; in fact, service learning has been incorporated into the curriculum for over a decade.

The primary purpose of this paper is to illustrate how Strategic Marketing, the capstone course for business students with a concentration in marketing at Stockton, has been designed to weave a service learning component into the curriculum since the Fall 2004 semester. Real-world problems and applications are taught in a real-world context; specifically, the course is used as a platform to explore, craft, and implement projects for a multitude of service learning partners including United Way of Atlantic County, the Boys & Girls Club of Atlantic City, Family Services Association, the School Peacemaker (an anti-bullying organization), Absecon Lighthouse, and Community Quest (a housing and employment resource for low income and physically and mentally challenged members of the community).

Student teams apply their marketing, business, and technology skills to conceptualizing, researching, refining, and ultimately launching projects for the non-profit agencies. Kolb (2000) noted that advanced-level marketing courses "...can make an even greater contribution to the marketing efforts of a non-profit organization. Students at this level have a greater breadth and depth of marketing knowledge and skills...(from other course projects, internships, etc.) to draw on for reflection" (p. 65).

A brainstorming session and needs assessment is undertaken for each service learning partner at the beginning of the semester and tasks are defined accordingly. Occasionally, projects are carried forward (e.g., website redesign and management) as deemed appropriate. Student teams generate a comprehensive final product and deliver written and oral reports at the end of the semester.

The process is mutually beneficial. The teams lend their talent to the service learning partners, completing a quality project for their portfolio in the process. And the non-profit organizations are able to reap the benefits of much-needed resources in the areas of human talent and time, yielding important finished work (e.g., video brochures, annual reports, etc.) that may otherwise not have come to fruition. Another significant outcome is that students experience firsthand the resource shortage and lack of formal marketing training at most non-profits. This further reinforces the importance of filling such a void through a service learning component in the course curriculum. And a surprising observation has been the degree of empathy and bonding developed by the students for their respective service learning partners during the course of the semester. Many have opted to volunteer outside the realm of the course, and, in some cases, continue to engage in such work once the semester has ended.

Initially, a brief history of the foundations of service learning is presented. Then, a definition of the construct and its application in various disciplines and courses is reviewed. It has been noted that service learning is particularly relevant to marketing courses given the discipline's interest in social causes (Klink & Athaide, 2004). Finally, a reflection on the design, evolution, and application of the Strategic Marketing course is undertaken, as well as the pedagogical trials and tribulations associated with teaching the class.

SERVICE LEARNING

The service learning construct encompasses a teaching method that integrates community service with academic study. Service or experiential learning projects expand teaching and learning beyond traditional classroom activities into a real-world forum (Berson, 1994; Giles & Eyler, 1998; Kinsley, 1994). Service learning is defined as a course-based, credit bearing educational experience in which students participate in an organized service activity that meets identified community needs while simultaneously gaining a broader understanding of course content within a given discipline and an enhanced sense of civic responsibility (Bringle & Hatcher, 1995).

Fertman (1994) proposed that the historical roots of service learning may be traced to the philosophy of John Dewey. The seminal work of Dewey (1967) addressed the challenges associated with providing quality education in a democratic society. In drawing a connection between professional and public lives, he argued that education for a democratic way of life was essential for advancing society. Dewey's (1967) theories focused on experiential and citizenship education relative to community service and volunteerism.

Almost three decades later, The Wingspread Report (Wingspread Group on Higher Education, 1993) noted that a gap continued to exist between societal needs and the offerings of higher education institutions. The Wingspread Report recommended that colleges and universities collectively endorse three basic objectives: taking values seriously, putting student learning first, and creating a nation of learners.

Building on the Wingspread Report (Wingspread Group on Higher Education, 1993), Boyer (1994) reaffirmed the need for the higher education community to serve American society. Boyer encouraged research and discovery of new knowledge in addition to integrating, communicating, and applying knowledge through professional service (Coye, 1997). He called on members of the faculty to adopt a "reflective practitioners" mindset, oscillating between theory and practice to bring the daily problems of real people in real neighborhoods into the university classroom. Service "is not just something students do in their spare time; it connects back to the core curriculum and the search for shared values" (Boyer, 1990, p. 26). The growth of service-learning on college campuses during the 1990s is indicative of a renewed emphasis on campus-community partnerships (Bringle & Hatcher, 2004).

The notion of civic responsibility is intertwined with a service learning perspective. Civic engagement initiatives have awakened renewed interest in promoting institutional citizenship, building new campus-community programs, and promoting a broad sense of civic responsibility in higher education. (Bringle & Hatcher, 2002).

A literature review undertaken by Hervani and Helms (2004) indicated that service learning has been applied in a wide variety of disciplines and courses including writing and composition, finance, engineering, psychology, science and mathematics, accounting, nursing, Spanish, political science, and liberal arts. Service learning projects have also been developed for economics (Hervani & Helms, 2004), management (Angelidis et al., 2004; Madsen & Turnbull, 2006); marketing (Easterling & Rudell, 1997; Petkus, 2000; Klink & Athaide, 2004), personal selling (Hagenbuch, 2006), and advertising (Lopez & Lee, 2005) courses.

Easterling and Rudell (1997) provided the first examination of service learning in a marketing context. The authors developed an extensive background and justification for integrating service learning into the marketing curriculum as well as the benefits that accrue to all parties. A specific program is suggested for a marketing internship. Petkus (2000) extended the work of Easterling and Rudell (1997) into other facets of marketing including principles of marketing, marketing/management strategy, marketing research, personal selling/sales management, integrated marketing communications, and consumer behavior. It is noteworthy to mention that Petkus (2000) provided a general framework for the design and implementation of service-learning courses in marketing. The purpose of this paper is to advance a specific pedagogical model for the Strategic Marketing course expanding beyond general applications and recommendations.

THE STRATEGIC MARKETING COURSE

Overview

Strategic Marketing is a requirement for Stockton business students earning a Bachelor's of Science degree with a concentration in marketing. The capstone course is typically completed during senior year and the prerequisites for the four-credit course are Marketing Principles and three other marketing courses. Strategic Marketing is designated as a writing-across-the-curriculum course.

Historically, standard requirements for the marketing seminar were case analysis, a simulation game, and reading and integration of the *Wall Street Journal* into class discussions. The instructor returned to teaching the course in Fall 2004 (following a 5-year hiatus) and felt compelled to integrate a service learning component into the curriculum for several reasons. First, volunteerism is consistent with the mindset, value system, and motivation of the Millennials or Generation Y segment (born in or after 1992), representing about 80 million or roughly 30% of the American population (Gerdes, 2006). Upon graduation, they gravitate towards companies with corporate cultures that stress social responsibility, diversity and environment (Gerdes, 2006). Second, the instructor sought to establish a bridge between the college and non-profit community so students could gain valuable experience in the field while simultaneously gaining an appreciation for civic engagement and harvesting networking opportunities. And finally, the instructor wanted to build a portfolio component into the course.

Course Objectives

The primary objective of the course is to present students with the tools necessary to make competent decisions in the business world as marketing professionals. Students apply the skill set acquired through a culmination of prior business coursework, work experience, internships, etc. as well as the fundamental theories and techniques learned in the capstone course to a unique task for a service learning agency. The civic engagement forum piques student interest and the textbook and case analysis components are crystallized through application, making the course more digestible and manageable for students. Consequently, the classroom experience becomes more relevant, interesting, and understandable.

Secondary objectives include the opportunity to gain practice in teamwork, and develop written and oral communication skills.

In order to earn academic credit, students are obligated to complete a number of forms for the service learning office at the college. Minimally, they invest about 30 hours per semester in their projects.

Service Learning Projects

Service learning partners have included United Way of Atlantic County, the Boys & Girls Club of Atlantic City, Family Services Association, the School Peacemaker (an anti-bullying organization), the Absecon Lighthouse (a historic landmark and New Jersey's tallest lighthouse), and Community Quest (a housing and employment resource for low income and physically and mentally challenged members of the community).

The projects undertaken by student teams have been varied and are often dictated by the needs of the respective service learning agencies. Such needs are influenced by national (vs. regional or local) affiliation, size and structure of organization, age of organization, etc. For example, United Way is well-entrenched and offers more resources to students than the School Peacemaker, run by one individual.

Some of the tasks completed in the course that could be replicated in other service learning contexts include:

- Annual reports
- Brochures (revamp existing or create from scratch)
- DVD brochures
- DVD videos (e.g., crafted for Absecon Lighthouse to document history and raise funds)
- Flash presentations (developed for separate programs and posted on the website for Community Quest)
- Fundraisers (e.g., a "pies for peace" fundraiser held at the college for the School Peacemaker)
- Fundraising programs
- Grants research
- Marketing plans

MySpace page (created for the Boys & Girls Club and Family Services Association to target a younger demographic)
Preliminary marketing needs assessment (applicable to very young organizations)
Program development (e.g., Champions of Youth for the Boys & Girls Club)
Public relations programs (primary role is to generate awareness and publicity for service learning partner)
Research reports (a compilation of numerous demographic, housing, etc. reports for United Way into one “needs analysis” document)
Transition due to a name change (Disabilities Resource Center to Community Quest)
Volunteer solicitation and training programs
Website design and management

Project Management

Each team elects a project manager, identifies broad goals for the semester (as well as each week), and delivers a written and oral report to the class every other week. The latter is particularly important because the instructor wants the entire class to be informed and wedded to the concept of service learning. Moreover, there is usually more than one team working with any given organization and the process facilitates reflection throughout the semester (rather than just at the end). An added benefit is the realization that the service learning tasks undergo various degrees of transformation as the semester progresses, occasionally creating healthy frustration for the students (and mirroring challenges they will inevitably face once they enter the business world).

The reports are to be e-mailed to the instructor as well as the contact person(s) at the respective service learning organization. Further, students are directed to Cc: the instructor on all correspondence to service learning agencies.

The instructor has generally found that the quality of the projects is directly correlated to the degree of supervision provided (by the instructor and the service learning contact). Ongoing communication among all parties is essential to delivery of a superior product. It's also a means for monitoring whether or not teams are staying on task and managing their time efficiently and effectively.

Each team is required to spend one class period every other week on site at the respective service learning organization. They submit an oral and written report at the end of the semester that includes project description, goals, challenges, and recommendations for future tasks. A power point presentation as well as professional attire is required. The service learning partners are present.

Faculty Role

The instructor serves as a liaison to the student teams and service learning agencies. Her expertise is especially vital at the beginning of the semester in defining and establishing potential projects. Thereafter, the instructor assumes the role of consultant to the Strategic Marketing teams. Guidance and enlightenment is provided, however, decisions are not made for the teams. Students are encouraged to assimilate the information from meetings with the instructor and service learning partners (and gather additional intelligence, if necessary) into sound group decisions. Occasionally, the instructor contacts a service learning organization on behalf of a student team. This usually occurs when unrealistic demands are placed on the team or they're asked to completely revamp a project mid-semester.

Student Teams

Although the instructor has contemplated forming teams, she has deferred to the students' requests to select their own partners. The ideal team size is three or four students. In general, the student teams in the Strategic Marketing course have worked cooperatively and diligently to complete the service learning projects. However, the instructor has had to intercede periodically when the conflict escalates to the point where communication completely breaks down among the members of a group. The instructor mediates a special meeting with the team to diffuse the situation. It becomes an invaluable learning experience in and of itself for the affected students that will likely occur in a career setting at some point in their lives.

Evaluation and Grading

The service learning portion of a student's grade is 50 percent. Grading criteria include submission of all status reports, quality of the final product(s), and feedback from the non-profit organization. The remainder of a student's grade is comprised of a textbook chapter team presentation (20 percent), team case analysis (20 percent), and participation (10 percent). Attendance is mandatory. General grading criteria include:

- Overall quality and comprehensiveness of all assignments
- Adherence to course timeline and ability to stay on task
- Initiative and ambition demonstrated in the decision-making process
- Communication skills
- Attendance and participation

STUDENT FEEDBACK

The last week of the semester, the student teams reflect on the service-learning aspect of the course. Overall, they have reported positive experiences associated with such tasks. Students conveyed that the projects were both challenging and rewarding, and many have articulated their intention to continue volunteer work in the community. They take pride in their service learning accomplishments, and are eager to share their ideas about potential topics for future Strategic Marketing classes. Students have also communicated the value of building their portfolio in such a competitive job market. Many have used the service-learning project as a platform for securing an interview. The only areas of concern expressed by students about the course have centered on lack of communication and/or consistent direction from the service learning agency, group dynamics, group diversity, and the ability to manage the workload.

Written comments on the instructor's student evaluations have generally indicated that students liked the course format; valued the time spent on site at the service-learning organization; felt the project was demanding at times but valuable; thought their knowledge was broadened in the subject area through application; and, believed the team project was essential for preparing them for a job in the field.

TRIALS AND TRIBULATIONS

In general, the service learning course component has resulted in mutually beneficial outcomes for all parties. The non-profits have welcomed the additional resources, and students have often taken substantial initiative in terms of assuming greater workloads, contacting local media outlets to generate awareness and publicity (more than one article has been published in the local newspaper), and learning new desktop publishing software (e.g., Microsoft publisher, pagemaker), if necessary.

Gradually, the instructor has increased standards for accountability, recognizing the importance of bi-weekly student reports and gathering ongoing feedback from the service learning agencies. The instructor recently added an evaluation form to be completed by representatives at each non-profit for the teams assigned to their organizations.

On a final note, the instructor has only worked with one non-profit who did not support the service learning effort. They did not provide direction, lacked communication with the student teams, and were often not available for prescheduled appointments. The level of frustration experienced by the students was unnecessary and tarnished the service learning experience. Consequently, the instructor ceased working with the agency. Such problems have occurred periodically with the other non-profits but they were always rectified in a timely fashion.

BENEFITS

The benefits that accrue to the students include establishing an alliance with a non-profit and, in the process, gaining a greater appreciation for that sector; the development of critical thinking and organizational skills; the ability to work collaboratively and creatively; and, the capacity for managing a service-learning project from conceptualization through completion. They also have a finished product for their portfolio.

The primary benefits realized by the service-learning partners are the ability to gain ideas and assistance on various projects. In addition to the students' marketing savvy, the agencies place a high premium on their

technology skills. The findings and recommendations of the student teams are used by the agencies for planning purposes, to establish new initiatives, to project a more contemporary image (in terms of outdated brochures, videos, websites), etc.

CONCLUSION

The pedagogical model used to deliver the Strategic Marketing course within a service-learning context has proven mutually beneficial. Students learn about the marketing management process through direct experience, and gain a greater appreciation for civic engagement. They also have the opportunity to collaborate with an outside agency as well as other team members, learn about the challenges associated with undertaking a service-learning task, and generate a quality product for their portfolio. Members of the non-profit community are able to complete projects that, otherwise, may not have come to fruition due to lack of resources.

It is expected that the service-learning course component will continue to evolve (and improve) over time. The most valuable lesson gained by the instructor is that teaching Strategic Marketing in a meaningful context is essential to the educational process.

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A STRATEGY TO ADDRESS CONTENT LITERACY: A CONCEPTUAL PAPER

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ABSTRACT

Content literacy uses reading and writing as tools in learning about a specific discipline (McKenna & Robinson, 1990). In this case, I will conduct research on two courses: Introduction to Business (BUS104) and Business Organization and Management (BUS200). These courses are offered as part of the curriculum requirements for the Associate in Arts (A.A.) in Business Administration and the Associate in Applied Science (A.A.S.) in Business Management at a community college, which is part of an urban public university in the United States. The purpose of this paper is to review the literature on content literacy and the use of technology to improve students' performance at the community college level (McKenna & Robinson, 2006).

INTRODUCTION

To conduct this study I will gather research data from 100 students enrolled in Business Organization and Management (BUS 200) and 100 students enrolled in Introduction to Business (BUS 104). Today, the reality is that when professors ask students to conduct a final research project, students are often lost as to what topic they should research and what methodology they should employ for their projects. It seems that professors most often advise students to do their homework and at the end of the semester present a written paper and an oral presentation about the subject that they have investigated.

As an international student with a respectable background in my field, I was eager and somewhat awed when I enrolled in my first class in an American university. I felt lost in the class of over 100 students, and I wondered if my fellow students, who were native English speakers, felt the same dismay. To my surprise, my fellow students shared my negative feelings about the large class size and felt equally lost with the content of the course. At that moment, I thought that someday as a professor I would write about this experience and offer my recommendations to the American higher education system regarding what I perceived as their mistake in sacrificing the quality of undergraduate education for the importance of doctoral research. Today as a professor, I continue to wonder why universities are thinking about research at the doctoral level, when the undergraduate students are not able to understand what they are reading or able to express in writing what they are thinking. Is there perhaps a competitive advantage for universities to continue this gap in undergraduate and graduate education? Do the higher education institutions in the United States want to address this serious problem in every class and not only in reading and writing courses? As an educator, my final questions are whether we are going to confront this reality, or are we to continue in our deception when the students are the ones suffering from a lack of literacy skills?

Today, ten years after my memorable experience in my first course at an American university, I am sharing with you a strategy to address content literacy using a research guide and monitoring students' week to week activities in research projects. The study will be conducted with two groups of first year undergraduate college students.

This paper is organized as follows. The first part is the literature review. The second part is the research questions. The next part is the purpose of this study. The fourth part is the target population and sample. The next part is the methodology. Finally, contributions and references are presented.

LITERATURE REVIEW

In the United States almost 50% of the student population enrolled in higher education institutions attend community colleges. Approximately 480,000 associate degrees are granted annually, and 35% of these graduates continue their education at four-year higher education institutions (The Community College, 2006).

As educators and facilitators of the teaching-learning process, we need to know our fields of knowledge and how content literacy can benefit our students. For this reason, we need to conduct more research which addresses learning issues and helps us to identify opportunities for improving the pedagogical process (Bain, 2004; Duderstadt, Atkins & Houweling, 2002; Creswell, 1994).

Content Literacy

Content literacy uses reading and writing as tools in learning about a discipline. Specific pedagogical methodologies can help facilitators of learning get students involved in content literacy (McKenna & Robinson, 1990; McKenna & Robinson, 2006). In today's educational reality, as pedagogues we need to confront old and new paradigms of content literacy. The old paradigm is that the students arrived at our classes with previous learning experiences formed by traditional lectures where the main resources were transparencies, journals, and books. In the new paradigm, students' learning experiences are formed through the new tools of content literacy, which include lectures that combine active methodologies such as reading materials from textbooks or magazines, reviewing theoretical concepts, summarizing concepts in journals and generating questions, and research using the Internet.

After the facilitator explains the concepts, the students engage in a peer (team) discussions to review the theoretical explanations versus their own understandings of the concepts (Bean, 2001). Also, the technological tools are more complex today and include e-mails, word processors, presentation software, and Web browsers, among others resources (Duderstadt, Atkins & Houweling, 2002).

Strategies for Content Literacy

Strategic reading and writing require the skills of building, reviewing, and analyzing material before reading and writing. In this step, students identify the method that they will follow for the reading and writing; during the reading and writing, students ask questions related to the reading and writing processes; finally, after students read and write, they link the reading and writing to the knowledge that they have acquired from the class, which in this case are two courses BUS104 and BUS200 (What is Strategic Reading?, 2006). During this learning process, journals are a valuable tool for the students. Student journals are special notebooks that accompany students throughout the semester, and in which they develop their homework from magazines, journals, or other forms of electronic or traditional media.

There are several approaches to content literacy, but the most popular in the field of education is addressed by the following questions. First, what does the student know? Second, what does the student want to know? Third, what is the student learning? Finally, what does the student want to learn? (Boxie & Maring, 2002; What is Strategic Reading?, 2006).

When, Where and How to Write Research Projects

Research projects will be written during the semester using a guide that offers the students a practical orientation about what the student wants to do and to learn. Also, the students will have the opportunity to share with their classmates through team activities where they can exchange their main findings and concerns about their specific tasks through listening and discussion. Finally, at week twelve of the semester the students will have the opportunity to write the first draft of their research. At this time, the facilitator will give feedback about the drafts, and classmates will also have the opportunity to offer feedback using the Grading Rubric for the Research Project Paper. After the students make adjustments to their papers based on the facilitator's and classmates' feedback, the students will be ready to present their final paper on week fourteen. Finally, during weeks sixteen and seventeen, the students will prepare their oral presentations using PowerPoint. Grading by facilitators and classmates will be performed using the Grading Rubric for Power Point Presentations (McKenna & Robinson, 2006).

The Project

In this paper, I am interchangeably using the terms facilitator and educator because in this era we need to have pedagogues who believe in the student and share a contagiously positive attitude and energy with the students. We need to have facilitators who know their content matter, but most importantly we need educators who center the teaching-learning process on the students' interests, in this way the content is linked to the students' main motivations (Bain, 2004; Duderstadt, Atkins & Houweling, 2002). In our everyday activities, we observe that more and more educators are facilitators, who engage students, and most importantly, see the students' potentialities that they can help to develop.

When we think about the use of technology in the learning process, we need to reflect first on the students' level of concentration. Some authors claim that students' focus is held between ten and twenty minutes (Davis, 1993). At this time, educators are conscious of the need to use different methodologies and tools to maintain students' focus and to consider not only the requirements of the subject matter being taught, but also the students' interests.

Today, we are confronting a learning process reality in a more active technological environment, where lectures are a component, but not the sole tool for the learning process. As facilitator-educators, we need to work with the intellectual frameworks, not only in terms of the methodology, but also in utilizing technological tools so that the students can clarify, apply, transfer, construct, and adjust to the use of these new tools during the learning process. When I was reviewing the literature, my questions focused on the use of technology in teaching international business concepts in an introductory business class and on identifying the gap between the passive and active technological environments. This is the question and the model that I am addressing in the next part of this paper.

RESEARCH QUESTIONS

Could content literacy improve students' performance at the community college level?

PURPOSE OF THIS STUDY

The purpose of this paper is to review the literature on content literacy and the use of technology to improve students' performance at the community college level (McKenna & Robinson, 2006). The next step of this conceptual paper is to conduct an empirical research project to test the following hypothesis: There is a positive relationship between addressing content literacy and technology using a research guide and monitoring week to week activities in the classroom and students' performance at the community college level.

TARGET POPULATION AND SAMPLE

The target population for this research is students enrolled in Introduction to Business (BUS 104) and Business Organization and Management (BUS 200) courses offered as a part of the curriculum requirements for the Associate in Arts (A.A.) in Business Administration and the Associate in Applied Science (A.A.S.) in Business Management at a community college, which is part of an urban public university in the United States. The courses that were selected are taught by the researcher of this paper, and the pilot study will be conducted during the spring 2009 semester.

After I reviewed the literature, I developed the questions for the survey (Kerlinger, 1986). The constructs for this study are content literacy and student performance.

METHODOLOGY

The pilot study will begin at the end of the spring 2009 semester. I will administer a questionnaire to 25 students enrolled in BUS104 and 50 students enrolled in BUS200. The research will continue until I have a sample of 100 students. The statistical techniques that I will use are factor analysis and multiple regression analysis. For multiple regression analysis the sample size of 100 will have a R² value at a significance level (α) of 0.05. This is the recommended sample size for this type of research because it is fast and economical (Hair, Anderson, Tatham & Black, 1998; Nichols & Nichols, 2001; Zikmund, 2000).

CONTRIBUTIONS

This final empirical paper will present the findings of how to address content literacy using a research guide and monitoring students' week to week activities in an undergraduate business class at a community college.

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READING TO LEARN ON THE INTERNET: CHALLENGES, SOLUTIONS, AND IMPLICATIONS

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ABSTRACT

This study explored the use of Internet texts in a fifth grade language arts/social studies classroom. It investigated the challenges teachers and students encountered when reading on the Internet, solutions for overcoming these obstacles, as well as their perceptions of using the Internet to learn the social studies. A qualitative case study strategy was used in the collection and analysis of the data. Participants were nineteen fifth-grade students and their social studies teacher who had received training in using the Internet in classroom instruction. Data was collected through interviews with the teacher, focus group interviews with the students, classroom observations, and students' artifacts. Data was analyzed using the constant-comparative method. While the samples provided are social studies websites, the information presented is appropriate for intermediate teachers of all content areas who are interested in incorporating Internet texts to expand the realms of reading.

INTRODUCTION

"Ms. Little, I think I am lost... what can I do?" puzzled and frustrated, Andrew, a fifth grade student, was asking for help from their teacher Ms. Little. Andrew is not the only student that asks this kind of questions in classrooms where the Internet is used to explore new knowledge/information, and to prepare for research projects. Actually, access to the Internet is now widely available in schools. Navigating the Internet has become an essential literacy skill for today's middle school students (Eagleton, Guinee, & Langlais, 2003) and other grade levels as well. According to the National Center for Education Statistics (2001, online document), 98 percent of U.S. public schools and 77 percent of classrooms in those schools were connected to the Internet by Fall 2000, and while in 2003 93% of all k-12 classrooms in the U.S. had Internet access (Parsad, Jones, & Greene, 2005). 71 percent of online teens said they relied mostly on Internet sources for the last big project they did for school and 34 percent of online young people ages 12-17 download study aides from the Internet (Lenhart, Rainie, & Lewis, 2001). "Because of technology, our definition of reading has changed to include websites, e-books, e-mail, discussion boards, chat rooms, instant messaging, and listservs" (Schmar-Dobler, 2003, p. 81).

Along with these new resources, however, come new challenges for teachers and students who use Internet texts in their classrooms. These new challenges include lack of time and supervision, massive volumes of text, and confusion caused by the various distracting links on Internet sites (Schmar-Dobler, 2003; VanFossen, 2000). Researchers and educators have proposed solutions such as well-trained teachers, scaffolding students to find and synthesize information on the Internet, and teaching explicitly strategies to read Internet texts (Schmar-Dobler, 2003).

The purpose of this study was to explore the use of Internet texts in a fifth grade language arts/social studies classroom. More specifically, this study set out to investigate the challenges the teacher and students encountered when reading on the Internet, solutions for overcoming these obstacles, as well as their perceptions of using the Internet to learn the social studies. While the samples provided are social studies websites, the findings of this study and their implications were expected to inform and inspire intermediate teachers of all content areas who are interested in incorporating Internet texts to expand the realms of reading. Two main research questions were explored in this study: 1) How does a social studies teacher practice the use of the Internet in the classroom? What difficulties have they encountered? How do they resolve them? 2) What are the perceptions of the teacher and the students towards using the Internet in their social studies classroom?

BRIEF REVIEW OF RELATED LITERATURE

Similar to other subjects, reform efforts regarding social studies have emphasized changing the ways in which social studies have been taught and learned (Rice & Wilson, 1999). The NCSS (National Council for Social Studies)

Curriculum Standards for Social Studies recommended that students be encouraged to process what they learn on several levels simultaneously. From the very beginning, students may be asked to relate new learning to prior knowledge, to think critically about information, or to use information to construct arguments or make informed decisions (Rice & Wilson, 1999). Schools are expected to create a school culture that values collaboration, promotes self-reliance, and prepares students with a general set of critical information-handling skills. They are all challenges for the traditional instructional model, but it can be accomplished through the use of the constructivist model for learning by incorporating the Internet in the instructional process. On the Internet, “sophisticated computer simulations, instant access to experts, online research and publication, cross-cultural communication, virtual field trips, and access to a plethora of resources are present realities and critical inclusions in all future social studies curricula” (Eaton, 1999, 139). The interactive and multimedia nature of the Internet can thus break down the classroom’s physical limitations and expand students’ experiences, develop students’ inquiry and analytical skills, and expand student experiences with visual technologies. The multiple perspectives exposed by the Internet that often lack in traditional textbooks can also help students learn abstract historical concepts. The capacity of the Internet to link classrooms worldwide provides a wealth of opportunity for students to use reading and writing in authentic contexts.

In spite of the potential and actual benefits and the widespread proliferation of Internet users, recent research has indicated that few teachers have attempted to employ it in their classrooms (VanFossen, 2000). Among those who have the Internet access in the classrooms, some worry about the often overwhelming quantity of raw, unfiltered, and even danger-leading information; some are afraid of losing control of the situation while students surf on the Internet; some worry that the Internet leads to declines in social involvement and psychological well-being; and some are concerned that the Internet may lead students to acquire material of “margin interest” (Shiveley & VanFossen, 1999; Scott & O’Sullivan, 2000; Pye & Sullivan, 2000/2001). Some teachers often lack the skills necessary to use the Internet resource effectively. In addition to little training on computer use, they have little knowledge related to integrating the Internet into the classroom specifically (VanFossen, 2000). A lack of time and supervision, and an overall sense of confusion, often become the barriers to use the Internet in the classroom. Other barriers are limited funding, support, and remote rural area (VanFossen, 2000; Pye & Sullivan, 2000/2001). Some solutions have been proposed such as training teachers to grasp the skills and knowledge, providing explicit tasks, using blocking software, and teaching students critical thinking skills (Pye & Sullivan, 2001).

METHODS

Informed by the review of related literature and based on the nature of the research questions, a qualitative research design and a case study strategy were implemented in the collection and analysis of the data in this study. “Qualitative studies are best at contributing to a greater understanding of perceptions, attitudes, and processes.” (Glesne, 1999, p.24)

The participants were nineteen students and their social studies teacher in a fifth grade language arts/social studies classroom in a Southwestern school district in the U.S. Participants were selected purposively due to the fact that the teacher had received extensive training in using the Internet in classroom instruction. She had passed all the technology training courses and tests she took, which earned her class a big screen, a scanner, a printer, and two more computers. Among the nineteen students, there are seven European Americans, two African Americans and nine Mexican Americans. The male and female students were half and half.

Throughout a semester, data were collected through classroom observations with the researcher as a complete observer, semi-structured interviews with the teacher, focus group interviews with the students, and various documents including the participants reading logs/notes and their research reports. The content analysis technique and open coding procedure were employed in the data analysis. Triangulation was thus assured through the large and varied volume of data sources. The participants also checked the findings.

Data analysis was based on naturalistic method as described by Lincoln and Guba (1985). During the analysis, the researcher read and re-read the data and looked for patterns and themes across all data. The procedure the researcher followed was open coding, an unrestricted coding of the data (Strauss, 1987). This inductive process allowed for themes to emerge and for participants’ voices to be heard, thus presenting the perceptions of participants in the most forthright manner (Berg, 2001).

RESULTS AND CONCLUSIONS

The Internet was used everyday in a variety of ways in this class. The Internet provided more updated content knowledge for the teacher and students, more resources on a topic, and more options for diverse students to learn (for example, listening to a historical event online or watching video clips of it while reading the online texts). It also liberated the teacher from writing so much on the chalkboard since she could put pictures, constitutions, and even signed contracts on the big screen and saved them on the computer for later use. The Internet motivated students to learn with its interactive multimedia functions. With the Internet students also practiced their writing in an interactive way and improved their collaborative ability and critical thinking when reading and writing online in groups.

During the process of using the Internet, the teacher and her students also encountered some challenges, and together they solved the problems. The biggest challenge for this group of students was the confusion or loss of meaning based on poor Website navigation. Together, the class came up with these solutions: clicking back till where they recalled what they were supposed to do; making choices before clicking any links; and asking themselves “Why am I searching?” “What do I want to know?” The teacher started with modeling these solutions on the big screen, and then the students practiced them in their research projects. During the practice, the teacher helped remind them of these actions. Gradually it became a habit for them to make decisions before clicking any link and they were aware that they had to keep focused during the searching process.

The second biggest challenge they encountered was the difficulty understanding some Internet texts’ vocabulary, text structure, and/or content. Besides searching for the websites or Internet texts at the appropriate reading level, the teacher considered these moments as the great teachable moments for her to conduct mini-lessons on reading comprehension elements. They also took advantage of other approaches such as working with partners, learning with higher-level students, asking help from parents or the teacher, asking questions on the website, and clicking the explanation links.

The third challenge for them was the inappropriate content on some websites. To solve this problem, the teacher always asked the school to filter them. Actually, they tried to screening every website students accessed. On the other hand, the teacher always taught students to make decisions before clicking any links and let them know that they would be in trouble if they clicked the inappropriate links.

The fourth challenge was the distraction and poor reading comprehension caused by the inserted links. The teacher sometimes guided them to read the passage first and then go back to click the explanations, while sometimes they had to read the linked explanations and go back to skim over the whole passage if the explanations were critical to their comprehension. The teacher taught the students that they always needed to evaluate the text features and make their own decisions on which method to choose.

The teacher and students perceived these challenges of a trial-and-error learning process. When students were in a wrong or unfamiliar websites, they felt comfortable by clicking back, rather than being puzzled. Students worked with partners when the reading was difficult. They read aloud, consulted dictionaries, and helped each other. The teacher instructed students to select and evaluate certain websites when necessary even though websites and information were already filtered in their school district. While they believed www.google.com helped them find good websites, their favorite websites included discoveryschool.com/schrockguide/ (links to subject areas), www.ncss.org/links/home.html (national site, conferences, web links, teacher resources, curriculum standards for SS), www.pbs.org (great links to lesson plans), <http://www.zoomschool.com/> (information about a region's geography, history, politics, and wildlife), and <http://www.50states.com/> (a listing and links to web sites). Textbooks and the Internet were actually complimentary to each other beautifully in this class. They believed that the Internet provided more and updated content knowledge and that leaning became more interesting and effective.

From these findings, we can draw some implications for intermediate teachers of all content areas who are interested in incorporating Internet texts to expand the realms of reading. Obviously, extensive professional training on computer technology is critical to effectively integrating the Internet texts in instruction. Appropriate attitudes are also very important: there is no doubt that both teachers and students will encounter a variety of challenges in the incorporating process, and it is critical to model students a positive learning attitude and solve the challenges together with students. While it is always necessary to scaffold students to solve the problems (guidance and specific tasks), complimenting textbooks with the Internet is most effective. WWW.google.com can always help to find more and good websites in subject areas, but it is better to keep some favorite ones. Lastly, there are still more questions and issues left for researchers to explore in real classrooms such as how to evaluate and analyze the online information online, and how to synthesize the vast volume of information and communicate to others.

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TO STOP SKIMMING THE SURFACE: USING THE INTERNET IN ELEMENTARY SOCIAL STUDIES INSTRUCTION

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ABSTRACT

Teachers of elementary level students face many challenges when they attempt to integrate the internet into their Social Studies instruction. This article examines several thematic areas, including research on the internet and its relationships with cognition and learning; an overview of effective practices in Social Studies education; and the findings from a study in which teachers reported their internet-based instructional activities as part of their instruction on the Holocaust. Suggestions for improving teachers' use of the internet with their young students are provided. Implementing these suggestions may help elementary level teachers of Social Studies to more effectively harness the opportunities of and address the concerns presented by the internet as they seek to include its many resources in their instruction.

INTRODUCTION

The internet is ubiquitous in modern life and education. The question of *whether* to use the internet as an instructional tool is no longer relevant; instead, educators must determine *how* to effectively and responsibly use the internet to help students of all ages meaningfully understand content. In this article, research about the internet and its relationships with cognition, education, and literacy, as well as primary, empirical findings from a recent study examining fifth-grade teachers' instructional decisions related to teaching about the Holocaust, are examined in support of an attempt to describe the nature of relevant issues related to internet-based instruction in elementary level Social Studies. An examination of this research suggests multiple ways to improve the state of internet-based educational experiences in Social Studies. It is hoped that these suggestions might assist elementary educators who wish to harness the incredible opportunities offered by the internet in their classrooms, as well as the teacher educators who train them.

Challenges Presented by the Internet

In a recent article in the *Atlantic* provocatively entitled "Is Google Making Us Stupid?," Nicholas Carr (2008) bemoans the fact that he is "not thinking the way [he] used to think...the deep reading that used to come naturally has become a struggle" (p. 57). Carr refers to convincing studies oriented toward both social life and brain chemistry, all of which support the notion that our pervasive use of the internet has begun to shape the way we think:

The advantages of having immediate access to such an incredibly rich store of information are many, and they've been widely described and duly applauded...But that boon comes at a price...media are not just passive channels of information. They supply the stuff of thought, but they also shape the process of thought. And what the Net seems to be doing is chipping away my capacity for concentration and contemplation (Carr, 2008, p. 57).

Carr's assertion demonstrates a sharp contrast between how the internet may affect cognition and how teachers wish students to understand content. Historical studies must promote a deep and meaningful understanding of eras, events, and cultures. The study of history, for example, demands from students the ability to comprehend multiple, complex perspectives on the same event. Teachers commonly use the internet both to find resources of information and to guide students in their own, independent research. As they engage in these processes, they must contend with the fact that the internet does not encourage deep thinking about a given topic. Rather, in Carr's words, the internet presents information as "a swiftly moving stream of particles" (p. 57) upon which students drift, finding bits of information as needed rather than engaging in meaningful consideration of the nuances of selected topics.

Researchers have proposed that consumers of information on the internet must become proficient in a variety of skills if they are to succeed in meaningfully enhancing their knowledge through internet research. However, the number of skills one needs in order to maximally benefit from the offerings of the Internet is vast, especially for young students who are just beginning to engage in abstract thought. Selber (2004) describes the notion that today's "functional computer literacy" includes a multitude of skills:

...computer literacy is a vexing and ongoing problem...for more than two decades, the discipline has attempted to make some sense – in social, political, historical, professional, pedagogical, and functional terms – of computers not as computational machines but as literacy environments, environments that leave very few activities, individuals, or structures entirely unaffected (Selber, 2004, p. 471).

Selber's (2004) description of computer literacy as "a set of interconnected capacities" (p. 472) ranging from using a word processor to interacting with others in online discussions to searching successfully for desired information demonstrates the challenges facing teachers who seek to use the bounty of information on the internet as a basis for or supplement to their curriculum. Many elementary students come to the classroom with some aspects of "functional computer literacy," from basic skills like typing to complex abilities like interacting in online virtual "worlds" (Valentine's and Holloway's [2002] examination of the overlapping online and real "worlds" that children ages eleven to sixteen frequently inhabit is highly relevant in this area). Many areas of young students' computer literacy, in its most complex sense, must be addressed and monitored alongside the content of a given lesson if teachers are to truly help their students take advantage of the benefits of the internet.

Specific Concerns about Teaching Social Studies to Elementary Students Using the Internet

The challenges inherent in internet use discussed above have profound implications for the use of the internet in teaching social studies content to students. The National Council of Social Studies (2002) provides "essential characteristics for powerful Social Studies" that offer teachers a research-based understanding of the concepts and attitudes that should ideally shape their instruction. Keeping these characteristics in mind while using the internet as a teaching tool allows educators to enhance the goals of Social Studies education and not to work against them by, for example, addressing historical topics in the quick and surface manner often associated with the internet. Some of these "essential characteristics for powerful Social Studies" include ensuring that students:

... learn connected networks of knowledge, skills, beliefs and attitudes that they will find useful both in and outside of school...become aware of the values, complexities, and dilemmas involved in an issue...[recognize] opposing points of view...[and] engage in reflective thinking and decision-making (NCSS, 2002, p. 12-13).

While the "essential characteristics for powerful Social Studies" are too comprehensive to fully examine here, it is important to realize that scholars of historical education strongly emphasize the importance of thinking critically, making connections between concepts, and learning meaningfully for students of all ages. It is also crucial to note that the "essential characteristics for powerful Social Studies" include the recommendation that Social Studies teachers must "make effective use of technology" (NCSS, 2002, p. 12).

Teachers' actual decisions and actions in terms of using the internet to effectively teach Social Studies have mostly been examined at the high school and college levels. Literature on high school and college students' experiences must be referenced in any attempt to divine ways in which elementary level students should be encouraged to use the internet as part of their learning experience. Examples of successful high school level internet-based instruction include the encouragement of critical discussion on teacher-selected primary sources on the Vietnam War (Warren, Memory, & Bolinger, 2004) and the activity of guiding students to create their own Advanced Placement Examination-style Document Based Questions using primary sources they found on the internet (Kotzin, 2001). Scholars who wish to examine teaching with the internet at the elementary level must note that the use of primary sources is necessarily different when employed with elementary students, who are far less likely to be able to comprehend these complex sources on their own. While Newmark (1997) notes that the use of primary sources is vital in Social Studies instruction, and that the internet is by far the most effective way to find primary sources, particularly from the perspective of traditionally underrepresented groups, it is also important to focus on ways to make these primary sources accessible and meaningful for young students.

Unfortunately, the unique concerns that emerge when considering how to use the internet to teach about Social Studies to elementary students are often not addressed in the literature. In her discussion of the pitfalls of using the internet to teach history at the college level, Noonan (1998) states that “the place of the web in higher education is quite different from elementary and secondary schools where the emphasis has been on constructing sites for use in the classroom rather than on how to navigate the web.” (p. 205-206). However, as will be shown in the next section of this article, elementary teachers frequently report that they allow their students to research content on the internet. Young students must at times engage in such navigation in presumably less than effective and meaningful ways, demonstrating the need for further research on elementary students’ internet experiences.

One example of a historical topic that presents particularly difficult problems for elementary teachers, yet is required or encouraged by many states, is the Holocaust. Some literature on this topic emphasizes the opinion that children at the elementary level should not study the Holocaust at all (for example, Totten, 1999), yet multiple states mandate its inclusion in elementary teachers’ Social Studies curricula (United States Holocaust Memorial Museum, 2006; Weeden, 2005). Including the internet in instruction about the Holocaust adds a further dimension of difficulties because the internet presents complex and difficult information from both highly reliable and extremely questionable perspectives. Scholars of Holocaust education recommend that age-appropriate resources must be created and used for young students. This recommendation must be adhered to when selecting internet resources as part of elementary level Holocaust instruction (and Social Studies instruction in a more general sense).

The case of teaching about the Holocaust to young students also highlights another concern related to using the internet as part of the elementary curriculum: the importance of media literacy for students of all ages. National and state standards now emphasize media literacy as necessary in building critical thinking skills in an information oriented society (Fuller, 2002). According to Fuller (2002), students must learn to ask questions of every internet-based source they read, including: Why are some aspects of history covered and some not covered? What conflicts of interest might exist between the author and his or her content? What biases might the author be likely to harbor?

The example of teaching about the Holocaust provides a particularly clear example of the importance of media literacy, or of being able to critically consider the sources behind any given website or traditional, print media. Throughout the internet, reliable and fact-filled websites for learning about the Holocaust as well as racist, false, Holocaust denial oriented websites exist and may emerge as parts of the same search engine query. A report commissioned by the Journal of Blacks in Higher Education (1999) found that “white supremacy is growing online.” The history of the Holocaust becomes astonishingly relevant to today’s world when one realizes that today’s heirs of Hitler’s message continue to spread hateful behavior and beliefs:

It used to be that the preferred method of recruiting new members to the Ku Klux Klan and other white supremacist organizations was to leaflet in white neighborhoods in which blacks were beginning to integrate. But this recruiting method was successful only in reaching a small number of potential recruits. Now the Internet is fueling the growth of hate groups. With minimum costs, the Web permits Klan-type organizations to easily spread their messages of hate to millions of people worldwide. People holding sympathies with white supremacists, but who would not have the courage to be seen openly attending a Ku Klux Klan rally, may now take in white supremacist propaganda in the comfort of their own homes without fear of detection (p.81).

Teachers need to consider how to address the distinct possibility that their students might encounter this kind of hateful website in their quests to find information about legitimate aspects of history. Teachers’ decisions about how to lead their young students to evaluate and critically think about what they read online can have important consequences in these young people’s lives as they seek to make sense of an increasingly internet-oriented world.

Learning from Teachers’ Experiences

Studies about teachers’ experiences with internet-based instructional approaches are often small-scale case studies that examine the classroom experiences of high school or college level students, or, as mentioned above, examinations of specific websites’ use and content. However, because elementary teachers are also expected to include complex historical topics in their instruction, more research that examines the integration of the internet into the elementary Social Studies curriculum must be accomplished.

The author of this article attempted to address the need for increased research on elementary teachers' decision making and actions in relation to their Social Studies instruction with a county-wide study focusing on elementary teachers' decisions to teach about the Holocaust (Dobrick, 2008). This study focused on all fifth-grade teachers in a large county in southeast Florida, one of the eleven states that have passed state mandates to include the Holocaust in K-12 instruction (USHMM, 2006; Weeden, 2005).

In this study (Dobrick, 2008), 128 fifth-grade teachers described through survey responses a range of practices related to their Holocaust instruction, including content, methods, hours spent, and more. The findings of this study demonstrated that a large majority (79%) of teachers did include instruction about the Holocaust in their classroom instruction. Teachers accomplished this in a diverse variety of ways, using methods and content foci that were often approved by (though sometimes frowned upon by) current researchers in the field. This study demonstrated that teachers needed to know both about the relevant content and the effective methods recommended for a given historical topic for them to be able to teach it successfully. For example, it was important for teachers to know to avoid using "simulation games" that force students to take roles of Gestapo members and victims in an attempt to make the Holocaust more "real" to them, and instead to encourage methods like critical discussions and the examination of primary sources. Teachers evinced concern about the developmental appropriateness of teaching about this difficult, violent topic to their elementary students, often preferring (as many scholars also support) to focus on Holocaust related literature rather than on purely historical instruction.

The respondents in this study demonstrated that a variety of applications of the internet informed their teaching about the Holocaust. Their internet-based instructional choices illuminate common challenges that must be addressed in the elementary Social Studies classroom. Teachers who reported that they used the internet to teach about the Holocaust used it both as a source of information for themselves and to inform their students' own, independent research. In the first category of use, teachers reported that they actually used the surveyed county's paper version of their school district-published guide, which had been distributed to all of its schools, more frequently than the same guide provided on the district's website (43.6% of them used the paper guide, while 25.7% of respondents used the guide in its online form). It may be surmised that through sending the paper guide to each teacher, teachers felt more encouraged to use it, or that some teachers simply did not know that it was available online, or that some teachers did not possess the level of computer literacy needed to access the mandated guide.

A further finding must be considered, though, alongside the data on the school district's guide. A full 20.8% of teachers used the comprehensive, authoritative guide published online by the United States Holocaust Memorial Museum (2001). This guide was not part of the mandated instructional materials offered to Florida teachers, yet over a fifth of the teachers who responded that they taught about the Holocaust to their students went above and beyond what was mandated to draw upon an online source that was more comprehensive and fact-based than the district's short, literature-based guide. Furthermore, an overlapping 29.7% of respondents who taught about the Holocaust reported that they used resources other than any of the national, state, or district guides mentioned. Of these teachers who used other resources, it is important to note that an overwhelming 76% characterized the other resources they used as internet-based. They used a variety of online sources, including Google, Wikipedia, United Streaming (a website subscribed to by the surveyed school district that provides short and full-length instructional films for use in the classroom), and leading students in "internet research". Teachers' willingness to actively use the internet and other resources to bring outside, non-mandated sources into their classroom led to one of the most interesting overarching findings of this study: teachers act as "gatekeepers" of history, the final decision-makers in terms of what sources, information, and voices to include in their historical instruction.

This study did not cover the effectiveness of students' or, indeed, of teachers' internet-based research. Detailed, case study-oriented examinations of how teachers employ these resources in their elementary classrooms, including studies on how teachers guide young students to use sites like Google and Wikipedia and studies on how teachers decide upon which online information to use as sources for their lessons, must be accomplished in an attempt to more fully grasp the nature of teachers' integration of online resources into their curricula.

Suggestions for Improving Internet-Based Elementary Social Studies Instruction

Both the study described above on the instructional decisions and actions of fifth-grade teachers (Dobrick, 2008), as well as previously mentioned research on how the internet relates to thinking and instruction, seem to suggest a variety of ways that the educational establishment might be able to positively direct the opportunities inherent in teachers' use of the internet as an instructional tool. The three suggestions that follow represent an

attempt to connect the challenges and experiences of teachers and students with some effective, relevant approaches toward using the internet in elementary social studies instruction.

Promote the Use of Single, Comprehensive Guides

Users of the internet tend to prefer a research approach characterized by quick searches for surface information (the phenomenon described above by Carr). A possible counterbalance to this phenomenon might be to direct teachers toward comprehensive guides or databases that present relevant, meaningful information in one, convenient location. In the example examined in the Florida study (Dobrick, 2008), the United States Holocaust Memorial Museum provides an excellent, comprehensive guide (USHMM, 2001) that includes both relevant content and effective methods for teachers. Many states have also published curriculum guides on the Holocaust that are further aligned to state level standards, but most of these guides have been based upon the successful, national guide produced by the museum. Because of the special concerns described above in relation to the developmental appropriateness of teaching about complex and difficult events like the Holocaust to elementary students, having a set of comprehensive facts and methods in an approved guide can be quite beneficial for teachers. Schrum (2001) encourages the use of history databases that organize the immense number of primary and secondary sources available on the internet so that students can be helped to effectively assess the validity and relevance of online sources of information (p. 329). While teaching about the Holocaust is an obvious example of the concerns that emerge when teaching history to young students, many historical events bring up similar concerns. One does not need much time to think of multiple other historical events that include content that could be considered objectionable, controversial, or psychologically difficult for elementary students. Finding central guides and databases produced by experts in a given field saves teachers time and promotes consistency in their curricula. However, it is important to note that this practice does not add to teachers' or students' ability to sort through and evaluate multiple sources of information.

Create Professional Development Opportunities on Computer Literacy

As mentioned above, computer literacy is comprised of multiple complex and basic skills. Professional development must be encouraged that helps teachers to attain and constantly improve a diverse set of technology skills. Professional development opportunities, ranging from onsite workshops at elementary schools to activities in pre-service teachers' undergraduate courses, must offer interactive, hands-on instruction in a wide assortment of skills so that teachers can learn to build upon their own, diverse levels of understanding. Because teachers, like their young students, possess different levels of knowledge and skills considered part of the new computer literacy, some need instruction, for instance, in using search engines properly, while more advanced users of the internet might more beneficially focus on aspects of instruction like improving media literacy. Teachers must develop strong research skills themselves before they are able to apply them to their curricular planning or to teach them to their students. Of course, the younger the student, the more "scaffolding" they will need as they attempt to find and consider information found on the internet, so guiding teachers toward an understanding of how to promote meaningful, directed student research must be key to any professional development experience.

Engage in Deep, Not Surface Teaching of Historical Content

Teachers and prospective teachers must be encouraged to teach about culture and history in a meaningful, not simply surface manner. This is true regardless of the source of information, but is especially relevant when considering the previously mentioned pitfalls of internet-based instruction (Carr, 2008). A primary concern of theorists and practitioners of multicultural education is the need to avoid surface portrayals of cultural events and historical figures. For example, Banks (2003) has described four hierarchical levels of making education more multicultural: Contributions, Additive, Transformational, and Social Action. At the Contributions level, only surface elements like food or holidays are included in the curriculum. Banks suggests that teachers work toward implementing the highest two levels of multicultural education, Transformational and Social Action. Transformational multicultural education focuses on dealing with inequities throughout the curriculum and school culture. Teachers and schools who employ a Social Action approach, which Banks considers optimal, emphasize students' thinking skills and encourage students to reflect on their own, present actions so that they make positive choices in society.

Pang similarly (2005) discusses the difference between surface and deep cultural studies. She describes three levels of culture and encourages teachers to draw from all three levels, not from just “surface” cultural items (p. 1), when teaching students about cultures other than their own:

Level 1: Language, Symbols, and Artifacts

Level 2: Customs, Practices, and Interactional Patterns

Level 3: Shared Values, Beliefs, Norms, and Expectations (Pang, 2005, p.1)

Pang’s (2005) three levels of cultural expressions demonstrate a belief in the importance of teaching students to consider aspects of cultural groups that are deeper than surface, external details. When using the internet in Social Studies instruction, teachers must be careful to lead students toward meaningful understandings of the events, people, and themes they learn about. Students who are left on their own to “research” a given group of people or historical event are likely to quickly find and report on Level 1 cultural items and ignore the more complex realities of the aspects of culture that comprise Levels 2 and 3. Teachers who guide their students toward a realistic understanding of the dynamic complexities of culture will be more likely to effectively harness the many opportunities provided by the internet in the area of Social Studies education. Teachers who ignore the admonitions of theorists such as Banks (2003) and Pang (2005) when selecting internet-based resources to use with their students risk reinforcing Carr’s (2008) notion of the internet as an entity that promotes the surface skimming of information rather than the complex consideration of content.

SUMMARY AND CONCLUSION

A variety of important challenges face all teachers when they attempt to integrate the internet into their Social Studies instruction. Specific challenges faced by elementary teachers include making sure that websites are age-appropriate; encouraging the development of media literacy among young students; and helping students to understand the nature of hateful and false websites they might encounter. This article points to the need for further research on successful, meaningful internet use by teachers and students at the elementary level. Findings from a study in which teachers reported their internet-based instructional activities demonstrate that teachers use a variety of websites both as bases for curricular content and as sources of students’ research. Suggestions for improving teachers’ use of the internet with their young students include the development of professional learning opportunities for teachers that encourage teachers to improve their own set of computer literacy skills; the use of single, comprehensive guides that provide both content and methods that have been proven relevant and effective; and the notion of teaching Social Studies in a “deep” rather than a “surface” manner. Implementing these suggestions may help elementary level teachers of Social Studies to more effectively harness the opportunities of and address the concerns presented by the ubiquitous internet.

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INSTITUTIONAL AND ADMINISTRATIVE IMPEDIMENTS TO DEVELOPING AN ONLINE MBA PROGRAM – A CASE STUDY

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ABSTRACT

This paper describes the development of a unique online MBA program (called FlexMBA) in a business school at a mid-size public university. The program encountered significant impediments to its implementation. These impediments, both institutional (faculty and administration) and administrative (procedural), are detailed. Lessons learned from this endeavor are detailed and have implications for any institution of higher education that might contemplate development of an online, hybrid, or other innovative program.

INTRODUCTION

According to Braun (2003), the number of online MBA students in the United States grew from around 5,000 in 2000 to over 100,000 in 2003. In 2006, the last year for which statistics are available, applications to MBA programs rose 6.2% within the United States (Damast, 2007). Enrollments in overseas and online MBA programs has increased at a more rapid pace (GMRC, 2007; Haywood, 2004; Lorenzo 2004). While the number of online MBA programs has grown along with enrollment, research into online MBA programs is limited (Arbaugh, 2005; Parnell & Carraher, 2003).

This paper describes the development of a unique online MBA program (called FlexMBA) in a business school at a mid-size public university. The school already has a robust part-time MBA program on campus and has recently rolled out a Saturday-only program at a satellite campus. The purpose of this paper is to examine the institutional and administrative impediments to implementing the FlexMBA. The paper is divided into the following sections: Background (Perceived Need, Guiding Principles), FlexMBA Approach, FlexMBA Development Process, Administrative and Institutional Impediments, Lessons Learned and Conclusions.

BACKGROUND

The Perceived Need

As noted above, the school already had success with an on campus part-time MBA program and a Saturday-only program at a satellite campus. However, there were four trends driving the need for a more flexible MBA program. The first trend was the school's ability to meet the needs of potential students with complex work and family lives. Based on anecdotal reports, there was a perception that many potential students never even applied to an MBA program due to conflicts with work and family. Some students who do apply find the hardship of traditional classroom work too much. According to University's own Institutional Research Report (2006) 4.6% of students enrolled in graduate programs drop out. Among the most frequently given reasons for dropping out include change in family status, job conflict, and the need to work.

The second trend was the limited ability to expand the MBA program locally. On campus the program was limited due to the lack of classroom space. The school had expanded to a satellite campus for its Saturday only program and expansion to additional satellite campuses was considered, but no suitable location could be found.

The third trend was the desire to expand into foreign markets. The school already had an extremely profitable relationship with several foreign universities, especially in China. The number of MBA students in certain foreign

markets (such as China and India) had grown rapidly and was projected to continue to grow in the near future. Many students in these markets would have liked to attend an US-based MBA program, but could not due to financial or immigration reasons.

Finally, the university in general and the business school in particular have been at the forefront of using technology to enhance the learning process. The university, for example, invested heavily in online education technologies, such as Blackboard, Lecture 123, and the ability to podcast lectures. The business school had implemented a notebook computer requirement for students. Thus, the technology and technology know-how was already in place to implement an online MBA program.

FLEXMBA GUIDING PRINCIPLES

Based on the target audience the FlexMBA was developed with three main guiding principles: 1) the program should be self-paced, 2) the program should be delivered online, and 3) the program should be integrated across functional areas. Clearly, the main goal of a self-paced program would drive the need for online delivery.

Self-Paced

A number of researchers have shown that students participating in an asynchronous discussion provide longer, more in-depth comments and solutions (Bonk, et. al., 1998, Benbunan-Fich and Hiltz, 1999). The asynchronous approach has also proven effective in discussing MBA cases (Henson, Kennett, and Kennedy, 2003). Therefore, the FlexMBA was to be largely self-paced, with the requirement for asynchronous interaction.

Online Delivery

Hayward (2004) and Lorenzo (2004) noted that while enrollment in traditional MBA programs has declined, online MBA enrollments have increased rapidly. Online MBA programs can be broken into two categories – those that are entirely online and those that require some type of on campus residency. However, a residency requirement may not fit into all students' schedules. This is a particular concern for foreign students – who in addition to long travel times may also run into visa problems. Therefore, the FlexMBA was to be a completely online program, delivered through the Blackboard course delivery system.

Integration

The need for a more cross functional/interdisciplinary approach in MBA programs has been noted by the AACSB Management Education Taskforce (2002) and Barker *et. al.* (1998). Responding to the need for greater functional integration, a number of MBA programs have revised their curriculum. The FlexMBA was designed to be completely integrated across functional areas. Instead of a traditional course in a functional area (e.g., accounting, marketing, etc.) students would enroll in a business challenge. The challenge is a complex business problem that requires a cross functional approach to solve.

FLEXMBA APPROACH

The school's traditional MBA included 36 credits of business core courses and 12 credits of electives, which may be taken within a discipline or as general electives across concentrations. The FlexMBA contained the same content as the traditional program following the general elective (no concentration) model. All of the topics in all of the core and select elective MBA courses were retained, the credit requirement was kept at 48 credits, and the qualitative and quantitative requirements for successful completion were identical between the traditional MBA and the FlexMBA.

The FlexMBA simply repackaged the content into a series of integrated, interdisciplinary "Challenges" built around an extended and complex business case. The business case was further divided into nine Challenges (or decisions) where each addressed some aspect of the extended business case. To complete each Challenge students had to master graduate-level, discipline-specific knowledge and skills. In the traditional MBA, this content is taught in courses. In the FlexMBA program these topical areas have been rearranged and placed as a part of the Challenge where that knowledge or skill is most needed to solve the particular challenge.

Admitted students would also be given access to the first business challenge. Challenges are completed in order. Students cannot move on to the next challenge until the current challenge has been completed. The student must demonstrate mastery of the content via a pre-test, or complete the learning activity and then pass the post-test prior to completing the mini-deliverable. Following this same logic, all the mini-deliverables for all of the topics in the Challenge must be completed before the student attempts the Challenge deliverable.

THE FLEXMBA DEVELOPMENT PROCESS

The process of developing the FlexMBA can be divided into three main phases: 1) concept and business plan development, 2) content integration, and 3) content development. The idea of a FlexMBA was conceived and refined during the spring and summer of 2006. During that time background research was conducted on the potential student market and competing programs. As the university and school of business involved are not well-known (no national rankings for example), it was determined early on that any online program would need to be significantly different in order to attract wide student interest. After careful consideration, the guiding principles detailed above were developed. During the summer 2006 a business plan for the FlexMBA was written and the results presented to the Dean who approved moving forward to the next phase.

Phase two involved forming a committee with representatives from each academic department. The task of this committee was to determine how to integrate the material already taught in the MBA program. The committee decided to use a startup shoe company as a straw man case to help in its efforts. Each core course was then broken into its individual topics and then topics were placed where they would naturally occur in the development of a startup company. The result was eight major challenges (later expanded to nine) with about 12-20 topics within each challenge.

Phase three began in the summer 2007. In this phase the actual course content was developed. The course content consists of the following items for each topic within a challenge: 1) list of learning objectives, 2) readings, 3) recorded lecture, 4) quiz questions and answers, 5) mini-deliverable, and 6) discussion question or problem set (problem sets were used for quantitative material). Development of the actual content was largely complete by the fall 2007 – at which point a launch in the fall 2008 was anticipated.

ADMINISTRATIVE AND INSTITUTIONAL IMPEDIMENTS

The administrative and institutional impediments to implementing the FlexMBA can be broken into three major categories. These are: 1) university and school management, 2) school and university processes, and 3) faculty.

University and School Management

There is a disconnect on campus between Administration and Academics when it comes to innovation. The administration (President, Provost, and Dean) is quick to support innovation. However, the real work of the university occurs at the faculty and committee levels. The committee structures and processes are simply not adequate to handle innovative ideas that impact curriculum. In addition, faculty are mostly insulated from the financial stresses of the university and are therefore less anxious to innovate.

In the case of FlexMBA, there was continual public support from the administration. Hundreds of man hours and tens of thousands of dollars were committed and spent with the approval of the administration to get the FlexMBA developed to a point where the content was ready for inspection and approval. However, once the program was handed off to the various committees concerned it received the kiss of death.

The university has successfully implemented new and innovative programs when done via administrative fiat. While the faculty (and the committees they serve on) might object, eventually then come to tolerate these new programs. At least one academic program generating millions of dollars was up and running—without any faculty involvement—within six months.

School and University Processes

One of the main problems with development of the FlexMBA was the various approvals required to launch the program. Part of the problem was defining whether the FlexMBA was a “new” program or merely a repackaging of the traditional MBA. “New” programs require a more rigorous and lengthy approval process. For a “new” graduate

degree the process would typically include the school of business curriculum and graduate committees, a University curriculum committee, and the University graduate council.

However, delivering an approved program in a different manner does not require committee approvals. For example, many undergraduate courses in the School of Business are now offered in a hybrid format (part online and part in-class). This was done without any paperwork or committees. As the FlexMBA was in development the thinking of the School Administration and Developers was that this was not a “new” program and would not require extensive committee involvement. However, as development moved toward completion, various committees sought to become involved and the School Administration felt it was a good idea to seek these approvals. In addition, a committee comprised of senior faculty members from various disciplines was formed specifically to review the FlexMBA concept and content.

In the end, some of these committees did come back with questions or a list of perceived problems. However, none of the committees involved produced any recommendations or a report. In effect, the program died in these committees.

Content Review

With traditional programs the curriculum and approval processes are paper based and the decisions are based on the perceived logic flowing from the paper descriptions. For example, each course has a course outline that includes, among other things, the topics to be covered in that course. Learning units that might show exactly how a topic should be presented to students is neither presented on paper nor demonstrated in any way. It is generally assumed that the faculty person who might be assigned to teach the course will know how to help students learn the topics listed on the course outline. There is also an unwritten rule that whatever the professor does in the classroom is his/her business and far be it from the rest of the faculty to question his/her abilities.

For online and hybrid courses, including the FlexMBA, the materials reviewed and the criteria are quite different. With online programs, such as the FlexMBA, the actual course content is accessible to review. In fact, with FlexMBA it was required that all of the content—sometimes in its most raw form—be made available to the reviewing/approving committees. Obviously, there are several problems with this. First, it created a different and higher hurdle for the FlexMBA than for a traditional course. While in theory, we might want to review the actual content of every course, there should be one policy and one approach regardless of the format of the content. Reviewing content also opens up the course to the vagaries of individual faculty. In a paper-based review process one assumes that all professors will teach a topic appropriately. With electronic content available for review the developer exposes the fact that he/she does it their way, which may be different from the way other faculty, as a reviewer believe it should be done.

It was very difficult for the reviewers to isolate their macro (program and course) questions from their micro (topic) questions. As soon as a reviewer saw what he/she believed to be inappropriate coverage of a topic that micro view permeated the entirety of the review so that the course and program were now suspect. For one committee the developers created a detailed and focused questionnaire to determine if reviewers perceived that the list of specific topics covered in the FlexMBA was the same as the list from the traditional MBA. Feedback on the questionnaires was mostly about HOW the topics were covered, not WHETHER they were covered.

Faculty

In general the faculty felt no urgency to develop a program that could lead to a significant revenue stream for the school. While the School of Business is not well endowed, faculty have historically had no problem obtaining travel funds. Most faculty do not require additional resources. Only in the past academic year, as the FlexMBA was under committee review, have state and university budget constraints been felt. To some extent these have been offset by another program that was created largely by fiat.

From the start it was clear that senior faculty wanted little to do with this new program. Of the ten faculty members that volunteered to develop content for the FlexMBA, only one was tenured. In addition, three of the developers were adjunct professors, as nobody else in their departments volunteered to help develop the program. The adjunct faculty were overseen by senior faculty in their respective departments.

However, it was largely senior faculty that sat on the various committees. While the developers attempted to involve senior faculty in the design and development process, this effort seems to have largely failed. In at least one

instance the senior faculty members in one department determined that the coverage provided by the junior faculty member was incorrect.

In the end many of the senior faculty seemed to mistrust the content developed by the junior faculty. Obviously, having all of the content available and in a readily reviewable format differs from the way most junior faculty are typically evaluated. None of the junior faculty involved in this process have yet come up for tenure. Therefore, any negative impact to the junior faculty cannot be determined, but remains a concern for those involved.

In terms of content integration faculty split into two camps: those that thought that the traditional course structure would be just fine and those who thought that “some” integration was actually a disservice and that full and complete integration of the content was required. As it turned out, the issue of packaging the traditional MBA became one of the most controversial aspects. They disagreed not only on whether a repackaging was necessary but also on what content should be integrated with what other content. Each faculty member had a firm view of how content should be integrated across the disciplines and the proposed packaging of the content in the FlexMBA—largely done by junior faculty—was not it.

LESSONS LEARNED

The many lessons learned from our experience with the FlexMBA have implications for universities and schools that are attempting to innovate and implement new programs. In addition, these lessons have significant relevance to schools trying to build online and hybrid courses and programs.

University and School Management

Universities need incubators where Administration and Academic work together—outside the constraints of either—to bring innovative ideas to fruition. Administration needs to supply the institutional processes to support risk and Academic needs to provide innovators who are risk-takers. Administration should tolerate failure – as initial success for new ideas and programs may be difficult to achieve. University processes need to be developed to protect faculty, particularly junior faculty, who participate in innovative projects. Without these processes faculty will soon learn that it is better to keep their heads down and not suggest new ideas.

School and University Processes

A lack of understanding of the processes required to approve the FlexMBA up-front was one of the major reasons for its failure. Even for initiatives and programs that are anticipated to be “approved” by administrative fiat, buy-in from the chairperson of the various committees that might want to have a say should be sought. If this had been done at an early point in the FlexMBA process, potential stumbling blocks would have been revealed and could have been dealt with before actual development began.

While most schools have processes in place to handle traditional new program or course requests, the lack of a process for something that was not “traditional” caused major problems for the FlexMBA. The School of Business does have a clear process in place, for example, to handle a request for a new graduate degree program. However, was the FlexMBA a new program or a repackaging of an existing program? In the early stages the school administration and development team believed that the FlexMBA was a repackaging that did not require proceeding through the normal approvals process. Once the various committees found out about the FlexMBA, however, they cried foul and the approval process changed. This situation could have been avoided by including the various committees (or just their chairs) early in the process. In addition, schools should consider a separate process for handling new and innovative initiatives.

When proceeding through various committees it is essential that each committee knows exactly what its final product should be. In addition, a specific deadline must be established. At this time, the FlexMBA is still officially under review by various committees and has been in some cases for almost a full year. This is obviously too long. Part of the problem may be that the committees are not sure exactly what they should do in the case of the FlexMBA. For example, the school curriculum committee would normally look at the overall design and suggested course content for a new program. However, in the case of the FlexMBA the committee started to review the actual content developed, which normally would not be available.

Should online and hybrid programs be subject to content review? This is an important question that impacts not only the review process but raises important questions about academic freedom. Most, if not all, faculty members

would probably agree that their peers have the freedom to conduct their course in the manner they see fit as long as the subject matter is covered. In some schools a peer review process is in place in which faculty members conduct class visits and provide feedback. However, in most cases this feedback is limited to how the class is conducted not on the content covered.

With online and hybrid programs it is easy to review all of the course content. It is also easy for the faculty to disagree on the specific topics that are covered, the amount of emphasis given to particular topics, and how specific topics are taught. This was clearly the case with the FlexMBA. Some faculty felt that an online program should receive greater scrutiny than a traditional program. It is easy for committees and faculty to fall into that trap. However, if an online program requires that level of scrutiny, what does that say about the faculty who developed the program and what they are teaching in their traditional courses?

Online courses should receive approximately the same review as a traditional course. That is the appropriate committee or reviewer should insure that all of the major topics are covered, that the instructor has presented the material in a format that students can understand, and that the assessments are appropriate. This level of review does not require actually watching all of the online material. It does require a review of the online course outline – to ensure that all major topics receive coverage. A sample of the online content should be examined – to ensure the material can be understood by students. Finally, assigned assessments (quizzes, assignments, papers, etc.) should be reviewed in order to determine if they are appropriate (assess the correct material, not too hard or too easy, etc.).

Faculty

The FlexMBA initiative was hampered by a lack of faculty buy-in and involvement. The concept was put forward by two faculty members from the same department and the project initially only involved them and the Dean's office. The faculty at-large was told about the initiative, but it was not really sold to them. The business case that was developed for the FlexMBA – a 15 page document which included market research and financial projections – was not shared with the faculty. In addition, the overall financial operations of the School of Business were not discussed with the general faculty. Therefore, the faculty did not see an urgent need for additional revenue. Also, the faculty were not aware of the extensive background research that went into creating the FlexMBA concept.

As the FlexMBA moved from concept to development primarily only junior faculty stepped up to participate. In some crucial areas no faculty members volunteered. One entire department refused to participate in developing the FlexMBA – requiring the use of an adjunct to develop 27% of the core MBA material.

Clearly, when faced with a new initiative it is imperative to not only get general faculty buy-in, but also to ensure that the right members of the faculty are onboard. Senior faculty must be actively involved. These types of activities are too risky to leave to junior faculty. They are risky in two regards. First, is the process risk which can be more effectively handled by senior faculty to have more esteem with their peers and experience in dealing with various committees. Second, there is a risk to the junior faculty member when he or she comes up for tenure. While junior faculty can and should be involved, that involvement should be limited.

In addition to senior faculty, all academic departments must be adequately represented (by senior faculty members). Although the content developed for the FlexMBA by adjunct professors was reviewed by senior faculty members in their departments, there is a lingering perception that the content may not be up to par.

CONCLUSIONS

Officially, the FlexMBA is still under review by various committees. The school of business has a new dean and he has not yet weighed in on this matter. Whatever happens to the FlexMBA, the process undertaken reveal valuable lessons for those engaged in developing new initiatives in higher education.

Among the most important lessons learned are the following. First, insure that the initiative has the support of the administration (president, provost, and dean). Second, insure that the initiative has the active support and involvement of senior faculty members from across various academic disciplines. Third, depending on how innovative the initiative is, understand that processes may not be in place to effectively handle it from an approvals standpoint. Therefore, attempt to determine or create an approval path up-front and make sure that everyone agrees with it. Fourth, universities, schools, and departments should develop clear processes and standards for review and evaluation of online content. Fifth, it is important to understand any limitations imposed by current systems (information systems, institutional processes, legal requirements, etc.). Those involved with the initiative should work with the proper departments on campus to overcome or workaround these limitations.

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SPIRITUALITY, LEADERSHIP, AND CULTURAL DIFFERENCES AT WORK

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ABSTRACT

This paper presents an overview of the conversation that is taking place regarding the topic of spirituality in the management literature. This review is intended to give a novice reader on the topic a comprehensive framework to guide their own exploration of the links between spirituality and the disciplines of management, leadership, and cultural differences at work. We identify five major themes in the conversation on spirituality and four contemporary management concepts related to the themes. Another goal of this paper is to provide a straightforward and comfortable way for any management educator to incorporate the topic of spirituality into business and management education. To this end, we provide an introduction to an exercise that has been used successfully in an introductory management class to pique students' interest in the discipline of management and to deliver the message that the practice and study of management is serious business, rather than Dilbert-like comic relief in their portfolio of required business studies.

INTRODUCTION

There has been a significant increase in interest in spirituality among those who teach, write about, and engage in the practice of management. This interest is attested to by the number of relatively recent special issues of journals, sessions of professional meetings, and articles devoted to this topic. This paper presents an overview of the conversation that is taking place on the topic of spirituality in the management literature. This review is intended to give the novice reader on this topic a comprehensive framework to guide their own exploration of the links between spirituality and the discipline of management.

REVIEW OF THE LITERATURE

What is Spirituality?

Definitions of spirituality abound but some common themes that emerge in discussions of spirituality and management include the desire to find the ultimate purpose in life, meaning, interconnectedness, guidance by a force outside of oneself, actively trying to harmonize your life with a beyond, and energy (Cavanaugh, 1999; McCormick, 1994; Mitroff & Denton, 1999). Historically, spirituality has often been rooted in religion, yet the current dialogue has been enlarged much beyond religious traditions (Burack, 1999), and though consultants on "spirit at work" abound, they usually do not depend on making reference to any specific religious tradition. These individuals seem to focus on "forming a higher level of consciousness, greater insight, productivity, creativity, awakening new levels of joy, energy, opportunities, and satisfaction" (Cavanaugh, 1999).

Three relatively recent studies attempted to analyze what is being said about spirituality at work and identify the dimensions and themes in the conversation. Freshman (1999) conducted an exploratory analysis of what is taking place in the dialogue on spirituality using a qualitative research technique for thematic categorization, the Atlas TI software program. The researcher identified four themes in a sample of e-mail dialogue, literature search, and questionnaire responses regarding spirituality and management or spirituality at work: 1-personal (spirituality is a personal connection, a spiritual path is personal, personal development leads to spirituality); 2-learning/development (learning is an action of spirit at work, personal development leads to spirituality); 3-intuition (intuition leads to creativity and a higher purpose, intuition supports work and spirituality); and 4-diversity (acceptance and understanding of diversity results from spirituality, diversity is a quality of spirituality). Neal, J. A., Lichtenstein, B. M. B., & Banner, D. (1997) did a qualitative analysis of over 700 online discussions on spirituality over a three year period. They found that the individual spiritual transformation resulting from these experiences eventually results in the desire to integrate the new consciousness into one's work (through service, new meaning, deepening of the value of relationships, etc.). Of course there have always been individuals and organizations that

have taken a spiritual or people-centered approach as a matter of choice & commitment from the start. The literature on spirituality in the workplace is full of examples of organizations that illustrate this point. The most frequently noted are summarized in the section describing “normative models” later on in this paper.

Ashmos & Duchon (2000) report on an attempt to develop questions to measure the construct of spirituality at work. A set of questions were developed and administered to approximately 700 subjects in four hospital systems as part of a longitudinal study of meaning at work. The researchers designed the items in an attempt to measure the construct at the individual, work unit, and organizational levels. Using factor analysis, their initial results were most clear for items at the individual level of analysis. Results support their initial conceptualization of spirituality as consisting of three dimensions: inner life; meaningful work; and a sense of community. In addition, four other factors emerged which seem to elaborate on these initial three: blocks to spirituality; personal responsibility; positive connections with others; and contemplation. This study is important in that it is the first to attempt to measure the concept.

Lots of recent work has focused on the criticism of the work being conducted on the topic as lacking conceptual clarity, integrity, and a solid conceptual base. Recently there have been a number of attempts to distinguish between spirituality and religiosity, the impact and differences between the two, and addressing some of the issues of conceptual clarity (Black, Dube, & Wingfield, 2007; Lips-Wiersma, 2004; Singhai & Chatterjee, 2006; Tourish & Pinnington, 2002). These issues and developments will be addressed in the last section of this paper.

Why the Increased Interest in Spirituality?

What is the source of the interest in spirituality at work and why is it happening now? Some of the reasons noted in the literature include: 1-rapidly changing business environment; 2-changes in the nature of work; 3-importance of work as a source of meaning and growth; 4-recognition that it is people rather than technology that will make the difference in the competitiveness of businesses in the future; and 5-increased interconnectedness and interaction between people between different cultures leading to enhanced awareness, understanding, and appreciation of the diversity of views on and approaches to individual and organizational growth and success. Each of these factors and the main points being made by some influential business, political, and academic leaders on the discussion of spirituality, management, and business leadership will be described below.

Andre Delbecq (1999) developed and presented a course on spirituality to MBA's and CEO's in 1999. He says that he began his study of spirituality in the context of business leadership because of his experience of the intense spirituality of senior executives in Silicon Valley. He and Robert House were conducting a study on how CEOs were dealing with the rapidly changing business environment and he was deeply impressed with the stories of CEOs “selflessness of service flowing from the richness of their individual inner journeys.” McCormick (1994) suggests that “spirituality serves as a source of enduring meaning in turbulent times.” Turbulence and change in the environment for business seems to be the most frequently noted possible cause for the growth in discussions on spirituality at work.

The nature of work has a number of connections to the emerging interest in spirituality. For some workers there is demoralization and alienation due to downsizing, demands for long hours, and disappearance of job security (Cavanaugh, 1999; Neal, 1997). This has led to self-examination on the part of these workers regarding the meaning and nature of their work. Other writers talk about a different set of workers in our post-industrial society who are “...searching for meaning in work which transcends mere economic exchanges between isolated, autonomous individuals” (Burack, 1999; Kriger & Hanson, 1999; Tishler, 1999). These employees understand what's happened through re-engineering and downsizing and see themselves as independent brokers of their own services and knowledge. Through self-examination they realize that they'd not only like to make money through work, but also want work that provides other values, such as meaning and growth. It is noted by those authors that focus on post-industrial change in the nature of work that this search for meaning is a privilege enjoyed in economically developed societies where lower order needs are already met. Many authors note the overall importance of work in one's life, as the means through which individuals' develop professionally and spiritually and as a primary source of community or relationships with others (Ashmos & Duchon, 2000; Conger, 1994; Mitroff & Denton, 1999; Waddock, 1999). Without focusing on a particular cause, these authors note how work is increasingly becoming a source of this growth.

As individuals recognize the importance of work as a source of growth, apparently so does the organization. Burack (1999) talks about the economic-technological imperative and how companies are realizing that their performance has been improved as much as possible through technology, re-engineering, and downsizing.

These companies are starting to note that it is people that will make the difference in competitiveness in the future. The new management systems these organizations are embracing include empowerment and team oriented activities, both of which place a new premium on employee development and gaining employee commitment and trust. Burack notes that programs aimed at creating more hospitable work environments can only be described as “spiritually” oriented programs in the broadest sense.

Finally, due to increased interactions between cultures and enhanced cultural awareness and understanding, individuals and organizations are becoming aware and appreciative of culturally diverse practices that contribute to individual and organizational spiritual development, such as meditation, values clarification, etc. Frequently these are practices that have originated and been embraced by eastern rather than western society. Many of us in the west are beginning to appreciate the benefits of these cultural practices as a complement to our western way of being and approaching work.

Connection to Leadership, Cultural Diversity, and Existing Management Concepts

Numerous psychological and/or management theories and concepts have been included in the conversations on spirit at work. Authors frequently write about self-actualization and work redesign (especially the job enrichment concepts of meaningfulness, autonomy, empowerment, and connection with people). Others emphasize organizational culture, especially learning organizations, and new models of leadership, especially servant leadership and transformational leadership. This next section contains a brief summary of the relationship of spirituality to these concepts.

In discussing the changing nature of work, a number of writers have related spirit at work to Maslow’s concept of self-actualization. Self-actualization focuses on “realizing one’s potential” and many individuals conceive of spirituality similarly, as growth or development. Based on this understanding, motivation based on self-actualization is similar to a spiritual journey. Maslow’s theory suggests that self-actualization needs are active once “lower order” needs, such as safety, security, and self-esteem have been met. A number of authors have therefore suggested that this “spirit quest” through work is a privilege that some individuals in our post-industrial society enjoy (Booser & Maddox, 1992; Butts, 1999).

Another motivational theory, the basis for the task redesign technology called job enrichment, makes a distinction between extrinsic (from the context of work) and intrinsic (from the work itself) motivation. Research begun in the 1960’s on job redesign has led to the understanding that core job dimensions of variety, autonomy, task identity, significance, and feedback lead to the psychological states of felt meaningfulness, responsibility, and knowledge of results and these states are the basis for intrinsic motivation. Some individuals that have written about spirituality at work have focus on the same motivational factors, the desire for purposeful, important, and meaningful work. Though no authors have explicitly linked and analyzed the relationship between job enrichment programs and spirituality at work, this seems to be an obvious relationship that needs to be addressed.

Empowerment, which is defined as “a condition created by leaders that stimulates followers to act on their initiative and perform in a highly committed, intelligent, and ethical way” (Cherrington, 1994) is another concept that appears frequently in the conversation on spirituality. Autonomy, which is one of the core job dimension identified in the job enrichment research seems to be an integral part of empowerment as well, yet again has not been part of the dialogue on spirituality. Autonomy, which is the degree to which workers are free to exercise discretion in scheduling their work and deciding how it will be done” must be strongly related to the degree to which employees act on their own initiative, i.e., are empowered.

A concept that has been explicitly addressed in the conversation on spirituality at work is transformational leadership. Booser & Maddox (1992) describe a classroom exercise that explicitly links spirituality with the imagery underlying transformational leadership. They note that transformational leaders appeal to followers’ self-actualization (spiritual) needs, that followers are inspired and energized (to some spirit is energy) by transformational leaders. Dehler & Welsh (1994) address the concept of transformational leadership within the context of organizational transformations. They note that transformational leadership is critical to this process, and that it involves raising the consciousness of employees and emphasizing emotional arousal of employees based on the meaning and purpose they see in the organizations actions. They call this an appeal to employees’ spiritual realm and note that the organizations vision is the source of spirituality.

Organizational transformations and normative models of organizational culture seem to be one of the most popular management topics linked with spirituality in the literature reviewed (Burack, 1999; Butts, 1999; Dehler & Welsh, 1994; Delbecq, 2000; Neal et. al., 1999; Tischler, 1999). Numerous articles note the relationship between

Senge's model of the learning organization and spiritual growth practices. Burack (1999) describes Hewlett-Packard's culture, Tom's of Maine, and the changes in the organizational culture of Ford Motor Company as sharing a common theme based on spirit enhancing principles. Neal, Lichtenstein, & Banner (1999) also link spirituality to organizational transformations based on anecdotal reports from three practitioner-theorists who have been involved with dozens of organizational transformations. All of these individuals use spiritual imagery to describe the incident that sparked the transformation. The terms used by these individuals in describing the events were "grace", "magic", and "miracle". The question here is whether or not this type of image and language is becoming popular and therefore commonplace, or whether the terms are relatively objective descriptions of the initiating events. Finally, Kriger & Hanson (1999) propose a set of values and supporting organizational activities that are common to each of the world's major religions. These values are truthfulness, trust, humility, forgiveness, compassion, thankfulness, service, and peace. Many of the authors that focus on these models of strong and spiritual organizational cultures note that values such as these are relevant and are beginning to be seen as necessary to guide and keep organizations on track in the 21st century.

Talking about Spirituality in Management Education

The previous section explored some of the links between the content of management courses and the concept of spirituality. This information can be explicitly incorporated into a conversation on spirituality and management using an exercise (based on the presentation by Frederick & Hanson, 2000, available from the author) which involves large and small group discussions of some of the following questions and quotes:

- What is spirituality?
- How is spirituality different from religion?
- Why is spirituality important to our lives?
- What is the relationship between spirituality and creativity?
- What is the relationship between spirituality and learning?
- What is the relationship between spirituality and leadership?
- If we incorporate spirituality into our work, would we treat one another differently?
- To incorporate spirituality into our work, would we have to find new work?
- "I think management is the highest spiritual calling there is." [M. Scott Peck]
- "Those who find themselves in leadership positions in business bear a heightened responsibility for the moral state of society." [Vaclav Havel]
- "If we don't take care of people spiritually, then even economics will fail us." (Rev. S. Chinlund)
- "Enlightened management is one way of taking religion seriously." (A.H. Maslow)

Another choice is to implicitly incorporate spiritual practices into what and how one facilitates management education, similar to the examples given in several of the articles reviewed for this paper (Burack, 1999; Gunther, 2001). Many educators do this already, since the choice to teach is a choice to serve, to contribute to human growth and development of students' potential (spirit). Teachers are usually motivated by the intrinsic [spiritual] rewards of the job. Teachers must focus on creating a learning environment, which is often accomplished by incorporating "spiritual" practices in the classroom.

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UTILIZATION OF AN ENGINEERING CAMP TO ATTRACT AND STIMULATE INTEREST IN RURAL HIGH SCHOOL STUDENTS IN STEM CAREERS

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ABSTRACT

This paper is based on the development of a summer initiative supported by National Science Foundation (NSF) in order to increase the opportunities for rural high school students and their teachers to learn about, experience, and use information technologies within the context of science, technology, engineering, and mathematics (STEM). The program, Information Technology Experiences for Students and Teachers (ITEST), was developed in response to national concerns about shortages in the STEM fields. While ITEST concentrated on both teachers and students, the focus of the current paper is the development and implementation of the summer academy for students. Five objectives were established specific to students for the summer academy. The first objective was to attract talented students with a strong background in math and science based upon teacher nominations and students' academic performance history. The second objective was to help insure a strong representation of minority students, female students, and students from limited social economic backgrounds. The third and fourth objectives focused on increasing knowledge of and interest in the areas of science, engineering and technology. The fifth objective was to increase students' interest in taking more courses and advanced courses in STEM fields during high school. Pre- and post-academy measures of students demonstrated statistically significant gains in both the knowledge of and interest in these potential career choices. Measures also demonstrated increased interest among students in taking additional courses in the STEM areas. The preliminary goals established for students were achieved, and follow-up is planned to better determine if the academy was successful in maintaining interest in STEM areas based upon actual courses taken during the high school experience and subsequent enrollment in postsecondary education.

INTRODUCTION

The Information Technology Academy for Teachers (ITAT) and the Information Technology Academy for Students (ITAS) were developed to engage University faculty from science, technology, engineering, and mathematics to help teachers infuse information technology into their mathematics and science lessons and stimulate students' interests in these careers. Research indicates that using an interdisciplinary or integrated curriculum provides opportunities for more relevant, less fragmented, and more stimulating experiences for learners in science, math, technology and other areas (Frykholm & Glasson, 2005; Koirala & Bowman, 2003; Jacobs, 1989).

There is strong support for an integrated curriculum within the areas of mathematics, science, and technology (Wescott & Leduc, 1994). The traditional separation of mathematics, science, and technology instruction

showing only concretely defined subjects provides an unrealistic view of the world. Today, interrelatedness is needed to solve problems. Students best realize this when they engage in learning activities that cause them to apply their knowledge of mathematics, science, and technology concepts while seeking solutions to realistic problems (Park, 2006). The scientific, technological, and academic communities have a vital role to play in reaching out to education reform efforts and encouraging young people to study and pursue careers in science, technology, engineering, and mathematics (STEM) (Furner & Kumar, 2007; Kesidou & Koppal, 2004).

As noted from above, technology is increasing in every aspect of the world today. In parallel with this is the critical importance of the work force to be prepared with the necessary skills to work with the technology driven work place. Larry Irving, the Assistant Secretary for Communication and Information for the U.S. Department of Commerce, states that in today's world technical literacy is as important as the common three subjects, reading writing and arithmetic (Irving, 1999). Dede, Korte, Nelson, Valdez, and Ward (2005) emphasize that 21st century workers must have skills in science, math, and information and technology. They state "A primary challenge for U.S. education is to transform children's learning process in and out of school and to engage student interest in gaining 21st century skills and knowledge...use of sophisticated information technologies in every aspect can provide a powerful lever for this transformation" (p. 3-4). Unfortunately, rural schools typically do not have the resources needed to provide technology in the classroom.

The issue of work force development becomes critical when we consider that technology jobs are on the rise and there are more job openings than people to fill them (Irving, 1999). Irving notes the need to provide access as well as training to public institutions. This need is especially crucial for children coming from low income minority, rural, or inner city households where there may not be access to computers and/or Internet services. This issue is compounded in the South which although it has become more urban, still remains distinctly rural in culture and character (Southern Governors' Association, 2004).

North Carolina has the second largest rural population in the nation and the eighth largest percentage of rural students (Rural Community Trust, 2005). North Carolina's population is nearly 40% rural and of the rural students a third of them are minorities and two-fifths of them are eligible for subsidized lunches, one of the federal designators for poverty. Students in the higher income households have access to computers and the Internet, while only one-third of children ages 10-17 in the lowest income category have home access to computers. Rural schools and their teachers are then tasked with providing the educational and social opportunities needed to build technological literacy to their students.

This paper describes the impact of a National Science Foundation funded program for teachers and students in connecting science, engineering, mathematics, design, and information technologies to technology education in rural schools. ITEST, Information Technology Experiences for Students and Teachers, is designed to increase the opportunities for students and teachers to learn about, experience, and use information technologies within the context of science, technology, engineering, and mathematics (STEM), including Information Technology (IT) courses. The program is a response to the concern about shortages of technology workers in the United States. Supported projects are intended to provide opportunities for both school-age children and for teachers to build the skills and knowledge needed to advance their study, and to function and contribute in a technologically rich society. The grant received from NSF for enhancing interest in the STEM fields among rural, eastern North Carolina high school students was titled *Biomechanics and Robotics Explorations for IT Literacy and Skills for Rural Schools*. It was comprised of two primary components: The Information Technology Academy for Teachers (ITAT) and the Information Technology Academy for Students (ITAS). These academies were two and three week summer experiences, respectively.

Six counties were identified based on specific criteria as outlined in the original request for proposals. Out of these six rural counties in eastern North Carolina, ten high schools were selected to participate in the grant. An Advisory Council consisting of East Carolina University faculty and participating school district personnel met on two occasions to discuss the logistics of successfully implementing the requirements of the grant.

The focus of this paper is to review the initial success of the grant in five main areas specific to the student participants. These areas are: Were we able to attract high school participants who demonstrated strong skills in math and science? Were we able to have a strong representation of minority students, female students, and students from lower SES backgrounds in our participant pool? Did the summer academy make a difference in the students' knowledge pertaining to STEM careers? Did the summer academy make a difference in the students' interest in STEM careers? Did the summer academy make a difference in the type and level of science and math courses these students reported they planned to take in high school?

METHOD

Program

One of the more unique factors of the ITEST program is the focus was on the conceptual alignment between the ITEST instructional modules and the mathematics, science, and technology curricula students experience in North Carolina high schools. There were four topic areas that modules were developed for this grant. There topic areas were robotics, solid modeling, biomechanics, and excel. There was a fifth topic area of leadership and hidden barriers; however, this topic area was not aligned with curriculum standards of North Carolina. As each instructional module was created by engineering faculty, its mathematics, science, and technology content was mapped to high school courses and the respective standards which delineate the content of each. For example, after an ITEST module was developed, concepts contained therein were mapped to national and state standards for courses in physical science, chemistry, biology, physics, geology, algebra, geometry, advanced functions and modeling, and pre-calculus. Course module content was mapped to the *North Carolina Standard Course of Study*, the *National Science Education Standards*, and the *Principles and Standards for School Mathematics* (Public Schools of North Carolina, 2007; National Academy of Sciences, 1996; National Council of Teachers of Mathematics, 2000). Through this phase of mapping, curriculum developers could see exactly which state and national standards were being covered by ITEST modules.

The additional benefit of this mapping was for the high school students themselves. Because the ITEST instructional modules covered the necessary mathematics and science in the classrooms, students could more readily recognize that careers in engineering were not distinct from mathematics and science, but rather applications of such. They could also hopefully recognize that if they enjoyed mathematics and science they could have fulfilling careers in engineering.

Students

After the high schools and teachers were identified, six high school students from each school for a total of 61 students were to be chosen to participate in a three-week summer academy. While all schools had leeway in determining specific student selection criteria, common criteria across counties include those students who had the abilities that would indicate success in the STEM fields (i.e., successful completion of math and science courses), but also students who might not have thought of these areas as career options. A special attempt was made to focus on female students, minority students, and students from lower SES backgrounds. Each school could nominate up to 15 students based on interest demonstrated in math and/or science. Once the initial nomination list was prepared, students were interviewed by the school's ITEST team and asked to present a written statement of interest. The ITEST team consisted of the selected teachers and guidance counselors who would be attending the summer academy and other educators designated by each school system.

Sixty-one high school students ranging in age from 12 to 18 (with a mean age of 15) were extended invitations to attend the ITAS Academy. Fifty-five students were in actual attendance for the entire three week academy. Two students were unable to attend after accepting the invitation (one male and one female) and four students (two male and two female) left prior to the end of the three-week academy. The grade range of the students varied from rising freshman to rising senior (schools had been encouraged to consider 9th and 10th grade students but the range for the first year of grant was much broader). Table 1 provides a demographic summary of the student participants.

Table 1. Minority and Ethnic Status of Students Initially Attending the ITEST Academy (n=55)

Total		9 th Grade		10 th Grade		11 th Grade		12 th Grade	
M	F	M	F	M	F	M	F	M	F

Minority/Ethnic Status

American Indian	2	1	0	0	2	0	0	1	0	0
African American	9	12	2	3	2	6	3	3	2	0
Asian	2	0	0	0	1	0	0	0	1	0
Hispanic/Latino	4	4	1	1	2	1	1	2	0	0
White/Caucasian	10	9	4	0	5	6	1	1	0	2
Biracial	2	0	0	0	2	0	0	0	0	0
Total	29	26	7	4	14	13	5	7	3	2

The grant also focused on attracting students from lower socioeconomic status (SES) backgrounds. SES status was determined by eligibility for reduced or free lunch program through the various schools. While this is not always the best way to estimate SES status within populations, it provided a marker that could be utilized without undue intrusion into requesting personal financial information from parents of participating students. It should be noted that many families who would qualify for free or reduced lunch programs may not chose to apply and thus not be identified. Table 2 summarizes information on the economic status of participants.

Table 2. Percent of Students Qualifying for Free or Reduced Lunch Programs in Participating Schools in General and in Attendance at ITEST Academy

County	Percent Students Free or Reduced Lunch Program	Percent ITAS Students Free or Reduced Lunch Program
County 1	47%	77%
County 2	47%	100%
County 3	64%	66%
County 4	43%	56%
County 5	36%	83%
County 6	44%	71%

RESULTS AND DISCUSSION

Student Selection

The selection process addressed the first question asked in regard to student selection was: “Were we able to attract and retain high school participants who demonstrated strong skills in math and science?” In reviewing detailed information regarding student selection criteria from all high schools, this objective was met. All schools required submission of written material (i.e., essay, statement of interest in ITEST academy, formal application) and review of performance in math and science courses.

The second objective of the grant in regard to student selection was to identify female students, minority students, and students from low SES backgrounds that demonstrated skills in the STEM areas but might not view these as career options. The grant was very successful in meeting these criteria. Of the 55 students in actual attendance for the three-week academy, 26 were female and 29 were male adolescents. While it was not quite a 50-50 representation between male and female students, we achieved 47% female and 53% male participants. Minority/ethnic status of students of the 59 students initially attending the academy was as determined and is presented in Table 1. Sixty-four percent of the students were from minority/ethnic backgrounds and 36% were white/Caucasian. Of the six students out of 61 who did not complete the program, three were male and three were female students. Review of demographic information in Tables 1 and 2 indicates that the grant was successful in meeting objective two. Female students were strongly represented as were minority students. In addition, students from low SES backgrounds were also well represented.

Academy Effectiveness

Tables 3 and 4 examine the questions of effectiveness of the summer program. In order to ascertain if a significant difference was obtained between pre- and post-academy level of student interest in STEM fields, ratings from beginning and end of academy were compared for the question “How interested are you in working in the following fields?” Table 3 shows that the percent of students indicating “a lot” of interest increased from 28.1% to 48.1% for science, from 29.8% to 42.6% for engineering, and from 12.3% to 28.3% for information technology following the Academy. In addition, students reported having more knowledge of STEM career options in terms of college admissions, college programs, as well as jobs related to STEM areas after having completed the academy than they did at the beginning (see Table 4).

Table 3. Student Interest in STEM Work - Pre to Post-Academy Comparison

PRE-ACADEMY: How interested are you in working in the following fields?	Not at all (n)	A little (n)	Some (n)	A lot (n)
Science	12.3% (7)	26.3% (15)	33.3% (19)	28.1% (16)
Engineering	14.0% (8)	28.1% (16)	28.1% (16)	29.8% (17)
Information technology	19.3% (11)	29.8% (17)	38.6% (22)	12.3% (7)
POST-ACADEMY: How interested are you in working in the following fields?	Not at all (n)	A little (n)	Some (n)	A lot (n)
Science	5.6% (3)	22.2% (12)	24.1% (13)	48.1% (26)
Engineering	9.3% (5)	25.9% (14)	22.2% (12)	42.6% (23)
Information technology	7.5% (4)	24.5% (13)	39.6% (21)	28.3% (15)

Table 4. Student Knowledge Regarding College STEM Programs and Careers – Pre- to Post-Academy Comparison

How much do you know about...	% Responding Some/A lot – PRE (n)	% Responding Some/A lot – POST (n)
college admissions requirements	67.8 % (38)	83.0% (44)
college programs in math, science, engineering or information technology	51.8% (29)	77.4% (41)
jobs and careers in different fields	75.0% (42)	85.0% (45)
jobs in the information technology field	44.6% (25)	67.9% (36)

Students also reported more knowledge about how to pursue careers in STEM fields as shown in Table 4 after attending the academy compared to prior to the academy. The results in Table 4 show notable improvement in student awareness of college admissions, programs, and job opportunities.

A repeated measures design was conducted with pre- and post-academy serving as the independent variable and students ratings on their self-reported level of interest in possibly pursuing a field of study in these areas as the dependent variables. Field options were science, engineering and information technology. The student ratings for

interest in all three fields went up significantly. Table 5 summarizes statistical information relative to the changes in student attitudes. Changes in student interest in STEM fields were statistically significant at the 95% or higher confidence level. Upon completion of the academy, students were significantly more likely to report an interest in pursuing a career in science, engineering, or math than prior to attending the academy.

Table 5. Student Interest in Career Options in Science, Engineering and Information Technology Pre- and Post-Academy

Source	Pre-Academy Mean & SD	Post-Academy Mean & SD	Mean Square	F	df	p
Science	2.77(1.01)	3.15(0.96)	6.35	6.35	1,52	.01
Engineering	2.77(1.03)	2.98(1.04)	1.36	4.01	1,52	.05
Information Technology	2.46(0.93)	2.87(0.92)	3.47	6.80	1,51	.01

The fifth objective was whether or not the summer academy would make a difference in the type and level of science and math courses students reported they planned to take in high school. In order to assess this, students were asked about specific courses they had taken and were planning to take both pre- and post-academy. It should be noted that the questions that asked about which math and science classes the students had taken or that they planned to take were directly from the State of North Carolina Curricula for Math and Science. The computer-related tasks that they were asked about were taken from the State of North Carolina Educational Standards for math/science/technology skills. In developing these questions, it was felt that it would be best to use the state standards that related to the academy curriculum. It would also be worth knowing if the academy actually reinforces some of the skills that the state curricula are trying to promote.

There were some small increases in the number of students who indicated that they would take specific math courses after the academy compared to before. Three additional students indicated that they planned to take Introductory Math or Technical Math II and four additional students indicated that they planned to take Algebra II. The three additional students who indicated that they planned to take Technical Math II after the Academy were female. The majority of students (94.7%, n=54) indicated that they had already taken Algebra I (see Table 6).

Table 6. Student Plans to Take Math Courses – Pre- to Post-Academy Comparison

I plan to take...	Pre-Academy (n)	Post-Academy (n)	Have taken (n)
Introductory Math	1.8% (1)	7.0% (4)	10.5% (6)
Technical Math I	7.0% (4)	8.8% (5)	1.8% (1)
Technical Math II	1.8% (1)	7.0% (4)	0.0% (0)
Integrated Math I	3.5% (2)	5.3% (3)	0.0% (0)
Integrated Math II	1.8% (1)	1.8% (1)	0.0% (0)
Integrated Math III	1.8% (1)	1.8% (1)	0.0% (0)
Integrated Math IV	1.8% (1)	3.5% (2)	0.0% (0)
Algebra I	10.5% (6)	24.6% (14)	94.7% (54)
Algebra II	61.4% (35)	68.4% (39)	33.3% (19)
Geometry	36.8% (21)	35.1% (20)	54.4% (31)
Pre-calculus	61.4% (35)	59.6% (34)	12.3% (7)
AP Calculus	50.9% (29)	50.9% (29)	0.0% (0)
AP Statistics	22.8% (13)	19.3% (11)	1.8% (1)
Advanced Function	26.3% (15)	28.1% (16)	0.0% (0)

Discrete Math	3.5% (2)	1.8% (1)	0.0% (0)
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Larger differences were seen after the Academy for students planning to take certain science courses. In Table 7, nine more students planned to take AP Chemistry, seven more students planned to take AP Biology, and seven more students planned to take AP Physics after the Academy. Five of the additional students planning to take AP Biology and seven of those planning to take AP Chemistry were female. About half of the students (49.1%, n=28) indicated that they had already taken Physical Science and Biology (45.6%, n=26).

Table 7. Student Plans to Take Science Courses – Pre- to Post-Academy Comparison

I plan to take...	Pre-Academy (n)	Post-Academy (n)	Have taken (n)
Physical Science	35.1% (20)	38.6% (22)	49.1% (28)
Biology	45.6% (26)	42.1% (24)	45.6% (26)
AP Biology	17.5% (10)	29.8% (17)	3.5% (2)
Chemistry	66.7% (38)	59.6% (34)	10.5% (6)
AP Chemistry	12.3% (7)	28.1% (16)	0.0% (0)
Environmental Science	8.8% (5)	17.5% (10)	1.8% (1)
AP Environmental Science	8.8% (5)	8.8% (5)	1.8% (1)
Physics	35.1% (20)	35.1% (20)	8.8% (5)
AP Physics	12.3% (7)	24.6% (14)	0.0% (0)
AP Physics B	1.8% (1)	7.0% (4)	0.0% (0)
AP Physics C	1.8% (1)	3.5% (2)	0.0% (0)

The data collected and reported in this paper should be considered preliminary and as baseline information for future research. The researchers have received permission from 41 students and their parents to contact them in the future and forthcoming research will further indicate the success of the engineering camp in regards to students' interest in STEM courses, degrees and careers.

SUMMARY

The ITEST grant which was a collaborative effort of secondary schools and inter-departmental colleagues at the university level made a significant impact in rural eastern North Carolina. After the first year of the three year grant, noteworthy progress was made in impacting the school systems in rural and underserved counties. East Carolina University met all five objectives set out in the grant. As noted previously, we are entering into a technology driven work place, and it is imperative that we provide today's students, regardless of their location, with the skills in order to succeed (Dede et al., 2005; Irving, 1999).

The ITEST academy attracted and retained high school students who demonstrated strong skills in math and science. Only six students out of the 61 did not complete the entire program. The ITEST academy also was able to attract and retain female students, almost 50%, as part of this program. In addition, 64% of the students participating were from minority /ethnic backgrounds. This was substantial in that the majority of engineering students at the college level and professional engineers are primarily white men (National Science Board, 2008).

Students from lower social economic status (SES) backgrounds were also represented in the ITEST academy. In each county, the percentage of students who attended the academy with this designation was higher than the overall county's percentage of students with the same designation, and one county had 100% of the students who attended designated as coming from homes at the low SES level. These represent students who may not be aware of potential careers in the STEM fields even though they may have the potential to do well in the areas of science, technology, engineering and math. North Carolina has the second largest rural population in the nation and the eighth largest percentage of rural students (Rural School & Community Trust, 2005). North Carolina's population is nearly 40% rural, and of the rural students a third of them are minorities and two-fifths of them are eligible for subsidized lunches, one of the federal designators for poverty. Students in the higher income households have access to computers and the internet, while only one-third of children ages 10-17 in the lowest income category have home access to computers. Rural schools and their teachers are then tasked with providing the educational and social opportunities needed to build technological literacy to their students.

Students who attended this academy also showed a higher interest in as well as knowledge of the STEM related fields based upon pre- and post-academy comparisons. This supports previous findings that an integrated curriculum can provide opportunities for more stimulating experiences for learners (Frykholm & Glasson, 2005; Koirala & Bowman, 2003; Wescott & Leduc, 1994). The students also demonstrated a higher level of knowledge about college admission requirements, college programs and careers in STEM fields after attending the academy. In addition, students showed an increase in their plans of taking higher level math and sciences courses back at their high schools. Findings are supportive of Barker and Ansorge's (2007) research which showed that technology not only helps students learn science and math more effectively and efficiently, but it also promotes STEM fields as career options.

All five areas initially set as goals of the academy were met. However, the researchers are well aware that continued efforts to encourage and engage these students are necessary to maintain sustainability of the progress. Work is currently underway to help sustain students' interest and knowledge of careers in the STEM fields through after school programs, teacher initiated hands-on learning, and participation in local competitions that emphasize STEM areas.

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ACCOUNTING SYSTEM CHANGE DURING INCREASING COMPETITION: AN APPLICATION OF DISCRIMINANT ANALYSIS

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ABSTRACT

This study reports how specific facets of competition affected particular dimensions of utilities' accounting systems. First, during increasing competition, utilities modified their accounting systems by increasing the number of cost and profit responsibility centers and by subdividing expense accounts into more homogeneous cost pools.

Secondly, when contrasting utilities that increased the use of responsibility centers to those that subdivided expense accounts, we find that utilities that increased the use of responsibility centers tend to be exposed to competition by producing electricity, sell more non-traditional products, and utilize a greater variety of generating technologies.

On the other hand, utilities that sub-divided their expense accounts tend to be exposed to competition by selling electricity to wholesale and industrial customers, have more diverse billing requirements, sell more traditional products and are larger.

These findings provide insight into how organizations may systematically modify their accounting systems in response to different types of competitive pressures.

INTRODUCTION

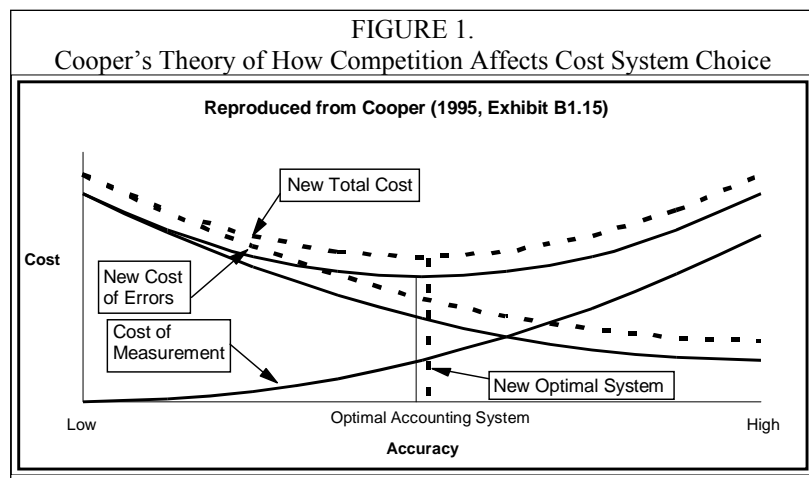
This article presents the results of a study that investigates how competition interacts with context to affect accounting system design. The study focuses on the Texas electric utility industry during the late 1990's when the industry was transitioning from regulation to intense price-based competition. Field-based interviews identified relationships consistent with extant theoretical and empirical studies. Data were gathered from 31 Texas electric utilities to test these relationships.

MOTIVATION

How Competition Affects Accounting Systems

Robin Cooper's *Theory of Cost System Choice* (Cooper 1995) and Khandwalla's (1972) empirical study predict and provide evidence, respectively, that increased competition is associated with more complex accounting systems. Cooper's model characterizes the optimal cost system as one that minimizes the sum of the measurement costs plus the cost of errors.

Cooper identifies changes in competition as "the major cause of *changes* in the cost of errors" (Ibid., B1-44). Cooper's model predicts that when the cost of errors increases, the optimal cost system is one that generates more accurate information. This relationship is depicted in Figure 1. Cooper's model predicts that increased competition results in more accurate, and necessarily more complex, accounting systems.



Khandwalla (1972) finds that firms operating in more competitive environments utilize more management control systems. Khandwalla's study examined the use of nine control systems, including standard costing, marginal costing, and flexible budgeting, by 92 manufacturing firms "drawn from a wide variety of American industries" (Khandwalla 1972, 276). He finds evidence "that competition in practically any form induces management to institute formal, fairly sophisticated controls" (Ibid., 281).

Contingency Theory Relates Context to Structure

Contingency theory frameworks, which "have become the dominant logic for research on control systems design" (Dent 1990, 9), predict that "organizational variables are in a complex interrelationship with one another and with conditions in the environment" (Lawrence and Lorsch 1967, 157).

Contingency theory posits that there is no universal control system that is "best" but that the circumstances or context faced by the organization determine which control systems are appropriate (Woodward 1965; Waterhouse and Tiessen 1978; Fisher 1995). "The choice of a technique or system is inherently dependent on specific circumstances" (Horngren 1982, 9). In its most basic form, contingency theory predicts a relationship between structure and context, assuming that structure is an outcome of contextual factors (Fisher 1995).

Why Study Texas Electric Utilities?

The primary reason this industry was studied is its dramatic and rapid shift from regulation to competition. This study uses a 2-year measurement window ending December 1, 1996 to study the effects of increasing competition on accounting systems. The "treatment" in this *quasi-experiment* (Cook and Campbell 1979) is an increase in competition.

During 1995 and 1996, electricity producers in Texas found their competitive environment undergoing a dramatic change from government regulation to a very competitive, price-based wholesale market which is very price sensitive. A survey of large energy users found that in a market where 91% of customers were somewhat or very satisfied with their existing energy supplier, 58% and 81%, respectively, would change suppliers for a 5% and 10% rate reduction (Reichman-Karten-Sword 1995). Another survey found a majority of residential customers would change electricity providers for a 10% rate reduction (Price Waterhouse 1996).

Other features of the Texas utility industry made it an ideal "laboratory" for studying accounting system change during a period of increasing competition. The large heterogeneity of organizations, both in terms of their exposure to the increasing competition and their contextual diversity, resulted in large variation in the variables of interest. Industry participants, used to a regulatory environment, were willing to share proprietary information that firms in other industries may be unwilling to disclose. The widespread use of a standard chart of accounts ("FERC accounts") provides a unique opportunity to identify accounting system changes intended to support managerial accounting purposes. Utilities were still used to a regulatory environment of open communication. As a result, utilities were willing to share proprietary information.

RESEARCH METHODS AND MEASURES

Field Work

To identify factors underlying this study, employees of six Texas electric utilities and three industry consultants were interviewed. Interviews identified areas of accounting system change, potential explanatory variables, and possible interrelationships.

Later interviews focused on three questions: (1) "Are utilities changing their accounting systems?" (2) "If so, why?" and (3) "What may explain why one utility may change its accounting system when another does not?" Answers to question (1) identified facets of accounting system design examined by this study. Replies to question (2) identified contextual features related to accounting system design and the two distinct ways in which utilities were exposed to the increasing competition. Question (3) identified how context and competition influence accounting system choice.

Measured Dimensions of Accounting System Design

Interview respondents indicated utilities are modifying their accounting systems along five dimensions. Measures of these dimensions are summarized in Table 1.

Activity-Based Costing Dimension

Interviews indicated one of the ways utilities were modifying their accounting systems in response to increased competition was by implementing activity-based costing (ABC) systems. “Activities Costed” measures the number of activities costed to capture the creation of new, or enhancement of existing, ABC systems.

Product Unbundling Dimension

Interview respondents reported that utilities were changing their accounting systems to support “Product Unbundling.” Unbundling refers to the process of taking a bundled product, i.e., a single product that includes multiple sub-products, and separating these sub-products for the purpose of cost collection and reporting.

Federally regulated utilities are required to use the Federal Energy Regulatory Commission’s Uniform System of Accounts, or “FERC accounts,” (United States of America Code of Federal Regulations, 1995). Also, many utilities are required by the United States Department of Agriculture Rural Utilities Service to use a chart of accounts entitled “Uniform System of Accounts - Electric” (United States Department of Agriculture 1995) that correspond directly to the FERC accounts. Widespread use of FERC accounts has led to an environment where virtually all investor-owned, cooperative, and river authority utilities, plus a large percentage of municipal utilities, collect costs into a FERC-based chart of accounts. This allows a consistent interpretation of “full product cost” as those including an allocation of specifically defined selling and administrative costs, thus allowing this study to measure two facets of the Product Unbundling Dimension of accounting system design—namely “Direct Costs Collected” and “Full Costs Collected” in Table 1.

Speed Dimension

Interview data indicate utilities were responding to increasing competition by changing their accounting systems to report results more quickly. “Days to Close” measures the number of days required to close the accounting records.

Responsibility Accounting Dimension

Factors relating to the delegation of work downward in the organizational hierarchy are an important aspect of organizational design (Baiman, Larker, and Rajan 1995). Interviews indicate that the degree to which cost management responsibilities are delegated varies greatly among Texas utilities. One utility interviewed did not delegate any cost or revenue management responsibilities below the chief executive officer. At the other extreme, another utility indicated that its accounting systems support hundreds of responsibility centers.

Responsibility accounting is the gathering and reporting of information that is used to control operations and evaluate performance. A responsibility center is an activity, such as a department, that a manager controls. (Dominiak and Louderback 1997, 437-8)

One common type of responsibility center is the cost center, which is a segment whose manager is responsible for costs but not for revenues. Interview respondents stated that utilities use cost centers to push cost management responsibilities downward in the organizational hierarchy

A second common type of responsibility is the profit center, which is a organizational subunit whose

TABLE 1. Accounting System Design Variables	
Variable Title	Type
Activity-Based Costing Dimension	
Activities Costed	Numeric
Product Unbundling Dimension	
Direct Costs Collected	Numeric
Full Costs Collected	Numeric
Speed Dimension	
Days to Close	Numeric
Responsibility Accounting Dimension	
Number of Cost Centers	Numeric
Number of Profit Centers	Numeric
Number of Sites	Numeric
Sub-Account Dimension	
Number of Sub-Accounts	Numeric

manager is responsible for both costs and revenues. Interview responses indicated that as products are unbundled, new cost and profit centers are sometimes created to manage these newly-unbundled products.

A third facet of accounting system design associated with responsibility accounting is measured by the “Number of Sites” variable, the number of distinct geographic sites for which a utility collects costs.

Sub-Account Dimension

While most utilities collect costs into a FERC-based chart of accounts, they are not required to collect costs at a lower (sub-account) level. Therefore, the use of sub-accounts that are more detailed than FERC accounts is discretionary. “Number of Sub-Accounts” measures the average number of sub-accounts into which utilities collect costs for five “Operation Supervision and Engineering Expense” FERC accounts. This provides a measure of the degree to which a utility has sub-divided the standard FERC chart of accounts for internal cost management purposes.

Measured Dimensions of Context

Responses to the question, “What may explain why one utility may change its accounting system when another does not?” identified five ways in which utilities differ contextually. We label these as separate dimensions of context, measures of which are summarized in Table 2.

Two facets of external reporting are measured. “Number of Customer Billing Requirements” identifies the number of different types of “large-volume” monthly bills a utility generates, such as those for retail residential customers. “Number of External Reporting Requirements” identifies the number of external reporting requirements a utility faces, such as those for the SEC, FERC, and Public Utility Commission of Texas.

The second measured dimension of context, products produced, separates “traditional” electric utility products (generation, transmission, and distribution) from non-traditional products such as energy management, appliance sales and repair, cable television, and cooking classes. “Number of Traditional Products Produced” and “Number of Non-Traditional Products Produced” reflect how many of the traditional and non-traditional products, respectively, that a utility produces.

TABLE 2. Context Measures		
	<u>Variable Title</u>	<u>Type</u>
External Reporting Dimension		
	Number of Customer Billing Requirements	Numeric
	Number of External Reporting Requirements	Numeric
Products Produced Dimension		
	Number of Traditional Products Produced	Numeric
	Number of Non-Traditional Products Produced	Numeric
Generating Technologies Dimension		
	Number of Generating Technologies	Numeric
	Nuclear Generating	Indicator

In a classification borrowed from the 1994 Inventory of Power Plants (Energy Information Administration 1996), “Number of Generating Technologies” in Table 2 includes the number of fuel type/generating technology combinations used by utilities. “Nuclear Generating Technology” is an indicator variable that is equal to one if the utility uses nuclear fuel to generate electricity.

Geographic dispersion is measured by “The Number of Counties Served” (by the utility), and “Total Revenue \$” is used to measure firm size.

Technology?	Variable
Geographic Dispersion Dimension	
Number of Counties Served	Numeric
Size Dimension	
Size (Total Revenue \$)	Numeric

Measured Dimensions of Competition

Interview respondents indicated that some electric utilities in Texas have been more affected by competitive and regulatory changes than others. For example, large urban electricity generators serving industrial customers are finding their competitive environment becoming much more price sensitive. However, small rural distribution-only utilities serving residential customers were largely unaffected by the competitive and regulatory changes that occurred during the 2-year period ending December 31, 1996.

This study takes the perspective that the increased competition observed during the 2-year measurement window is particularly relevant to utilities participating in two sub-environments within the electric utility industry. The first is comprised of firms supplying large wholesale and industrial customers who benefited from the increased price competition. This dimension of exposure to competition is measured by “Wholesale & Industrial Sales” in Table 3, which identifies the percentage of a utility’s electricity sales provided by industrial or wholesale customers.

TABLE 3. Exposure to Competition Measures	
Variable Title	Type
Wholesale & Industrial Sales	Numeric
Percent Self-Generated	Numeric

The second sub-environment is comprised of generating utilities. To the extent that a utility generates its own electricity, it is more exposed to increasing competition. Interview respondents expressed a strong sentiment that generating utilities need to meet the prevailing price benchmark to survive, even if a generating utility’s customers are currently unable to choose another supplier. For example, if a generating utility’s residential customers see themselves paying rates significantly above their neighbors’, the utility is expected to come under pressure to decrease prices. This dimension of exposure to competition is measured by “Percent Self-Generated” in Table 3, which identifies the percentage of electricity sold that is self-generated.

Table 4. Mail Questionnaire Response			
Utilities in:			
Ownership	Texas	Sample	Response
IOU	7	7	3
River Authority	3	3	1
Cooperative	79	41	19
Municipal	75	45	8
Total	164	96	31

The Sample

A non-random sample of 96 utilities was chosen from the population of 164 Texas electric utilities. The sample selection process was intended to maximize the range of heterogeneity of product mix and production technology. Consistent with this goal, all of the (34) generating utilities and those with significant industrial or wholesale sales (31) are included. By including the single remaining IOU and six transmitting utilities, the remaining organizations represent a relatively homogeneous pool of 92 municipal and cooperative distribution-only utilities whose sell primarily to retail residential customers. These 92 utilities were very similar with regards to product mix in that they produced a single product—distribution of electricity to residential customers, and with regards to production technology in that all purchased the electricity they sold from other utilities. Twenty-five percent (24) of these utilities were randomly chosen, for a total of 96 utilities.

Data Collection

A pre-contact method was used to administer a mail questionnaire. Each of the 96 sample utilities was contacted by telephone during which the chief financial officer was asked if he/she would fill out the questionnaire

in return for which summary data would be provided. After mailing the questionnaires, approximately once a month, for four months, utilities were re-contacted to inquire about the questionnaire and answer questions.

Heberlein and Baumgartner's (1978) analysis of factors affecting response rates predicts that the questionnaire should yield a final response rate of 55.76% with a 95% confidence interval from 40.15% to 71.4%. As indicated by Table 4, 31 of the 96 utilities completed the questionnaire for a 32% response rate which, while significantly less than that predicted by Heberlein and Baumgartner (1978), is considered satisfactory (Emory 1985, 172). The lower than predicted response rate appears to be due to the highly technical and detailed nature of the questions and because, in order to answer some of the questions, respondents frequently had to contact other organizational units within the utility.

ANALYSES AND INTERPRETATION

To reflect that the subject of interest is change in accounting system design during a period of utility deregulation, the differences in the responses from 1995 to 1997 for all the Accounting System Design Variables identified in Table 1 were used.

The "difference in activities costed" variable (Figure 2) was extremely skewed by one very large outlier. This resulted in this variable acting as an indicator for one particular utility, thus this variable was dropped from consideration.

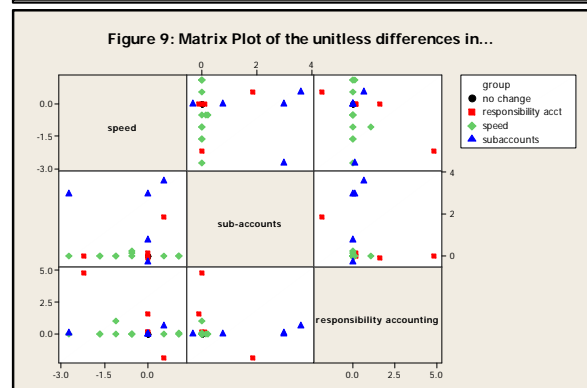
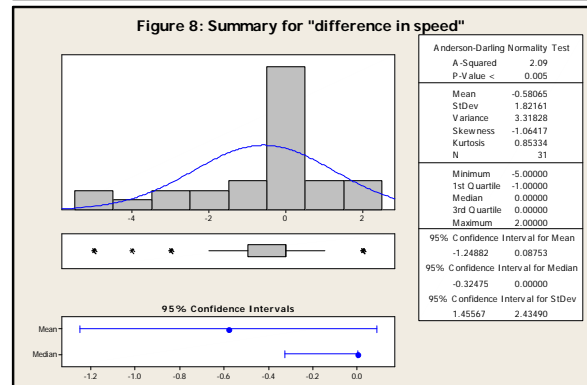
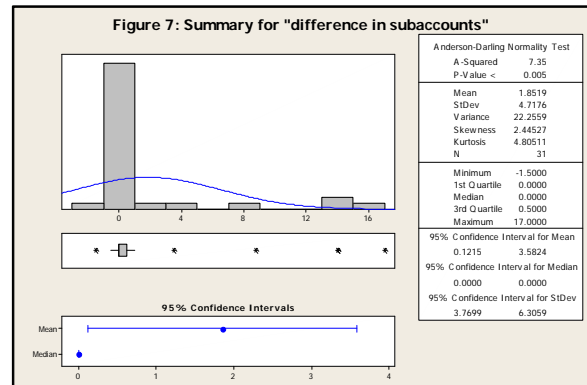
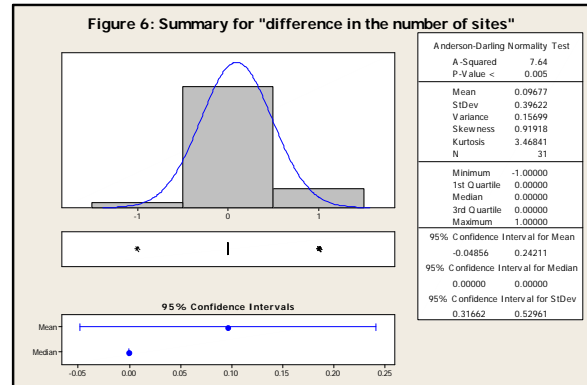
Correlation analysis showed that "difference in direct costs collected" and "difference in full costs collected" variables were highly correlated ($r = 0.760$, $p < 0.0005$), thus these two variables were summed to create a "difference in costs collected" variable (Figure 3).

Correlation analysis ($r = 0.714$, $p < 0.0005$) also showed that "difference in cost centers" and "differences in profit centers" were also highly correlated. These two variables were summed to create a "difference in responsibility accounting" variable (Figure 4).

A scatterplot (Figure 5) of these two new variables shows a point with high leverage ($h_i = 0.75$), causing these variables to be collinear. As the number of non-zero points is larger for the "difference in responsibility accounting (Responsibility Accounting)" variable, the "difference in costs collected (Product Unbundling)" variable was dropped from consideration.

The "difference in the number of sites" variable showed such a limited variability (Figure 6) that it was not useful in determining how the utilities were responding. This variable was also dropped from consideration.

At this point, only three accounting system variables remain: difference in responsibility accounting (Figure 4), difference in number of sub-accounts (Figure 7) and difference in speed (Figure 8). The units of measure effects were removed by dividing by their respective



standard deviations. The resulting values were then used to assign each utility to one of four groups using the following rules:

- Utilities with zeros for all scores were labeled “no change.
- Utilities were otherwise labeled based on the variable with the largest absolute score.

At this point, there are 9 utilities labeled “no change,” 5 utilities labeled “responsibility accounting,” 12 utilities labeled “speed”, and 5 utilities labeled “sub-accounts.” The utilities as labeled are graphed in the Figure 9 matrix plot relative to the variables used for labeling.

Next, the units of the accounting context and exposure to competition variables as recorded in 1995 were standardized by subtracting their respective means and dividing by their respective standard deviations. “Nuclear technology” was dropped from the analysis at this point as only one utility used this technology. “Total revenue” was dropped at this point as this variable was incorporated into the “ratio of revenue to county population” variable.

A discriminant analysis was then run using these standardized context and competition variables. These variables correctly identified all of the responsibility accounting and sub-accounts utilities, misidentified three speed utilities (2 as no change and 1 as sub-accounts) and two no change utilities (1 as responsibility accounting and 1 as speed) for a 83.3% correct identification rate. Examining the linear discriminant function for group should now be helpful in determining how these context and competition variables discriminate among these groups.

Table 5.
Linear Discriminant Function for Groups

	no change	responsibility accounting	speed	subaccounts
Constant	-0.5539	-4.6192	-0.7020	-2.6000
wholesale & industrial sales	-0.2922	-0.6423	-0.4730	1.8405
percent self-generated	-0.5740	1.2050	0.7551	-0.3401
billing requirements	-0.3939	-1.4433	0.7851	1.2772
reporting requirements	0.0063	-0.3634	-0.3074	0.5496
traditional products	-0.2098	-1.4217	0.1386	1.7193
nontraditional products	-0.8637	4.2722	-1.4799	-0.6215
generating technologies	0.2463	2.4645	-1.3604	-1.9376
geographic dispersion	-0.2511	0.2242	0.1064	0.4922
revenue per population	-0.9556	0.4911	-0.6624	2.2117

As all of the input variables are standardized, a larger coefficient indicates a greater influence towards a particular group. The coefficients in bold in Table 5 indicate which group a particular variable appears to push towards. It is interesting to note that none of the variables clearly push strongest towards either the no change or speed groups. As these were the two groups in which misclassifications occurred it is suspected that changes in speed were more due to random variation rather than an actual response to deregulation. The speed utilities were reclassified using the previous rules into one of the other three groups and the discriminant analysis was rerun.

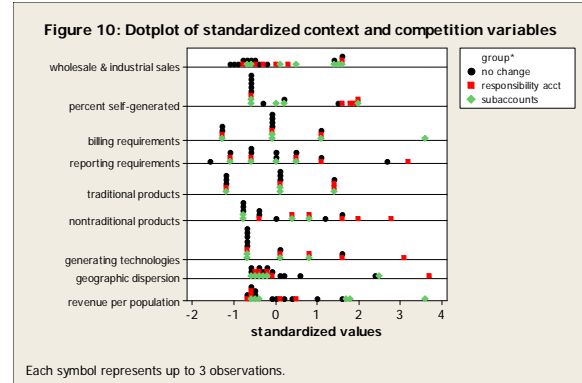
Reassigning the speed utilities to one of the other three groups resulted in a 90% correct identification rate. 1 of the 16 no change utilities was misclassified as sub-accounts; 1 of the 7 responsibility accounting utilities was misclassified as no change, and 1 of the 7 sub-accounts was misclassified as no change. The linear discriminant function in this case is depicted in Table 6.

It appears that the strongest drivers towards a change in sub-accounts are greater wholesale and industrial sales and greater billing requirements. Also driving towards a change in sub-accounts is a greater number of traditional products and greater

Table 6.
Linear Discriminant Function for Groups

	no change	responsibility accounting	subaccounts
Constant	-0.6941	-2.4266	-2.0953
wholesale & industrial sales	-1.1047	0.0800	2.2224
percent self-generated	-0.2298	2.0079	-0.3973
billing requirements	-1.0040	0.6041	2.2221
reporting requirements	0.0845	-0.4763	-0.0517
traditional products	0.1956	-2.0115	1.7978
nontraditional products	-0.9790	2.1817	-0.4969
generating technologies	-0.7127	1.8431	-1.6485
geographic dispersion	0.3336	-0.3739	0.0434
revenue per population	-0.6480	-0.2063	1.5356

revenue per county population. The strongest drivers towards a change in responsibility accounting is a greater percent self-generated and a larger number of non-traditional products. Also driving towards a change in responsibility accounting is a larger number of generating technologies. Reporting requirements and geographic dispersion appear to have only a weak influence on a utility's response to deregulation. The (Figure 10) dot plots also demonstrate these conclusions; for example, note how the green diamonds of the sub-account utilities tend towards the larger standardized values in wholesale and industrial sales while the red squares of the responsibility accounting utilities tend toward the larger standardized values in percent self-generated.



CONCLUSION

This study reports two main findings. First, during a period of increasing price-based competition, utilities modified their accounting systems in two ways—by increasing the number of cost and profit responsibility centers and by subdividing expense accounts into more homogeneous cost pools.

Secondly, when comparing the utilities that increased the use of responsibility centers to those that subdivided expense accounts, we found that the utilities increasing the use of cost and profit responsibility centers tended to be exposed to the increased competition by producing electricity rather than by selling electricity to wholesale and industrial customers, and be more affected by the number of non-traditional products and number of generating technologies than those creating more sub-accounts.

On the other hand, the utilities sub-dividing their expense accounts (Sub-Accounts) tended to be exposed to the increased competition by selling electricity to wholesale and industrial customers, and be more affected by number of billing requirements, number of traditional products produced and size.

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WHAT LEVEL OF BUDGETARY GOAL DIFFICULTY ELICITS MAXIMUM EFFORT?

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ABSTRACT

Budgets are commonly used for multiple purposes. Whereas planning budgets reflect organizations' "best guesses" of future events, control budgets are intended to motivate high levels of effort.

Budgetary control mechanisms modeled in a principal-agent setting typically find that the use of such schemes is Pareto optimal only when the budgetary goals are set to very difficult levels.

This project studies how individual effort levels vary with different levels of goal difficulty in an experimental setting.

We use a between-subjects factorial design. Subjects are assigned to either linear or budget-based compensation schemes at levels of goal difficulty ranging from 10% to 50% probability of goal attainment after controlling for skill and learning effects. An ink-stamping task is used to measure subjects' effort levels. Results indicate that the optimal level of budgetary goal difficulty may be less than that prescribed by information economics models.

INTRODUCTION

It is common practice to use internal budgets for many purposes, including planning, motivation, evaluation, coordination and education (Barrett & Fraser, 1977). While Jensen (2001) contends that the biggest problem with corporate budgeting is linking financial compensation to budgetary goal attainment, budget-based compensation schemes are common in modern economic organizations (c.f. Chen & Jones, 2007; Merchant, 1990; Reibstein, 1987).

In the absence of financial incentives, the effect of goal difficulty on effort is well understood. Mento, Steel, and Karren (1987) conducted a meta-analysis of 70 studies published between 1966 and 1984 that investigated the effects of goal difficulty on performance. They state, "If there is ever to be a viable candidate from the organizational sciences for elevation to the lofty status of a scientific law of nature, then the relationships between goal difficulty, specificity/difficulty, and task performance are most worthy of serious consideration."

Our understanding of how financial incentives interact with goal difficulty to affect performance is limited. While goal-based compensation schemes are generally found to elicit more effort than other schemes, the specific level of goal difficulty that maximizes elicited effort has yet to be identified.

MOTIVATION

Two approaches have been pursued in the the search for the level of budgetary goal difficulty that maximizes elicited effort—theoretical and empirical. While empirical studies yield inconclusive results, the theoretical studies predict that to maximize effort, goals need to be very challenging.

Theoretical Studies of how Budgetary Goals Affect Performance

Demski and Feltham (1978) explore "why and how budgets should be employed for motivational purposes in an economic setting." By constructing an economic model of how employment contracts affect effort choice, they find that budget-based compensation schemes can elicit greater effort than linear (piece rate) compensation schemes when the budget-based compensation schemes are "characterized by a rather high standard."

When Lewis (1980) describes an example of such a bonus contract, he also finds the budgetary goals must be set to very difficult levels. Particularly, after adjusting for the higher worker effort level, Lewis (1980) states, "the agent will earn the bonus 20 percent of the time."

Thus, theoretical studies predict *ex ante* goal attainment rates of 20% are needed to maximize elicited effort under goal-based compensation schemes. As used herein, “*ex ante*” goal attainment rates are the frequency that goals are attained by individuals exerting the effort elicited under a given compensation scheme.

Empirical Studies of how Budgetary Goals Affect Performance

While empirical studies find that budget-based compensation schemes increase effort, such studies have yet to demonstrate the level of goal difficulty that maximizes effort elicited by budget-based compensation schemes.

It is generally thought that to motivate, a budget should be at least somewhat challenging (Merchant, 1998). Bonner et al (2000) conduct a cross-classification analysis using data from 131 experiments and find goal-based compensation schemes have the highest probability of positively affecting performance “*because they link pay to performance and typically provide a specific and challenging (but achievable) goal*” (italics added, *ibid.* p28).

This is a common perspective, i.e., that effort is maximized when goals upon which financial incentives are based are challenging but achievable (Merchant 1990). Operationalizing “challenging but achievable” has proven difficult.

In contrast to the very challenging goals predicted by theoretical studies, empirical results are mixed. Wright’s (1992) study suggests that the optimal level of budgetary goal difficulty is between 1% and 67% *a priori* goal attainment rates. “*A priori*” goal attainment rates are expected goal attainment rates, usually based on uncompensated, do-your-best treatments. Merchant’s (1989) study of 54 profit centers in 12 publicly held, United States corporations found that “budgeted earnings targets are the most important performance standard,” and that these budgeted targets are set at a “highly achievable level.” Hirst and Yetton (1999) found that subjects assigned goals with a 20% *a priori* goal attainment rate outperformed subjects assigned to a do-your-best treatment group.

The research question addressed in this study is “What is the level of budgetary goal difficulty that maximizes elicited effort?”

EXPERIMENTAL DESIGN

Subjects were recruited from lower division accounting courses. The experiment was conducted during three separate sessions for each of the participating classes. A total of 126 subjects participated in the experiment. The three experimental sessions were conducted during normally scheduled class times, in the classroom. No course credit was given for participating in the experiment.

In a 2x6 between-subjects factorial design, subjects were assigned to one of two compensations schemes (piece rate or budget-based) and one of three levels of goal difficulty, i.e., medium, difficulty or very difficult, corresponding to *a priori* rates of goal attainment of 50%, 25%, and 10%, respectively.

An ink stamping task was used to measure effort. This involves inking a rubber stamp and then stamping into a rectangle approximately 0.75” by 2.” The stamp mark has to meet certain requirements to be considered an acceptable product, and subjects are given instruction on the requirements for an acceptable stamping and the common mistakes. The task is similar to that used by Cloyd and Frederickson (1998).

Each session occupied fifteen to twenty-five minutes of each of three class sessions. Session I (pretest) took approximately fifteen minutes of class time, Session II (posttest) took approximately twenty minutes of class time, and Session III (debriefing) required approximately ten minutes of class time. All materials are available upon request from the authors.

Experimental Sessions

Session I served to recruit subjects, introduce them to the experimental task, conduct training and the pretest. Subjects were told they had the opportunity to participate in an accounting experiment, the nature of which would be revealed during session III. An ink stamp, ink pad, and stamping sheets were handed out to all subjects choosing to participate. Subjects were told that the ink stamping task was intended to simulate a manual manufacturing task where computer chips are inserted into printed circuit boards. Training was conducted to explain the requirements for an acceptable stamping (i.e., inside the rectangle, adequately inked, uniform pattern) and to allow subjects to perform the task on a practice stamping sheet. The subsequent pretest consisted of three, thirty-second “test” sessions during which subjects were instructed to produce as many acceptable stampings as possible.

Between sessions I and II, subjects were assigned to treatment cells, and goals were constructed for each subject. Subjects were assigned to treatment cells based on their pretest performance. Subjects were ordered based on how many stampings each produced in the pretest, and were assigned compensation scheme and goal difficulty treatments sequentially down this list, which achieved approximately equal pretest performance by cell.

In addition, the pretest results formed the basis for constructing individual subjects' goals. These goals were set to correspond with *a priori* probabilities of achievement of 50%, 25% and 10%, for the medium, difficult and very difficult goals, respectively. This was done by using the pretest data to estimate a population standard deviation for the experimental task, and then adding a multiple of this standard deviation to subjects' pretest performance scores to construct their goals. The medium goal was set to the individual subject's pretest performance plus anticipated learning. The difficult goal was set to the individual subject's pretest performance plus two-thirds of an estimated standard deviation, plus anticipated learning. The very difficult goal was set to the individual subject's pretest performance plus 1.28 times an estimated standard deviation, plus anticipated learning.

Session II served to refresh subjects' familiarity with the experimental task, apply the goal difficulty and compensation scheme treatments, and conduct the posttest and the questionnaire. At the beginning of this session, each subject was given new sets of practice and experimental stamping sheets and a cover letter. Training was conducted as in Session I to explain the qualities of an acceptable stamping and allow subjects to practice the task. The compensation scheme and goal difficulty treatments were applied via a cover letter. The posttest was conducted identically to the pretest. Subjects made stampings for three, thirty second "test" periods.

Each cover letter described how a cash prize that the subject could win in the session III lottery would be calculated. Depending on the experimental cell to which the subject is assigned, the cover letter described either a linear compensation scheme or a "bang-bang" budget-based compensation scheme. Budget-based prizes were set to \$20 if the subject attained the goal or \$10 if the subject did not produce the amount of stampings identified as his or her goal. The "piece rate" amounts for the linear compensation scheme subjects were set to \$20 divided by each subject's goal. This ensured that, for subjects assigned to the same level of goal difficulty, payoffs for goal attainment are the same, whatever the assigned compensation scheme. The questionnaire served as a manipulation check for the compensation scheme treatment.

During Session III, a cash lottery was held for each experimental group (class) and subjects were debriefed regarding the nature of the experiment. In preparation for the lottery, each subject's performance was measured and then, depending upon the assigned compensation scheme, a lottery prize was calculated for each subject. At the beginning of session III, one lottery slip per subject was placed into a receptacle and the winning tickets were drawn. The winners were paid in cash immediately.

Random lottery incentives have been empirically examined by Starmer and Sugden (1991) and Bolle (1990). Both studies find the use of lotteries can accomplish incentive motivations similar to paying each subject. Bolle states, "Under certain circumstances (small decision costs, anonymous choices) experiments with rewards for all subjects can be replaced by experiments with the same rewards for randomly selected subjects" (p. 167).

RESULTS

Of the 126 subjects who participated in sessions I and II, 51 incorrectly answered the compensation scheme treatment question in the Session III questionnaire. This indicates these 51 subjects did not understand the compensation scheme assigned. Thus, data for these 51 subjects are excluded from further analysis.

Table 1 identifies the number of subjects and average performance per treatment cell. Performance is defined for each subject as the number of good posttest stampings minus the number of good pretest stampings.

Table 1.
Performance per Treatment Cell
Goal Difficulty (*a priori* probability of goal attainment)

Compensation Scheme	Medium (50%)	Difficult (25%)	Very Difficult (10%)
Linear	n = 11 Perf. = 9.0	n = 12 Perf. = 6.1	n = 12 Perf. = 8.8
Budget	n = 12 Perf. = 2.9	n = 15 Perf. = 12.1	n = 13 Perf. = 5.1
T-Test	T-Stat = 1.85	T-Stat = 1.90	T-Stat = 1.21
(two-tail)	P-Value = 0.08	P-Value = 0.07	P-Value = 0.24

The linear, or piece-rate, compensation scheme is used here in a manner described by Demski and Feltham (1978), i.e., as a baseline against which performance elicited via the budget-based compensation schemes is compared. In fact, the way in which monetary incentives were constructed “stacks the deck” against the budget-based scheme. Table 2 summarizes this point.

Table 2.
Financial Incentives per Treatment Cell
Goal Difficulty (*a priori* probability of goal attainment)

Compensation Scheme	Medium (50%)	Difficult (25%)	Very Difficult (10%)
Linear	Expected = \$20.00	Expected = \$15.00	Expected = \$12.00
	If Attain Goal = \$20.00	If Attain Goal = \$20.00	If Attain Goal = \$20.00
Budget	Expected = \$15.00	Expected = 12.50	Expected = \$11.00
	If Attain Goal = \$20.00	If Attain Goal = \$20.00	If Attain Goal = \$20.00

The experiment is designed to collect data useful for comparisons within each of the three goal difficulty treatments. For example, within the “Difficult” (25% *a priori* goal attainment) treatment, subjects assigned to either compensation scheme receive the same \$20 for goal attainment, but subjects assigned to the linear scheme are expected to receive, on average, \$15.00 (*a priori*) compared to subjects assigned to the budget-based scheme who are expected to receive, on average, \$12.50 (*a priori*). Thus, within each of the three goal difficulty treatments, the rewards for goal attainment are identical but the expected payoffs are weighted more heavily toward the linear schemes.

As indicated in Table 1, the treatment group with the highest average performance is the budget-based/difficult (25% *a priori* probability of goal attainment) group who averaged 12.1 more good stampings in the Session III posttest than during the Session II pretest. In addition, only within the “Difficult” goal difficulty treatment did subjects assigned the budget-based scheme outperform those assigned the linear scheme. Due to the exploratory nature of this study, two-tailed T-tests were conducted within each of the three goal difficulty treatments. Results are displayed in Table 1 and are statistically significant at the 10% level for the difficult and medium goal difficulty treatment groups.

One area of inconsistency in this topic is in expressing goal attainment rates. For example, the empirical studies discussed above identify *ex ante* goal attainment rates which are goal attainment rates given the subject is expending the effort elicited by the compensation scheme administered. In contrast, empirical studies sometimes use *a priori* goal attainment which are goal attainment rates elicited via a do-your-best treatment.

Table 3.
Goal Attainment Rates per Treatment Cell

Compensation Scheme	Goal Difficulty		
	Medium	Difficult	Very Difficult
Linear	<i>A Priori</i> (Expected) = 50%	<i>A Priori</i> (Expected) = 25%	<i>A Priori</i> (Expected) = 10%
	<i>Ex Ante</i> (Actual) = 64%	<i>Ex Ante</i> (Actual) = 58%	<i>Ex Ante</i> (Actual) = 42%
Budget	<i>A Priori</i> (Expected) = 50%	<i>A Priori</i> (Expected) = 25%	<i>A Priori</i> (Expected) = 10%
	<i>Ex Ante</i> (Actual) = 58%	<i>Ex Ante</i> (Actual) = 80%	<i>Ex Ante</i> (Actual) = 23%

Table 3 summarizes these two types of goal attainment rates as observed in this study. The *a priori* or expected goal attainment rates are those at which subjects are expected to attain their assigned goals, given the same level of effort as that elicited during the do-your-best pretest, plus expected learning. The *ex ante* or actual goal attainment rates are the actual observed goal attainment rates within each treatment cell. It is interesting to note that within the goal difficulty level where the budget-based scheme outperformed the linear scheme, the actual goal attainment rate for subjects assigned to the budget-based scheme was 80%, which is a much higher goal attainment rate than that predicted by the theoretical studies discussed above.

CONCLUSION

Budgets are commonly used to motivate. To maximize the motivational effect, there is widespread belief that budgets must be challenging but attainable. This study finds that to maximize the motivational effect of budget-based compensation schemes, the budgetary goal should be set to a level of difficulty such that the *a priori* level of goal attainment is greater than 10% but less than 50%. While, on the surface, this seems consistent with the commonly-held “challenging but attainable” perspective, the observed *ex ante* goal attainment rates suggest that the optimal level of budgetary goal difficulty may be less difficult than that predicted by expected utility-based theoretical studies.

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TIME BANDITS: A REJOINDER

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ABSTRACT

In a recent article in *Business Horizons* Ketchen, Craighead, & Buckley (2008) identified people who work part-time in exchange for full-time pay, in essence stealing time from their employers. We agree with Ketchen and colleagues that these "Time Bandits" are an aggravating organizational problem particularly for universities, but we argue they have used "Theory X" assumptions about human nature (employees are inherently lazy and lack ambition) in their analysis of the problem and in their recommendations for what to do about Time Bandits. Rather than approach the problem of Time Bandits with tighter control mechanisms, as suggested by Ketchen, et. al., we borrow from McGregor's "Theory Y" assumptions (employees will self direct in pursuit of goals to which they are committed), thus making tightened control mechanisms unnecessary.

INTRODUCTION

We simply assume that the way we see things is the way they really are or the way they should be. And our attitudes and behaviors grow out of these assumptions. - Stephen R. Covey

Assumptions about human nature guide the practice of management. Managers, for example, must assume that people will (more or less) show up for work on time and do their jobs. But what if they don't show up on time and don't do their jobs? Then the manager might ask questions, perhaps even talk to the person whose behavior has become a "problem." How the manager addresses the "problem" then will depend on her assumptions about human nature, human capability, human motive at work. Those of us, who write about what managers should do, also make assumptions about the world that determine the solutions we suggest to organizational problems. It is the assumptions that Ketchen, Craighead, and Buckley (2008) made in a recent article in *Business Horizons* about the organizational problem of Time Bandits that we address in this paper.

TIME BANDITS: A REJOINDER

Ketchen, et. al. (2008) point to a small, but aggravating problem that many organizations – especially colleges and universities – experience called Time Bandits. Ketchen and colleagues define Time Bandits as people who, for whatever reason, evade their job responsibilities and use company time for personal interests, such as hobbies or side businesses. Time Bandits are not workers who occasionally leave work early or who squeeze in a few rounds of FreeCell on company time. Rather, Ketchen, et. al. (2008) describe workers who seriously and systematically "steal" time from their employers and, in effect, work part-time for full-time pay. Thus, the label "Time Bandits."

We agree with Ketchen and his colleagues that time banditry is a problem, especially in many colleges and universities, and we applaud their courage to speak publicly of a concern that many faculty and administrators only grumble about in university hallways. We do not agree, however, with many of the assumptions that drive the Ketchen, et. al. (2008) analysis and, in particular, the recommendations for what to do about Time Bandits. In this paper, we identify the assumptions underlying the Ketchen, et. al. (2008) analysis and suggest that a different, and we think, more appropriate set of assumptions, lead to a more effective strategy for how to deal with the problem of Time Bandits.

The Impact And Causes Of Time Bandits

In their analysis of this organizational phenomenon, Ketchen, et. al. (2008) suggest that Time Bandits are harmful to organizations because they undermine the organization's mission, morale, and productivity. They give examples: Sam is a mid-level manager who does a reasonable job of servicing existing clients, but seems never available to write contract proposals for new business, although he finds time on workdays to go surfing. Barb is a department head for a state agency and although she possesses adequate technical skills, she ignores managing her staff, preferring instead to trade stocks online. Phil is a professor at a large public university who meets his classes, but has given up research activity entirely, and uses his non-classroom time to run a restaurant. While the authors include two examples from outside the university setting, clearly their passion and major preoccupation in the paper is with time banditry in universities, for which they argue, the direct costs can be considerable. For example, they estimate that a college of business professor bandit who is paid the AACSB-school average of \$96,000 plus benefits, can be paid up to \$48,000 per annum for not engaging in the kind of research activity that is customarily part of a professor's "job description." The direct theft also produces collateral consequences, suggest Ketchen, et. al. (2008). Bandits, like rabbits, multiply as colleagues notice that theft goes unpunished and they begin thieving themselves. Productive colleagues become cynical and find work environments with greater distributive justice, in effect leaving the organization in the hands of bandits.

In speculating about what causes people to become Time Bandits, Ketchen and his colleagues state that most Time Bandits don't make a conscious, malicious decision to steal time. Rather, thievery evolves gradually because of boredom, lack of direction, lack of support, or frustration with work. Banditry emerges in work environments, they argue, with inadequate performance standards and poorly designed reward systems. Further, they argue that supervisors enable Banditry because they fear the "price" of addressing the issue head on is too great. They then essentially use conflict avoidance and appeasement in order to justify doing nothing. Co-workers also enable Time Banditry by tolerating it.

The recommendations that Ketchen, et. al. (2008) make for how to deal with this "crime" are to put in place control mechanisms such as quick interventions and tightened job descriptions that can then enable pay reductions and job re-design for the guilty parties. The "blame the victim" nature of these recommendations and punitive approach to dealing with Time Bandits struck us as ill conceived and ultimately ineffective. The assumptions underlying these recommendations suggest there is something wrong with individuals with little consideration to what is wrong with a system that produces Time Bandits. As professors, we train MBA's and managers to ask the question regarding problem employees, "What possible role am I playing in this situation?" Yet, that question was noticeably absent from the Ketchen, et. al. paper. Thus, we found ourselves looking more carefully at the assumptions behind Ketchen, et. al's recommendations in order to expand our thinking about how to deal with the small, but annoying group of employees that our colleagues labeled "Time Bandits."

Assumptions: Revisiting Theory X and Y

While underperforming employees are a real challenge for managers, it's interesting that Ketchen et al (2008) have dusted off McGregor's classic Theory X as a framework not only to explain time banditry, but also as a framework to deal with it. Essentially Theory X is the name for a set of assumptions harbored by "old line managers" which assumes that employees are passive, lazy, lack ambition, prefer to be led, and resist change. McGregor, however, argued that effective management did not necessarily require reliance on Theory X assumptions. Rather, managers might adopt a set of different assumptions that in turn suggest sharply different implications for the practice of management. These different assumptions, termed Theory Y, are based on the premise that humans are not inherently passive and lazy; they do not lack ambition, nor do they necessarily resist change. Recognizing the possibility of human growth and development, Theory Y proposes a central principle "...of integration: the creation of conditions such that members of the organization can achieve their own goals best by directing their efforts toward the success of the enterprise" (McGregor, 1960. p. 49). Aligning employee self interest and organizational interest, then, meant that managers did not have to rely so much on the tight, external controls that the Theory X approach assumes is the only plausible way to manage.

McGregor also notes that Theory X provides managers an easy rationalization for ineffective performance: blame the victim. Poor performance is always due to the human nature of the employees. They don't perform because they are lazy, self-centered, not very bright, people. Alternatively, Theory Y blames poor performance on

the manager. “If employees are lazy, indifferent, uncooperative, Theory Y implies that the causes lie in management’s methods of organization and control” (McGregor, 1960. p. 48).

Theory X assumptions find their way into practice in either a “hard” or “soft” version. The hard version emphasizes coercion, tight controls, threats, and punishments (Bolman and Deal, 2003). Over time such management generates low productivity, antagonism, subtle sabotage and militant unions. The soft version of Theory X is permissive and undisciplined. Managers work hard at avoiding conflict by trying to satisfy everyone. The superficial harmony that results masks undercurrents of apathy and indifference (Bolman & Deal, 2003).

Time Bandits: Not X Enough

Ketchen et al. (2008) essentially argue that Time Bandits thrive in systems that are not Theory X enough. For example, Time Bandits appear in work environments that lack performance standards (i.e., not hard X enough). In academic work environments Assistant Professors aren’t Bandits because their professional lives are ruled by the exacting performance standards required of all those who seek tenure. Bandits only appear among the tenured, in part because “...there are few performance hurdles for most academics.” (Ketchen, et. al., p.9) Post tenure review, they note, fails to deliver much in the way of substantive action.

The corrective, Ketchen et. al. contend, is found in hard Theory X remedies. They recommend that job descriptions be put in writing, be revised every year, and be treated as a contract—“in exchange for pay, an employee must fulfill the demands specified within the job description. “Like any contract the job description also should specify the penalties for not fulfilling one’s requirements” (Ketchen, et. al., 2007, p.13). A corollary benefit to rigorous job contracts, Ketchen and colleagues argue, is reducing the likelihood of successful grievances and lawsuits, and an overall reduction in employee/supervisor conflict. Thus, a hard-X command and control system produces two important benefits: it clearly articulates appropriate behavior, and it eliminates conflict.

Applying hard Theory X logic to reward systems, Ketchen and his colleagues argue that universities should never use across-the-board pay increases, and those who do not fulfill their contract should receive a series of reductions in pay over time. Moreover, academic Bandits should never be given an opportunity to earn overload money for teaching summer classes or in executive education programs. Private-sector Bandits should be passed over when it comes time to distribute bonuses or profit sharing.

Ketchen et al. (2008) contend that Bandits are tolerated because of the conflict-avoiding behaviors found in a soft Theory X work environment. Managers and co-workers abdicate their moral authority, they say, by not confronting Bandits. Abdication occurs because dealing with a Bandit is seen as more time consuming and aggravating than not dealing with a Bandit. Actual confrontations seem to lead to grievances and lawsuits, which are often settled quietly rather than litigated, and such secret outcomes, in turn encourage other Bandits. Co-workers also condone Banditry by “looking the other way” even though the Bandit is stealing from them, too. Soft Theory X also comes into play when supervisors don’t confront Bandits because of a fear of being labeled a hypocrite (“i.e., “Don’t get on my case, you don’t do research either.”)

Time Bandits: Not Y Enough

Rather than see Time Bandits occurring because organizations are not X enough, we argue that McGregor’s other set of assumptions – Theory Y – offers a better explanation and more expansive set of remedies for the problem of Time Banditry. As noted in Table 1, Theory Y assumptions include the idea that external control mechanisms and the fear of punishment do not result in the achievement of goals to which individuals have no commitment. Rather, McGregor argues, achievement and commitment result when the individual’s needs and goals are integrated with the organization’s goals. When integration occurs, individuals will self-direct and self control in the pursuit of both individual and organizational goals.

As we considered McGregor’s emphasis on goals and the problem of Time Bandits in universities, three observations regarding university work environments shed light on this discussion. First, most university reward systems fail to acknowledge the fact that universities, in fact, pursue multiple (sometimes conflicting) goals. Second, universities continue to cling to a narrow organizing principle that holds all faculty for their entire career responsible for achieving the university’s research goals. Third, most universities have no real mechanism for encouraging the integration of individual needs and goals with those of the organization.

Multiple Goals, One Path

Ketchen, et. al. would be the first to agree that universities pursue many goals in addition to research -- teaching, student affairs, community service, public outreach, development, community relations, public service -- yet most merit pay systems for faculty weight the achievement of research goals much more heavily than contribution to other university goals. Most merit pay systems at universities do not allow faculty who help achieve some of the universities other goals to share in the rewards as fully as those who help achieve the research goals. Thus, while every university mission statement highlights its multiple goals, the reward systems compensate faculty for a much more narrow set of organizational goals. Perhaps tenured faculty who develop interests beyond research that contribute to other organizational goals should be rewarded in entirely different ways. Take, for example, the tenured faculty member with an entrepreneurial spirit who develops a new academic program for the college of business, one that is highly desired by the business community. Rather than publish scholarly articles, this person envisions a new program, works with the business community and other faculty to design it, organizes it, and recruits students to a program that becomes successful. Why not compensate the faculty member with a percentage of the revenues from the new program and remove him/her from the merit pool that the university otherwise uses to compensate research faculty? By increasing the incentives (and not just monetary incentives) for tenured faculty members to help the university achieve some of its goals beyond research, time banditry is less likely.

Same Old, Same Old

Most universities organize and allocate work today the same way they did it decades ago. That is, even though some tenured faculty members stop doing research, most universities claim to hold all faculty members responsible for some level of research activity. Moreover, money seems to be the only reward that gets any attention, even though McGregor and many others have demonstrated that merit pay systems don't work very well in universities for two reasons. First, evaluating faculty "work," particularly research, is a tricky business. Most universities invest considerable effort in trying to objectify performance standards which turn out to be, at best, vague approximations of true value. McGregor (1960) notes that the performance appraisal process applied to many kinds of academic and administrative "work" fail because, no matter what anyone claims, in the end it is a subjective judgment, which is not necessarily a bad thing, but pretending it is not subjective invites contempt. Moreover, the administrative, informative, and motivational goals of performance review are not satisfied because generally only gross performance distinctions are possible (i.e., outstanding-satisfactory-unsatisfactory), and those being reviewed are generally not receptive to "constructive" feedback (McGregor, 1960). The second reason research-oriented merit pay systems in universities don't work is because the amount of money being doled out is not enough to be motivating, and everyone ends up arguing about nickels and dimes.

Instead of claiming that all faculty are responsible for research throughout their careers, while reality suggests that some tenured faculty opt out of research, why not re-think how we organize work in universities? Rather than trying to connect research performance and small amounts of money, it may make more sense to broaden our view of what it means to be a faculty member. Certainly research performance is an important goal, but perhaps it should only be the primary goal for untenured faculty, and associate and full professors who are scholarly leaders and who maintain a strong interest in research. It is possible to envision alternate post-tenure faculty roles for some faculty that would further the university's complex mission and at the same time tap into their changing interests.

A variable workload policy for tenured faculty is one way to achieve alternate roles for faculty, but we envision a policy that is broader, and for reasons different from those given by Ketchen et. al. (2008). They advocate a system that is as narrow and research-biased as the system it is supposed to replace. Ketchen et. al. (2008) focus narrowly on trade-offs between research and teaching, and argue that increasing people's teaching load can allow faculty to "contribute in a meaningful way....it also lightens the load of those whose primary contribution is research....and reduces the potential for confrontation, grievance, and lawsuits by establishing clear, measurable standards for work outputs." (2008, p. 148). In a narrowly defined, research-centric system, more teaching will be rightly seen as a punishment. In contrast, we'd advocate conceptualizing a broader, richer world for faculty work, one that offers opportunities beyond a bogus trade-off between research and teaching.

Cold Place to Grow Old

Years ago, a senior colleague remarked "The university is a cold place to grow old." What he meant was that universities tend to use up and discard their human capital. The institution tends to view human capital, particularly

faculty, as something separate, something that is not integral to its mission: the role is integral, but the people are not, which is a classic Theory X formulation. In contrast, Theory Y is based on a principle of integration, not separateness, which “demands that the organization’s and the individual’s needs be recognized” (1960, p. 51). Further, McGregor argues that if organizations and individuals do not achieve integration, the organization will suffer. Time Banditry is an expression of organizational suffering. Rather than see Banditry as the result of not enough control mechanisms, we suggest that time banditry is the result of the lack of integration between tenured faculty members’ needs and the university’s needs.

Imagine a university that encouraged integration. Perhaps tenured faculty members, later in their careers, could identify the form of integration they wanted to pursue and then enter into a contract with the university to be re-evaluated in 3-5 year increments. Imagine a reward system that awarded successful integration. Perhaps department chairs could actually play the role of manager-enabler rather than administrator-cop and their rewards could, in part, be based on departmental faculty achieving successful integration.. Imagine a university with no more Time Bandits.

CONCLUDING THOUGHTS

A Theory X approach to Time Banditry allows the misbehavior of a few to limit the opportunities for the many. The Theory X approach recommends dealing with Time Bandits with more rules and procedures, more surveillance, more penalties, more distance between the system and all its members. A Theory X system does not trust its own members to act like responsible adults. But such a system likely will produce different, and perhaps more virulent, forms of insurgency because human ingenuity will not be denied, and so instead of finding fulfillment in meeting organizational goals, employees will find fulfillment in defeating oppressive processes.

Theory Y approaches to managing do not focus on command and control, but rather focus on building trusting, respectful relationships among the members of the system (McGregor, 1960, p. 132). Theory Y approaches seek to create an integration of individual and institutional needs, and when that happens the individuals can be trusted to self-direct their behavior in ways that satisfy both. McGregor cautions that perfect integration will not be possible (p. 55), but that a preoccupation with building authentic relationships will produce greater benefits than a preoccupation with constraining human behavior. More than anything, Theory Y allows systems to believe that different, and better, outcomes are possible if we can only bring ourselves to adopt different assumptions about the “way things are.”

As a final comment we’d like to note that, like many Business faculty, we thought we “knew” about McGregor’s Theory X and Theory Y. It is, after all, mentioned in most Management and Organizational Behavior text books, so in addition to “knowing” about it, we have also “taught” it. In preparing for this paper we got a copy of *The Human Side of Enterprise* from the University library. It hadn’t been checked out in 10 years. We were immediately struck by the quality of McGregor’s writing and the accessibility of his ideas. He presents a rich, smart narrative, and quickly we realized the cursory presentations of his work that we were familiar with do not do it justice. His insights are as fresh and persuasive today as they were almost 50 years ago. It’s a great book.

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THE CORRELATION OF DIVERGENCE AND COLLEGE SUCCESS

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ABSTRACT

A survey was conducted at a four-year public liberal arts institution in the southeastern United States, with a population of approximately 4,000 students. A sample of 204 participants was surveyed to investigate correlations between levels of divergence (students who resist the traditional learning environments) and other variables (i.e. gender, classification, grade point average (GPA), parental influence, self-efficacy, influence on future generations, and perceived success at various grade levels). Preliminary analysis of results using a matrix of Pearson inter-correlations indicates that family influence is significant in determining a student's willingness to attend and complete college, and performance throughout school years is predictive of college performance. Additionally, results indicate that divergence in males is a negative factor in achievement. The implications are strong that the aforementioned variables significantly affect a student's success in college.

INTRODUCTION

This study was conducted at a small, rural, Southeastern university where a large majority of students are first-generation college students. Prior research indicates that there are often a number of factors that determine first-generation college student success (Meetze, 2008). This study sought to find correlations between levels of divergence and first-generation college student success. Taylor (2007) defines divergent learners as those learners who "resist the performance and suppositions of the traditional realm."

BODY OF THE MANUSCRIPT

Data Collection

Surveys were administered as On-site Paper-and-Pencil Surveys (Fink and Kosecoff, 1998) to a stratified random sample of 204 undergraduate students. The survey contained demographic information that included gender, class rank, grade point average, major, and first-generation college student status. Additionally, there were Likert scale items that allowed participants to respond with their perceptions of their performance in grades K-12, the influence of their parents on their success, as well as how they will influence their children's college success. Further, participants were asked to fill out the Taylor Sorting Protocol, a test that yields a score as to the participant's level of divergence.

Data Analysis and Results

Data were analyzed using a Pearson Correlation Matrix. Significant correlations were found to exist amongst several variables. A correlation coefficient of .79 exists between the college student's own impression of the importance of college and the level of importance they will express to their own children regarding college. There is also indication that school performance throughout the K-12 school years is predictive of college performance. Correlation coefficients ranged from .65 at the K-5 level to a high of .72 for grade nine.

A point biserial coefficient further revealed that there is a level of significance of $p < .002$ between gender and divergence, with males tending to be more divergent than females. Additionally, a level of significance of $p < .001$ exists between gender and grade point average, with males having a lower grade point average.

Implications

The implications are clear that talking to students about college does have an effect on the student's impression that a college education is important, and is thus transferred to future generations. Further, although K-12 performance is a predictor of college performance across the board, the middle and secondary years are the most strongly predictive of college performance. The importance of shaping the behaviors and habits of divergent learners in late elementary school to prepare them for the traditional realm of education is necessary for their success. Programs such as "Freshmen Academy" are other ways in which future college success can be facilitated at pivotal times in a K-12 student's career. Single gender programs may be yet another avenue for accommodating the needs of various learners, particularly males.

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ACCOUNTING FACULTY UTILIZATION OF WEB-BASED RESOURCES TO ENHANCE IN-CLASS INSTRUCTION

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From its origin in the 1970's as a rudimentary email system, the World Wide Web (the "internet") has grown from a technological novelty to a valuable resource. Email is now the predominant means of communication and the internet, while serving our recreational needs, is a perpetual marketing tool and indispensable management/research instrument utilized in almost all business pursuits. It is difficult to envision a world without internet and hard to imagine awakening without email traffic.

The accounting profession, in particular, has been very proactive in harnessing the power of the internet. Professional accounting organizations, such as the Institute of Management Accountants (IMA) and the Institute of Internal Auditors (IIA), as well as state boards of accountancy have developed extensive websites that provide their membership access to a wide range of products and services, including web-based continuing education courses. Most recently, the American Institute of Certified Public Accountants (AICPA) has transformed the Uniform CPA Exam from a semi-annual pencil-and-paper exam to a year-round computer-based test. The computer-based delivery facilitates critical skills testing via case study simulations, which require the candidate to utilize the internet to access germane research tools and authoritative literature.

Likewise, it is implicitly presumed that the academic communities, especially at the university level (the "breeding ground" for the embryonic professional), have embraced the internet as a critical pedagogical tool. With few exceptions American colleges and universities have invested heavily to upgrade their computer systems, local area networks, and internet links. Academics from a diverse array of disciplines have utilized the internet in various modes as an instructional tool to enhance their students' in-class learning and overall educational experience.

The broad-spectrum of our study is to examine whether the premise of web-based resource utilization holds true for the accounting discipline within academe. Given the copious utilization by the accounting profession, it is expected that instruction within the accounting classroom environment relies heavily on the internet (web-based resources). It is anticipated that accounting, similar to other academic disciplines, advances its pedagogy via web-based enhancements that include: course syllabi, lecture notes, PowerPoint slides, assignments/quizzes/exams, and assignment/quiz/exam solutions as well as links to related web sites, cases, research methods, and additional reading materials. Generally, this is accomplished by individual faculty members through the design of personal home pages. Incrementally, faculty members could utilize learning management systems courseware such as WebCT or Blackboard. Another, but far less common application of the internet is the development of entire web-based courses, even encompassing entire degree programs.

While the utility of the internet to enhance the learning experience has been embraced in many academic quarters, there is scant empirical evidence that indicates whether or not accounting faculty have followed suit. Consequently, our study examines the extent to which accounting faculty use web-based resources to augment classroom instruction. Moreover, we explore the effects of two institutional and two individual factors upon accounting faculty use of web-based resources to enhance face-to-face instructional activities.

To document the extent to which accounting faculty have embraced the internet to enhance in-class instruction, we examine the internet use of 3,753 tenured and tenure-track faculty members at 413 accounting programs, within business colleges accredited by the Association to Advance Collegiate Schools of Business (AACSB). We employ logistic regression to analyze the influence of the institutional factors of accounting accreditation and the existence of an accounting Ph.D. program on internet use by accounting academics toward enhancing pedagogy. Incrementally, our logistic model analyzes (controls for) academic rank and gender (individual factors).

The structure of our complete model that considers the extent to which accounting faculty, at AACSB accredited business colleges, integrate web-based resources in their courses is specified as the probability function:

$$\text{Prob(Internet_Use)} = F(\beta_1 * \text{Accreditation} + \beta_2 * \text{Doctoral} + \beta_3 * \text{Rank} + \beta_4 * \text{Gender})$$

Our findings indicate that a relatively insignificant number of accounting faculty take advantage of the power of the internet to enhance their classroom activities. Less than sixteen percent, of accounting faculty, use the internet as an instructional resource. For this internet “usage” group, the results indicate a greater likelihood of affiliation with an institution that has a separately accredited accounting program. Additionally, we find that the presence of an accounting doctoral program, as well as the interactions of accreditation with the ranks of assistant and full professors, in addition to the female gender, are associated with an increase in the *odds* that faculty integrate the internet in their courses.

While a rather low percentage of “total” accounting faculty are using web-based resources to augment classroom instruction, we do find statistically significant inferences that accounting accreditation is a key differentiator of internet usage versus non-use. Since accounting accreditation signifies an increase in the likelihood that faculty utilize the internet to supplement pedagogy, we probe within this influential “thread” to determine “why”. The presence of an accounting doctoral program, as well as the interactions of accreditation with the ranks of assistant and full professors are associated with an increase in the *odds* that faculty integrate the internet in their courses. Likewise, the interaction of accreditation with females is significantly associated with an increase in the utilization of the internet as an instructional resource by accounting academics. There are further implications that female assistant professors at colleges carrying separate accounting accreditation along with those that house an accounting doctoral program are considerably more likely to integrate the internet within their pedagogy. Alternatively, within the sub-sample of faculty members affiliated with a college of business carrying business-only (i.e. not separate accounting) accreditation, the presence of an accounting doctoral program reduces the likelihood that faculty will integrate web-based resources into pedagogy; males as well as assistant professors are particularly less likely to integrate the internet.

Considering our findings, we speculate that faculty are unwilling to expend a scarce resource (time) on activities (integrating the internet into the classroom) that have little or no economic/professional payoff, especially given the reward (promotion) system at many colleges being weighted toward the research component. This tends to offer an explanation as to the relative paucity of internet integration by accounting faculty. As for the strong positive significance of separate accounting program accreditation as a determining factor of internet integration, the AACSB guidelines for accounting program accreditation provide some elucidation. The AACSB (2005) states that the separate accreditation process is intended to promote high quality innovative accounting education programs where, in considering the quality of accounting programs, such factors as the design and effectiveness of the curriculum and the resources needed and used for educational purposes are critical. Thus, if accounting accredited programs are more innovative (e.g., integrating the internet into the classroom) and have more resources to promote such innovation (e.g., release time and grants) than accounting programs that don’t have separate accounting accreditation, we would expect accreditation to have a positive effect on internet use. Moreover, the positive influence of an accounting doctoral program coupled with separate accreditation can in all likelihood be attributed to the help given by the doctoral students in enhancing pedagogy via web-based resources. The overall positive association of the rank of assistant professor is seemingly explained by their “newness” to academe, which likely correlates with a greater comfort level in the utilization technology to enhance their pedagogy.

It is notable that this research is exploratory. There are consequently several limitations of this study, which, to strike an optimistic chord, present opportunities to extend this line of research. For instance, we did not categorize faculty according to areas of teaching interest. Research can explore whether different teaching specializations impact internet utilization for pedagogical purposes. For example, faculty teaching AIS (Accounting Information Systems) are no doubt more likely to use the internet for classroom purposes, but what about financial accounting relative to managerial compared with tax. More fundamental to this line of research, is the belief that there is a correlation between postings on faculty webpage’s and the integration of the internet to enhance pedagogy; however, potential disconnects could modify our results. For instance, faculty who integrate the internet, but reside at colleges without a webmaster, were probably not recorded as a “positive” observation during our data collection. Accordingly, future research can utilize survey instruments to further assess accounting faculty utilization of web-based resources to enhance in-class instruction.

ORGANIZATIONAL CORRELATES OF EMPOWERMENT: AN EXPLORATORY STUDY

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ABSTRACT

This study examined the relationship between selected organizational and job variables and empowerment. Data from 103 chemical plant employees indicated that there was a negative relationship between Role Conflict and Meaning. Ability Utilization and Job Influence had a positive relationship with Impact. Self-determination had a positive relationship with Job Influence and a negative relationship with Role Ambiguity. Finally, Role Ambiguity had a negative relationship with Competence. The implications for further research are discussed.

INTRODUCTION

Global competition and rapid technological change has required that organizations make substantial changes to the way they manage their employees. They have to rethink the fundamental ways in the ways they operate and change the culture of the organization to be more competitive, flexible and adaptive to the constantly changing environment. Employee empowerment is one such change initiative that organizations have focused on, particularly as it is considered to be critical to organization innovation (Spreitzer, 1995) and one of the main ingredients of organization effectiveness (Conger and Kanungo, 1988; Kanter, 1989).

Scholars have defined empowerment in two distinct ways. As a relational construct, empowerment pertains to one's power and control over co-workers, and to the transference of such power and control from management to an employee with less decision-making authority (Koberg, Boss, Senjem, & Goodman, 1999). With respect to employee perception, however, investigators have more broadly defined empowerment, holding that the construct constitutes cognitions needed for employees to consider themselves empowered (Spreitzer, Kizilos, & Nason, 1997).

Currently, many researchers accept notion (Thomas & Velthouse, 1990) that empowerment constitutes intrinsic task motivation and manifests through four cognitions: sense of meaning, competence, self-determination, and impact. Sense of meaning indicates a congruency between one's personal values, beliefs, and behaviors and those required by one's work role (Brief & Nord, 1990). In other words the value of the task or job ranks high in the individual's values system (Liden, Wayne & Sparrowe, 2000). Competence, or self-efficacy, constitutes a belief that one has the abilities, confidence, and skills to perform one's job duties well (Gist, 1987). Self-determination involves the belief that one autonomously decides how to carry out one's work (Greenberger & Strasser, 1991). Impact refers to one's belief that one's completed work tasks directly affect organizational outcomes (Ashforth, 1989). In other words the individual believes that his or her job behavior makes a difference to organizational outcomes (Thomas & Velthouse, 1990). Spreitzer et al. (1997) found that all four empowerment cognitions proved necessary for the intended effects of empowerment to occur. Researchers have validated the four dimensions in service organizations (Kolberg, Boss, Senjem, & Goodman, 1999; Liden, Wayne, & Sparrowe, 2000) and in supply companies (Arnold, Arad, Rhoades, & Drasgow, 2000).

Spreitzer (1996) found a number of antecedents of empowerment including an individual's self-esteem, organizational support, access to information, participation, and a work unit with little role ambiguity. Gomez and Rosen (2001) for example found that the quality of leader-member relations mediates the linkage between managerial trust and employee empowerment. Several personality and demographic characteristics are also believed to influence feelings of empowerment including age, gender, ethnicity, self-efficacy, motivational needs and locus of control (Koberg, Boss, Senjem & Goldman, 1999; and Spreitzer, 1996). In addition empowerment perceptions are also associated with increased job satisfaction, commitment, work productivity/effectiveness, as well as a decreased propensity to leave the organization (Koberg, Boss, Senjem & Goodman, 1999; Siebert, Silver & Randolph 2004; Laschinger, Finegan & Shannan, 2001).

While important first steps have been made in establishing the validity of the empowerment construct, and enhancing our understanding of the individual, job and organizational variables that contribute to feelings of empowerment, additional studies in different settings need to be examined to add to our knowledge of this important construct. This paper therefore builds on and extends the emerging literature in empowerment by examining the

relationship between empowerment and selected job and organizational variables. In particular this paper will examine the relationship between empowerment and job influence, ability utilization, and organization commitment. The following hypotheses will be examined:

Hypothesis 1: Ability utilization will have a positive relationship with empowerment.

If an individual is to experience a sense of competence and feel confident about his/her skills, one has to be given the opportunity to use these skills and abilities. Hence there must be opportunities available in the work environment so that the individual can develop the confidence and competence needed to successfully carry out job assignments.

Hypothesis 2: Job influence will have a positive relationship with empowerment.

If one is to experience a sense of empowerment and a sense of control over the operational outcomes of one's work unit then the individual must be given opportunities to utilize his/her skills in performing the job as well as feel that one can have an influence not only over one's job but also over the operational outcomes of the work unit. Also, one has to have autonomy in performing the job as well as influence in determining work methods to be used, resources needed, pace of work and expected standards of product quality.

Hypotheses 3: Organization Commitment will have a positive relationship with empowerment.

If employees have a sense of empowerment, it is believed that they feel that they are making an impact on the organization. As a result of this experience there is a greater likelihood that they will see congruence between their goals and the goals of the organization. As a result there will be a higher level of organization commitment.

METHOD

For the research samples, data were collected on site from employees in a chemical plant in the southeastern region of the United States. The plant was in the process of converting to self-managed work teams. The survey was completed by 103 employees for a response rate of 95 percent. The employees completed the surveys before the start of their respective shift, hence the high response rate.

Empowerment was measured by a 12-item scale developed by Spreitzer (1995). Alpha reliability was .89. Job influence was measured by a 4-item scale developed by the first author. Alpha reliability was .81. Ability utilization was measured by a 4 item scale developed by the first author. Alpha reliability was .87. Organization Commitment was measured by a scale developed by Mowday, Steers and Porter (1979). Coefficient alpha was .80.

RESULTS

The hypotheses were tested using hierarchical regressions. Selected organization and job variables were regressed on empowerment, the independent variable.

The results of the hierarchical regression are presented in Table 1. The three hypotheses were all supported. Empowerment was significantly related to ability utilization ($\beta = .74, p < .00$) and job influence ($\beta = -.16, p < .00$). Organization commitment was also positively related to empowerment ($\beta = .14, p < .00$).

Table 1. *Hierarchical Regression Results*

<u>Empowerment</u>		
<u>Variables</u>	<u>Beta</u>	<u>P</u>
Ability Utilization	.74	.00
Job Influence	.16	.00
Organizational Commitment	.14	.00

DISCUSSION

This study examined the association of job and organizational variables with employee empowerment. There was a positive correlation between empowerment and ability utilization, job influence, and organization commitment; and role ambiguity significantly predicted competence and self-determination.

Significance of the Research

All the hypotheses were supported in this study; however, a close examination illuminates several interesting relationships between employee empowerment and certain organizational variables.

First, ability utilization was positively related to empowerment suggesting that employees' use of abilities toward personally meaningful avenues increases empowerment most significantly. Per our results, it may behoove organizations to formulate work teams whose assignments allow team members to use abilities to benefit their organizations in personally meaningful ways. In doing so, organizations may enhance employees' perceptions of empowerment by affording them such opportunities.

Secondly, this study illustrates the importance of job influence in enhancing feelings of empowerment. The more autonomy employees are given to make decisions relevant to their job, as well opportunities to make recommendations on improving operational efficiency and product quality, the more job influence they will experience and the more empowered they will become.

Thirdly, as a result of using their abilities and experiencing higher levels of job influence, their perception of empowerment is enhanced, leading to increased organization commitment. When employees experience empowerment and see the impact their jobs are having on the organization they identify more with the goals of the organization and as a result are more committed to it.

Limitations and Future Directions

We recognize the obvious limitation of data collection in only a Southeastern United States chemical plant to the applicability of our results. Local and regional attitudes toward work may not reflect those of employees in other parts of the United States or of the world. Furthermore, our sample's generational makeup may have engendered bias, as we did not measure employees' ages or job tenures. Future research should assess the link between job and organizational variables and empowerment in an organization with multiple office locations throughout the United States and/or in other nations, minimizing the effects of location confounds.

A second limitation arises from the time of the survey's implementation. Since the chemical plant had only recently begun to shift its management structure to self-managed work teams, employees may not have had adequate time to experience the salutary effects of empowerment, showing the levels of empowerment still resulting from their previous management structure. Future research designs should assess empowerment in self-managed work teams multiple times over the course of a team's existence, allowing for analysis of changes in empowerment resulting from new management structure.

In a similar vein, research should also consider the effects of social interactions with team members on empowerment. Direct observation of team member relations and assessment of empowerment dimensions may allow scholars to pinpoint exact behaviors which increase or decrease employees' feelings of empowerment. Ultimately, we hope that our findings help provide intuitively actionable insights to organizations seeking to enhance and sustain their employees' effectiveness and confidence in ever-changing business environments.

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WIRELESS SECURITY AWARENESS IN EDUCATION

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ABSTRACT

Unprecedented growth in mobile communications brings new security challenges. Rapidly growing networks of end-users provides increased incentives for hacking ("cracking") to grow into big business with classic business models applied. Spammers' business model is evolving: broader distribution of botnets/zombies; higher profits from increasingly sophisticated phishing and stock scams; higher volume of email abuse; expansion to new markets including Blogs, IM, social networking, and mobile communication. Massive increases in bandwidth from data services further complicate wireless intrusion detection systems. Wireless adaptors and components such as wireless monitors bring additional security dimension. The wireless defense solutions have also elevated in sophistication from protocol filtering and internet gateways to fingerprinting, content analysis and distributed network intelligence. Response from Academic community ranges from information security awareness programs to advanced studies. The future of wireless communication with its offenses and defenses is brighter than ever, leading some to call 2008 the year of wireless.

INTRODUCTION

Universities are trying to bring a new class of freshmen each year along with holding on to a high percentage of their current students in order to satisfy various financial and academic objectives. This has become a daunting challenge because today's students are quite different from earlier generations with their learning style vastly shaped by the use of technology. To maintain their competitive advantage with other institutions of higher education, they are introducing Wireless Local Area Networks (WLAN) as the favored method of delivering access to Internet, e-mail, voice over IP (VoIP), and video conferencing applications (). Thus, wireless connectivity is an efficient way to leverage universities network systems and deliver a better and much more expanded user service. However, inadequacies in wireless (is outdated) performance and security make campus WLANs an impressive but risky undertaking. Furthermore, wireless network is a preferred medium used by hackers to penetrate various targets: the wired networks, wireless users, and wireless network infrastructure. In this paper, we discuss the security training on campuses associated with wireless technology.

Vulnerabilities of Infrastructure Security

IBM predicts that by the end of 2008 the number of mobile phone users will exceed the land-line phones. According to this projection the number of mobile Internet users worldwide should reach 1 billion in 2008, a 200% increase above the number in 2006 (Hamblen, 2008). Several attack sites are routinely using an Internet Explorer plug-in that is extensively used by Facebook, MySpace, and other social networking sites to steal members' credentials and probe their wired and wireless computers for vulnerabilities in Uploader, Apple Inc.'s QuickTime, Windows and Yahoo Music Jukebox (Keizer, 2008). Worldwide WLAN equipment sale is predicted to reach \$4.6 billion in 2010 as WLAN demonstrates growth across nearly all product categories throughout all regions (Infonetics Research, 2008). It can be argued that WLAN is becoming a replacement for wireless networks and it is no longer can be viewed as an alternative.

A recent survey conducted by Accenture (Timmer, 2008) indicates that broadband users under 35 are most likely to ignore wireless security. Any university linked to the internet is open to cyber attacks that may come from any other computer connected to the internet. This demonstrates that the perimeter defense strategy for cyber security is not sufficient (Goles, White, and Dietrich, 2005).

Risk to Universities Data

The primary risk is that faculty, students, and staff using the campus wireless network may cause a security breach for university data. According to the Privacy Rights Clearinghouse (2008), more than 236 million records of U.S. residents containing personal data have been exposed due to security breaches since Jan 2005. Another way that wireless systems can cause threats to universities is that personal computers can be used for attacking other networks (Culnan, M., Foxman, Ellen, and Ray, A., 2008). Although such an attack may not directly affect the university's networks, it is possible that it disable other mission critical resources such as voice communication or energy distribution systems.

Information Security Risk Management

In the current distributed computing environment, security compromises beyond organizational boundaries occur quite often. Thus, it is imperative that universities should include training and awareness programs for the students, faculty, and staff as a component of their risk management program. A successful risk management program also includes (Kousky, 2008):

- Creating a IT security risk management program
- A systemwide course
- For delivery to all CSU faculty, staff, affiliates, auxiliary employees and third-party vendors/contractors hired by the CSU. Not intended for student use.
- The average length should not exceed 30 minutes.
- Interactive modular course structure; randomized assessments
- SCORM and AICC compliant.
- Ensuring compliance with existing laws and regulations
- Obtaining the needed resources, including financial resources
- Implementing proper improvement recommendations as needed
- Developing controls in support of the risk management program
- Determining the costs and benefits of risk mitigation strategies
- Developing risk-based security policies, plans, and procedures
- Assessing the effectiveness of the risk management program and modifying it when appropriate
- Developing options for raising awareness within the campus community

Risk Management awareness has the following three objectives (Hillson, 2008):

1. To create awareness of the purpose of risk management
2. To develop the ability to understand and use the outputs of the risk process
3. To result in improved decision-making under conditions of uncertainty

In the following part we discuss educational and training security projects addressing Risk Management awareness in Information Security by the California State University campuses.

Implications for Universities

It is vital for Risk Management to become a part of the organization's culture. Therefore, teaching information security on campuses should include both traditional courses for students and information security awareness training for students, faculty and staff. Campus community awareness can be raised by providing videos, newsletters, posters, postcards, and stickers. The main objective is to focus individual's attention so that learning will be incorporated into conscious decision-making. Training can be through formal instructions by offering classes, Web-based training, and hands-on practice. The goal is to produce necessary security skills in functional areas other than IT security (Culnan, M., Foxman, Ellen, and Ray, A., 2008).

Each of the California State University's campuses is responsible for administering their information security courses; these courses are significantly vary in content and depth of the material and not all them have been developed to represent sufficiently the risks arising from the wireless information security vulnerabilities. Meanwhile, proliferating social networks operating via wireless devices pose ever increasing danger to privacy of students who often do not fully recognize the consequences of their wireless networking. More guidance in information security curriculum development is needed particularly on ethnically diverse campuses.

In July 2003 Mt. San Antonio College and Cal Poly Pomona jointly received a three-year \$900,000 National Science Foundation (NSF) grant to develop new courses and degree programs in information security. The project named the Regional Information Systems Security Center (2008) and the grant helped forge a partnership between the two institutions. Following the first RISSC project grant, the second three-year \$900,000 grant that included Cal State Los Angeles, Cal State Northridge, and Long Beach City College has been awarded. This second RISSC consortium will develop educational pathways in information security in Los Angeles County and the surrounding area. All of the participating institutions are Hispanic-Serving Institutions, and all have an extensive student ethnic representation. This will guarantee that RISSC will provide information security education and training for traditionally underrepresented students. RISSC is addressing information security needs in the following areas:

- (1) Workforce Development
- (2) Curriculum Development, Revision, and Dissemination
- (3) Faculty Professional Development
- (4) Outreach and Partnership Development

Another new approach at universities is implementation of security awareness programs for the students, faculty, and staff. Thus, the California State University (2008) system is planning to offer a Security Awareness Training course that can be hosted in a web-based system. Faculty research is also directed toward specific aspects of wireless security awareness on campuses.

Two important considerations for maintaining public awareness in wireless security at the current, up-to-date level are that the training needs to be repetitive and that the content of training have to be updated frequently based on the latest technological innovations employed by all three – the wireless technology developers, the hackers, and the defenders – the security analysts. Exposed vulnerabilities and other security issues are often found in practices, which may make the traditional sources of teaching like textbooks not sufficient. The methods and sources for teaching public wireless security awareness on campuses are analogous with those for professional training in business world. External communication with professionals, as well as exchange of information with other organizations should be a part of information security efforts on campuses.

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NEW PRODUCT DEVELOPMENT GUIDELINES FOR AN ENTREPRENEUR

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ABSTRACT

Products have a finite life span and are ultimately replaced by better products. Successful new product development is essential for the survival and success of a business organization. Entrepreneurs do more than just manage an organization – they take risks and create new opportunities through innovation. However, new product failure could be quite expensive for an entrepreneur. Therefore, successful new product development would call for a careful approach that would minimize the factors that would lead to a failure and maximize the factors that would lead to a success in new product development. Numerous books and articles have been published on the subject of new product development. We present guidelines for successful new product development by incorporating all aspects of new product development including R & D as well as marketing research. These guidelines are illustrated with examples of new product successes and failures.

INTRODUCTION

An entrepreneur would benefit by considering the various factors involved in new product development like the nature of an innovation, the new product name, market segmentation, market segment growth rate, product differentiation, product positioning, budgeting, marketing mix decisions, appropriate research design, test marketing, proper interpretation and use of market research and forecasting, product introduction timing, product/brand switching costs for the customer, increasing returns or network externalities associated with increasing use of the product. An entrepreneur may need to provide a sustained support of the new product design format or technology for several years in order to win not just the battles but also the war for the supremacy of a particular product design format or technology. Use of cross-functional teams and a global orientation is also be emphasized. Entrepreneurs may need to create gateways and specify the criteria for proceeding from one stage of product development to the next; they would have to learn useful lessons from previous product flops and apply these lessons to future new product development and launch efforts.

PROPER USE OF MARKET RESEARCH

A new product manager can benefit by considering the following important points while developing and introducing new products.

A. Type of Innovation

- What is the type of new product? Is it a line extension, new-to-the-company product, or a breakthrough product? Line extension is least risky while breakthrough products are most risky. Consumer research is most useful for line extension products.

B. Fundamental Customer Benefits/Differential Advantage: Beyond "Customer-Led"

- Is the product easy to use? Does it make the consumer more efficient? Does the product offer a differential advantage over competing products?
- Customers lack in foresight and therefore cannot visualize truly revolutionary products. Hal Sperlic, the father of minivan, who took the concept from Ford to Chrysler, noted that Ford decided not to develop a new minivan since no historical market segment existed for the product (Hamel and Prahalad, 1994).

- Is the product design appropriate? IBM PC won best product design award in 1997 for economizing space at user's desk at their homes. Now many new PCs follow this trend.

C. Customer Profile

- Is an appropriate customer profile developed in terms of demographics, psychographics, and use habits?

D. Marketing Mix Elements and Budget

- Is an appropriate marketing mix developed in terms of product features, price, distribution outlet, and promotion? Is the budget sufficient to successfully launch the product nationally or regionally?

E. Appropriate Research Design.

- Is the right research method chosen (in terms of communication and/or observation)? Can the consumers visualize the new product and realistically answer the questions. Is observation method more appropriate? Should a combination of the two methods be used?
- Ask the right questions or observe the right behavior? Focus on benefits offered to meet fundamental customer needs.
- In the 50's, Tappan asked people how their stoves could be improved. Respondents responded in terms of what they know could be changed. Old people said: "Move the dials to the front so that I can see them." Young people said: "Keep the dials to the rear so my children won't be able to touch them." Tappan responded by placing the dials between the burners. GE, on the other hand, asked people in focus groups what they hated most about their ranges. One person said: "Cleaning my oven." GE engineers responded with the self-cleaning oven. The dial changers agreed that a self-cleaning oven is what they always wanted because that is what they bought.

F. Appropriate Use of Market Segmentation and Product Differentiation

- In a survey, if half the people want a small car and the other half wants a large car then an incorrect response would be a compromise size i.e., a middle sized car that in fact nobody wanted. The best response would be to offer two different sizes of car, one for each segment.

G. Proper Use of Market Research Information

- Do not ignore research results? Regarding market research, Hendon (1994) notes that many firms provide at least a lip service to market research. They pay for the report, read it and then go ahead and do what they wanted to do in the first place. Sometimes this works but often it does not work. He notes that many marketing managers are not properly trained in market research techniques and often pay insufficient attention to research results. He suggests that it is dangerous to launch a new product or service without doing market research. The findings of research should not be ignored.
- Derive the right conclusions from research?
- The researcher should not be biased? Are the results going to be utilized only if they support a decision already taken by the management?
- Are sales and profit forecasts reasonable?

A CHECKLIST FOR A MORE SUCCESSFUL NPD AND LAUNCH

The following questions should be asked regarding NPD and launch.

A. Product Name and Type of Innovation

- Is the product name appropriate in all major countries of the world? For example, GM was unsuccessful in selling its Nova in Latin American countries. Research showed that in Spanish Nova means "It does not go." Similarly, Psion, a very popular PDA manufacturer jumped from Psion 3 to Psion 5. It did not use number 4 claiming that in China, its major market, the number 4 is considered unfortunate.
- Is the company or product name limited to too narrow a market? For example, NCR had difficulty convincing customers that it made good computers since its name suggested cash registers. Other examples are AT&T (telegraph is obsolete), KFC, and RCA.

- What is the type of new product? Is it a line extension, new-to-the-company product, or a breakthrough product? The risks of failure and the rewards of success vary for different types of innovations. Market research is most useful for line-extensions and new-to-the-company products since respondents are more knowledgeable about these products. Market research may be less useful for new-to-the-world or breakthrough products since respondents are often not able to realistically visualize the usefulness or possibilities of these products.

B. Introduction Timing

- Is the product introduced too early? Hastily introducing a poorly developed product would lead to a disaster. For example, Apple unveiled its PDA Newton on August 2, 1993. However, there were problems with its handwriting recognition software, the screen was too small, and \$699 price was too high for many people (*Business Week* 1993). Apple Computer's PDA Newton in 1993 was a product that offered too little, too early (Bayus, Jain, and Rao 1997).
- Is the product introduced (or licensed to others) too late? Correct timing of product introduction is essential. Delaying introduction of a potential winner could be a serious mistake. For example, DEC developed the fastest Alpha microprocessor (much faster than Intel's chips) in 1980s but delayed its introduction and refused to license it to other companies. Instead, DEC decided to focus on its successful minicomputers. This gave Intel time to improve its microprocessors for PCs and now Digital Equipment's fastest Alpha chip can not compete with Intel's less powerful chips that dominate the PC market. Alpha chips have captured less than two percent of the microprocessors market. DEC has however recently licensed its Alpha chips to two companies - Phillips and Samsung. Apple itself refused to license its operating system to others in the 1980s and therefore, gave Microsoft a chance to enhance its Windows operating system. Finally, Windows 3.0 caught up with Apple's operating system in terms of user-friendliness. Apple fell behind and now software developers pay less attention to Apple. Similarly, while RCA tested its VCR in its labs, Sony and Matsushita Electronics experimented in the marketplace. RCA finally licensed VHS format from Matsushita since it was late to the market and had no chance to successfully compete with others. Therefore, a potentially successful product launch assumes that the technology is reasonably well developed and the introduction timing is correct.
- Is a potential winner not launched? Being late to the market is one mistake; not introducing a potential winner is another. While Windows NT 5.0 is a very successful product for Microsoft, the developer originally worked at DEC where his project was discontinued so he went to Microsoft and continued his work there. Finally, DEC realized the importance of Windows NT and is now about as much enthusiastic about this product as Microsoft is as revealed by their ads and legal settlement regarding Windows NT. Similarly, Hal Sperlic, the father of minivan, took the concept from Ford to Chrysler where he successfully built the first minivan. Ford had decided not to develop a new minivan since no historical market segment existed for the product (Hamel and Prahalad, 1994). The mistake of not introducing a potential winner is more likely to occur for radically new products than for line extensions.

C. Fundamental Customer Benefits/Differential Advantage

- Does the product address a fundamental customer need that would make the customer more efficient or competitive?
- Does the product offer a differential advantage over competing products? Does the product offer some fundamental benefit to the customer in terms of, time saving, convenience, user friendliness, etc?

D. Product Design

- Is the product design appropriate? After observing thousands of households for PC use, IBM learned that unlike office desktop, people had limited desktop space at their homes. Using this information, it designed its 1997 Aptiva PC to economizing space at user's desk at their homes and won a best product design award in 1997. It should be noted, however, that while Apple Computers Corp. has won more design awards than any other company, it struggles to survive since it has made other mistakes as discussed elsewhere in this manuscript.

E. Customer Profile and Market Growth Rate

- Is an appropriate customer profile developed in terms of demographics, psychographics, and use habits?

F. Marketing Mix Elements and Budget

- Is an appropriate marketing mix developed in terms of product features, price, distribution outlets, and promotion?
- Is there a target price for the product? In 1979 Canon set itself a goal of selling personal copiers for \$1,000 each. They successfully met that goal and took a lot of market share away from Xerox. Swatch designed and manufactured watches at an average price of \$40 and became very successful by producing 25 million watches in 1992 (Hamel and Prahalad (1994). However, NeXT Computers Corp. offered a computer that had limited software and the price of \$10,000 was too high. This led to the failure of the PC hardware part of the company and NeXT was finally sold to Apple Computers Corp.
- Is the budget sufficient to successfully launch the product regionally or nationally?

G. Switching Costs.

- Does the product require extensive learning effort on part of the user?
- Is enough user-support offered in terms of technical help and service/warranty?
- Are there significant switching costs involved? For example, significant costs are involved in switching from QWERTY keyboard typing system to the superior Dvorak system (Betty & Warner Hutchinson 1985). However, it has become easier to switch between the recent versions of WordPerfect and MS Word for Windows operating system. If significant switching costs are involved then it is better to launch the product quickly and be first to the market.

H. Appropriate Research Design.

- Is the sample representative and of appropriate size?
- Is the right research method chosen (in terms of communication and/or observation)? Can the consumers visualize the new product and realistically answer the questions. Is observation method more appropriate? Should a combination of the two methods be used?
- Ask the right questions or observe the right behavior? Focus on benefits offered to meet fundamental customer needs. In the 50's, Tappan asked people how their stoves could be improved. Respondents answered in terms of what they knew could be changed. Old people said: "Move the dials to the front so that I can see them." Young people said: "Keep the dials to the rear so my children won't be able to touch them." Tappan responded by placing the dials between the burners. GE, on the other hand, asked people in focus groups what they hated most about their ranges. One person said: "Cleaning my oven." GE engineers responded with the self-cleaning oven. The dial changers agreed that a self-cleaning oven is what they always wanted because that is what they bought.

I. Market Segmentation, Product Differentiation, and Positioning

- Are appropriate market segments considered? In a survey, if half the people want a small car and the other half wants a large car then an incorrect response would be a compromise size i.e., a middle sized car that in fact nobody wants. The best response might be to offer two different sizes of cars, one for each segment.
- Is each target market segment profitable? Select only viable segments.
- Is the product correctly positioned relative to other products in peoples' perceptual space?

J. Proper Use of Market Research Information

- Do not ignore research results? It is dangerous to launch a new product or service without doing market research.
- Are managers properly trained in market research to derive the right conclusions? Many marketing managers are not properly trained in market research techniques and often pay insufficient attention to research results (Hendon 1994).
- The researcher should not be biased? Are the results going to be utilized only if they support a decision already taken by the management?
- Are sales and profit forecasts reasonable? Sales goals should not be unrealistic. Otherwise, many potentially successful products would be classified as losers (Power et al. 1993). Develop a pessimistic (P),

an optimistic (O), and a most likely forecast (M). Then combine these forecasts by weighing the most likely forecast (four times) more than the other forecasts to develop an average forecast. Average Sales Forecast = $(P+4M+O)/6$.

K. Increasing Returns/Network Externality

- Are there increasing returns associated with this product? Network externality or demand externality effects are important in markets like telephones, facsimiles, software, and voice mail. The benefit to a consumer increases with the number of users of the product when network externalities are present. One benefit of these products is standardization that makes it easier for people to exchange information involving use of these products. Some examples of products with network externalities are Remington's QWERTY typewriter keyboard and Microsoft's MS-DOS or Windows operating system. There are difficulties in correctly estimating demand potential for products with network externalities. In the late seventies, the most optimistic estimate for the size of the personal computer market in 1985 was \$2 billion. However, the actual size of the market exceeded \$25 billion. Similarly, experts grossly underestimated the market size for Intuit software for off-line home finance software in 1985. Currently, Intuit finance software has 7 million users for personal finance (Padmanabhan, Rajiv, and Srinivasan 1997). Increasing returns to scale for MS Windows can be attributed to the success of Microsoft Corp., and Bill Gates's riches (Aley 1996). It is better to quickly launch products with network externality or increasing returns since being first to the market provides a major advantage.

L. Battles Versus Wars (Sustained Support)

- Will there be a prolonged war before a standard is established for a market and the main winners are decided? While Univac introduced computers first, IBM won the battle for standards by introducing superior products and providing excellent service. Hamel and Prahalad (1994) discuss single-stage versus multistage competition. Ampex developed the first videotape recorder in 1959. RCA, Philips, Sony, and Matsushita (JVC) saw a videotape opportunity and each worked for two decades to produce a VCR for home use. Matsushita introduced several VCR models into the market before VHS. Sony also introduced U-matic for the home market but its size and high price made it unattractive for the home market. However, U-matic ultimately became a standards-setter in the professional VCR market. RCA, on the other hand, only experimented in the lab while Sony and Matsushita experimented in the marketplace. Sony captured 85% of the U.S. market by the end of 1976. However, JVC introduced a two-hour long tape machine compared with Sony's one hour. In addition, JVC licensed its technology to several other companies like Telfunken in Germany, Thomson in France, Thorn in Great Britain, and RCA and GE in the U.S. As a result, JVC models won the market battle from Sony's beta. Ampex ran out of resources and went out of business. In the battle of standards, the winner gets all the profits while the loser gets nothing or very little. If the battle is for establishing standards where network externalities are involved then having the right mix of technology and early launch are critical as is true for VHS standard as well as QWERTY keyboard system.
- Will the company be willing and able to support a potential winner long enough in the marketplace? Sometimes, a company could stay with its product and continually improve it till it becomes a winner. For example, P&G turned Pringles from a loser to a winner. Similarly, Apple Computers turned its PDA Newton from a loser to a winner by continuous improvement (*Fortune: Technology Buyers' Guide*, 1998). Other examples are Komatsu versus Caterpillar, Cannon versus Xerox, Harley Davidson versus Honda, and Toyota's Lexus versus European Luxury carmakers. Some line extensions are steady improvements over existing versions like Microsoft's Windows operation system or Intel's microprocessors. These line extensions steadily lead to greater profits for their companies.

M. Global Orientation

- Can the product be launched successfully in a global market with minor modifications? For example, Honda Motors has introduced a redesigned 1998 Honda Accord that is conceived for the world market and with some modifications could be introduced in most countries of the world.
- Can other elements of the Marketing Mix (price, promotion, and distribution) be readily adapted to the world market?

N. Break Down Walls

- Are cross-functional teams of R&D, marketing, and manufacturing utilized for new products. Cross-functional teams should produce better results than having each department work independently (Power, et al. 1993). The Japanese routinely use cross-functional teams for NPD to reduce the time required to develop and launch a new product.

O. Create Gateways

- Are gateways setup and criteria for proceeding from one stage of development to the next specified based on meeting specifics of customer acceptance and production viability? This would help in preventing a new product project from taking on an unrealistic momentum (Power, et al. 1993).

P. Do Your Post-Mortems

- Are there any useful lessons from previous product flops? Formally review why a product failed. Apply lessons learned from these post-mortems to future NPD and launch effort (Power, et al. 1993).

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PREFERENCE AGGREGATION FOR CONCEPT EVALUATION IN NEW PRODUCT DEVELOPMENT

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ABSTRACT

Products go through a product life cycle involving introduction, growth, maturity, and decline. Companies must have ongoing research and development activities to generate new products. To be successful in product innovation, many companies establish an ongoing interface between its marketing and R & D functions. New product development is critical for the long run survival of any organization that operates in a competitive environment. To develop new goods and services for their customers, marketers frequently develop concept statements and measure and aggregate customer preferences about these concept statements. There are many ways to collect and aggregate customer preferences in order to determine the group preference. Preference could be measured on an ordinal or a cardinal scale. This study will evaluate five methods of aggregating individual preferences using an ordinal measurement scale. These methods are: Condorcet, Copeland, Plurality, Approval Voting, and Borda. We will evaluate the extent to which these five techniques yield consistent or different results for the same data set.

In 1951, Kenneth Arrow published the General Impossibility Theorem based on four conditions that a "reasonable" aggregate choice rule should satisfy. We discuss Arrow's conditions and evaluate each of the five aggregation methods on Arrow's four conditions. We also discuss how utility is measured by each aggregation method and whether the Condorcet criterion is satisfied or not. In addition, the strengths and weaknesses of these five methods are discussed in the light of new product development.

INTRODUCTION

Customer satisfaction is a primary concern for most marketers who measure and aggregate consumer preferences for alternative product concepts in choosing the optimal product to develop and market (Kuehn and Day 1962). The marketer who more successfully meets customer needs is likely to have higher customer retention. Choice rules are used in choice simulators to predict market shares of various products. Green and Krieger (1988) note that very little has been written about the applicability of various types of buyer choice rules and sensitivity analyses. They state that much more research is needed on both comparing alternative buyer choice rules and in developing sensitivity procedures to evaluate market characteristics.

Gillett (1991) presents a data set and shows how two methods of aggregating individual preferences (plurality method and the Condorcet criterion) can be used in selecting the most preferred product concept among several candidates. He demonstrates that selection of a product concept based on the top-box of responses (plurality method) may lead to selecting the choice of the minority of respondents. This is the top-box paradox. Gillett suggests that the top-box paradox can be resolved by using the Condorcet criterion which shows the majority's choice. However, Gillett does not point out that even the Condorcet criterion may suffer from serious problems such as intransitivity which exists when the group prefers A over B, B over C, and C over A even when individual preferences are transitive.

This article uses Gillett's data set and illustrate the strengths and weaknesses of five different methods (including the two methods discussed by Gillett) of aggregating individual preferences. Each choice rule (aggregation method) is evaluated in terms of four conditions of "reasonableness." These conditions were first systematically considered by Arrow (1963) to search for the general type of preference aggregation method. Arrow's findings will also be mentioned in this article.

Arrow's General Impossibility Theorem

Arrow (1963) describes four conditions that a "reasonable" choice rule should satisfy. These four conditions are quite general and most people would consider these conditions as the minimum requirements of "reasonableness." Arrow proved that when there are three or more alternatives to be evaluated by three or more individuals then an aggregation method can not be found which would simultaneously satisfy all four of his conditions of "reasonableness." Therefore, attention has shifted to "workable" aggregation methods and an evaluation of the strengths and weaknesses of each aggregation method. Before Arrow's four conditions are presented it is useful to define the concept of individual preference ordering which will be utilized in one of the four conditions.

An ordering is reflexive, transitive, and complete. Reflexivity states that an alternative reflects itself i.e., $A=A$. This condition is so mild that it is a requirement of sanity. The other two conditions are considered as requirements of rationality. Preference ordering among three alternatives A, B and C is transitive wherever $A > B$ and $B > C$ then $A > C$. Similarly, if $A=B$ and $B=C$ then $A=C$. Preference ordering is complete whenever given two alternatives A and B, an individual either prefers A over B or B over A or is indifferent between the two. In other words completeness requires that an individual knows his mind.

Arrow's (1963) four choice rule conditions can be described as follows (Sen 1984):

Condition U: (Unrestricted domain): The domain of the collective choice rule must include all logically possible combinations of individual orderings.

Condition P: (Weak Pareto Principle or Unanimity): For any pair of A and B, if every individual prefers A to B then so does the group.

Condition I: (Independence of Irrelevant Alternatives): The group's choice between any two alternatives A and B depends only on the individuals' orderings of A and B.

Condition D: (Non-dictatorship): There is no individual i such that whenever i prefers A to B so does the group irrespective of the preference orderings of the other individuals of the group.

General Impossibility Theorem: Conditions U, P, I, and D are inconsistent for three or more alternatives and three or more individuals in the group.

The theorem asserts that every aggregation method (choice rule) violates one or more of the four conditions stated above for some sets of individual orderings. It is in this sense that these conditions are inconsistent. The theorem does not assert that every aggregation method will violate one or more of these conditions for every set of individual orderings. Therefore, an aggregation method may satisfy all four conditions for some sets of individual orderings but not for all sets. It is in this sense that the sensitivity of choice rules should be evaluated that is the probability with which a choice rule violates one or more conditions for various data sets.

It should be noted that if there are only two alternatives to be evaluated then the Condorcet method satisfies all four conditions for all data sets of individual orderings. Dubas and Strong (1992) demonstrate the applicability of the Arrow's theorem for three alternatives and three individuals. They also discuss some preference aggregation methods for three different data sets. We will now evaluate five aggregation methods in the light of Arrow's theorem to identify which conditions are violated by each method. It should be noted that condition P is satisfied by all five aggregation methods to be discussed in this article.

Choice Rules

Five different methods for determining group preference functions (GPF) will be evaluated in this article. These aggregation methods are: (1) the Condorcet, (2) the Copeland, (3) plurality, (4) approval voting, and (5) the Borda method (see Black 1958, and Fishburn 1973, 1986).

DISCUSSION

This article discusses the strengths and weaknesses of five methods of aggregating individual preferences. These collective choice rules are: the Condorcet method, the Copeland method, the plurality method, approval voting method, and the Borda method. If all individuals have identical preferences then all five methods will yield the same group preference function. However, as individual preferences diverge, each method may yield different group preference functions. Each of the methods suffers from one or more weaknesses. The Condorcet method uses pair-wise simple majority data and reveals the majority's choice. However, if the group's preference function is not transitive then it will yield varying results depending on the order of the pair-wise comparisons. The Copeland method, considers more information about the individual preferences than the Condorcet method and provides a transitive group preference function. The plurality method considers only first choice data and can choose an alternative as the group's choice which in fact may be the choice of a minority of individuals. Approval voting method evaluates alternatives in terms of whether they are acceptable or unacceptable. The Borda method uses rankings of all alternatives. Approval voting requires less information from the voter than the Borda or the Copeland method. Approval voting tends to perform poorly when the number of alternatives increases. Generally aggregation methods which use more information about the individual preferences tend to do better than those methods which require less information (Bordley 1983). Therefore, the Borda method may be the "best" of the five methods compared since it requires most information from the respondents. However, collecting rank ordered data becomes difficult as the number of alternatives increases. We recommend that a decision maker use more than one method of evaluation in obtaining group preference functions. In fact, these five methods give different perspectives about the nature of group preferences as they are derived from the individual preferences.

Future researchers should study the probability with which certain "defects" arise in applying the various aggregation methods i.e., the sensitivity of these rules to violate assumptions of "reasonableness." Other interesting questions include the impact of different parameters of the aggregation methods on the outcome. These parameters include the number of alternatives, the number of respondents, the degree of conflict among the preferences of different individuals, the shape of the preference functions, the number of individuals who are eligible to participate versus the number of individuals who actually participate in a particular study, etc.

Preference aggregation rules to determine group choice are also utilized by households and organizational buyers in the buying center, for example, Wilson, Lilien, and Wilson (1991) discuss various preference aggregation methods like plurality method, unanimity method (Weak Pareto Principle), majority rule (Condorcet criterion), and autocracy rule (dictatorship, i.e., violation of condition D) for organizational buyers.

Decision making in the public domain calls for equity considerations when evaluating where to locate a government facility such as a new hospital, a library, school, or even a garbage disposal site etc. All the aggregation methods considered so far do not measure the *intensity* of preferences. They ignore the situation where a minority *strongly* prefers one alternative over the second, while the majority *barely* prefers the second alternative over the first. All five methods discussed so far are inequity neutral since they are indifferent among the way benefits are distributed among individuals. Future researchers should evaluate group preference functions for the public domain where equity considerations are important.

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HOW CAN WEB 2.0 HELP ENTREPRENEURS IN STARTING A NEW BUSINESS?

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SUMMARY

Originally, the World Wide Web (WWW) was intended to be used to share ideas and promote discussion within a scientific community. The second version of the Web (Web 2.0) indicates a return to these original uses, and prompts significant changes in the ways the World Wide Web is being used in business (Boulos and Wheeler, 2007). Web 2.0 has been called the 'social Web', because, in contrast to Web 1.0, its content can be more easily generated and published by users, and the collective intelligence of users encourages more democratic use. Basically, Web 2.0 is about conversations, interpersonal networking, personalization and individualism (Abram, 2005; O'Reilly, 2005). Web 2.0 software has emerged to facilitate new online activities, many of which could not have been previously achieved. Online social interaction has been enriched through the use of wikis, blogs and podcasts. Web 2.0 encourages a more human approach to interactivity on the Web, better supports group interaction and fosters a greater sense of community in a potentially 'cold' social environment.

Although Web 2.0 promises a breakthrough in the social community, only a very limited number of academic studies on Web 2.0 have been done with the main emphasis on Internet technology, library systems, and learning community (Masona and Rennie, 2007; Stephens and Collins, 2007; Tredinnick, 2006). With all advantages of a social Web, it appears that Web 2.0 is a very important means for entrepreneurs in starting a new business, especially a small business. Using Web 2.0 applications, entrepreneurs can find an effective ways to communicate, interact, and share business ideas online. These newer innovations in Web interactivity also enable entrepreneurs exploit the new markets, understand more about customer needs, and attract venture capitalists. This is extremely important for small business entrepreneurs who may have limited resources to start their business. Web 2.0 becomes not only an effective but also a very efficient way to lead them to a success.

This research aim at answering two major research questions: 1) How Web 2.0 can be used to support entrepreneurs in starting a new small business? 2) What are major drivers of Web 2.0 usage by entrepreneurs in starting a new small business? The empirical results of this research will help bridge the gap in the existing literature and provide practitioners valuable insights about the use of Web 2.0 for new small businesses. The research is constructed as follows. First, a comprehensive literature on the Web 2.0, its advantages and disadvantages, and the potential influences on entrepreneurship will be conducted. Second, a research model will be developed using the Technology Acceptance Model (TAM) along with research hypotheses. Third, an appropriate statistical analysis will be conducted using an empirical data in America to test hypotheses. Finally, the results will be discussed with theoretical as well as practical implications.

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THE EFFICIENCY OF PRIVATE UNIVERSITIES AS MEASURED BY GRADUATION RATES

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It is well known that human capital is enhanced by graduation from a college or university. How efficient are such institutions in conveying this mark of human capital? Efficiency and productivity in private higher education is measured by using undergraduate graduation rates as the output, and demographic variables, the quality of the students, and the annual expenditures (adjusted for academic mission) as inputs. Tests of several models using OLS and stochastic frontier analysis confirm that private schools can increase their graduation rates by increasing focused expenditures and through more selective admissions. Estimated elasticities are reported and point toward increasing expenditures as the most responsive method. Estimate graduation efficiencies of 93.0, 91.5, and near 100% are also reported for four, five and six year graduation rates respectively. A rank correlation with the U S News and World Report 2008 rankings is consistent with our measure of relative efficiencies.

DIALOGICAL NARRATIVE: A MODEL FOR LEARNING, LEADING, AND CHANGE IN HIGHER EDUCATION

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It is not news that traditional four-year colleges and universities continue to face challenges of remaining relevant in today's post-secondary education context. The challenges facing today's four-year institutions include: instructional delivery, technical training, globalization, development of alternative revenue and competition. However, what remains is a clear understanding of what is required of leaders and constituents of higher education in order to effectively respond to these and additional unforeseen challenges. This paper presents dialogical narrative as a theoretical model for framing research on and the practice of leadership development and organizational change in higher education (or any other organization for that matter). Dialogical narrative is a model of individual and organizational learning/development that may prove useful in preparing both individuals and organizations to not only cope with change, but to initiate and move through change.

SALARY DIFFERENCES AMONG PROFESSIONAL BASEBALL PLAYERS: AGENCY, TOURNAMENT AND EQUITY THEORIES

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This study examined the predicted relationship between performance measures and salary based on agency, tournament, and equity theories of motivation. The results of this study support both agency and tournament theory as explanations of salary differences among players. The agency theory results suggest that teams who win more games are likely to spend more money for players' salaries. This agrees with a conclusion of Parks and Colon (1995) that for teams to win more games they need assistance from better players. The tournament theory results suggest that players with better performance measures, who are assumed to have higher rank in the team's hierarchy, are likely to receive better rewards. This agrees with proposition of Lazear (1988) who described that moving up within hierarchies in organizations can be viewed as contests for better rewards. However, the equity theory predictions were not completely supported by the data. External equity theory was able to explain salary differences among infielders, but among outfielders or catchers. Data used in the analyses are from the database at www.espn.com, sports.yahoo.com, and www.usatoday.com.

A WORK OF A.R.T.ACCOUNTABILITY, RESPONSIBILITY, AND TEAMWORK A CROSS-CULTURAL MODEL FOR INDIVIDUALIZING INSTRUCTION

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National Urban Alliance

This paper presents a cross-cultural model for individualizing instruction as an educational model in which curriculum and instruction are tailored to the needs of learners to ensure success. The studies and research of Piaget, Vygotsky, Montessori, Dewey, Gardner, among other educational giants have addressed the key factors that contribute to a successful school learning for all children regardless of cultural background and socio-economic situations. Three of these factors are: (a) multiage education, whereby children are grouped according to their educational needs rather than their physical age (b) knowledge-based instruction, which is rich in content, and which does not necessarily follow a strict curriculum, and (c) intensive focus on integrated language instruction that unites reading, writing, and speaking in an engaging format appropriate for each child's specific needs and learning strengths. To ensure the success of these three factors, there must be on the part of the school: Accountability of administration and faculty to provide outstanding education; Responsibility on the part of students to learn to their highest potential, and Teamwork of parents, faculty, and children. We have coined the acronym A.R.T. to represent the force that can initiate and develop a school where all instruction is individualizing to students needs and strengths and brings about maximum learning. The research and the results that accrued in a specific kindergarten to eight grade school based on the work of educators from diverse cultures and the melding of Accountability, Responsibility, and Teamwork is the focus of this paper.



CHAOS IN THE CLASSROOM

Jane Davis

North Carolina A&T State University

This paper explores the relationships found among critical thinking theory, brain-based learning theory, constructivist learning theory and chaos theory. It submits the foundation for a new learning theory that addresses the shortcomings of behaviorism and linear models of learning, and explains the organic bases of deep and critical understanding of content.

LOVE OF MONEY, MACHIAVELLIANISM AND UNETHICAL BEHAVIOR: DIFFERENCES BETWEEN INTRINSIC AND EXTRINSIC RELIGIOSITY STUDENTS

Yuh-Jia Chen

Palm Beach Atlantic University

Thomas Tang

Middle Tennessee State University

This research investigates longitudinal data of 198 undergraduate students across four time periods in one semester (Times 1, 2, and 3, one-week apart; and Time 4, four weeks later) and tests a model, of unethical behavior involving intrinsic religiosity, the love of money, Machiavellianism, and propensity to engage in unethical behavior (PUB) using structural equation modeling. We found significant different results between intrinsic and extrinsic religiosity groups on Machiavellianism and Unethical Behavior but not on the Love of Money. The religiosity belief was a moderator and Machiavellianism was a mediator of this model. The Correlation data showed that the love of money was significantly correlated with Machiavellianism positively. Results are discussed in light of the religiosity belief and business education.

EXAMINING DIFFERENTIATED INSTRUCTION FOR NOVICES: TEACHERS RESPOND

Brenda Logan

Armstrong Atlantic State University

Differentiation is not a novel concept. The one-room schoolhouse is an ideal example of how teachers have attempted to meet the needs of all students centuries ago (Anderson, 2007). Though differentiated instruction seems to be a broad term, it mainly refers to those classroom practices embodying student learning styles, interest, and prior knowledge (Benjamin, 2002). Understandably, state standards represent the knowledge to be taught but differentiated instruction gives us a meaningful way to teach those required standards (Protheroe, 2007).

Schools need to be concerned with differentiation (Stradling & Saunders, 1993) due to the following: 1.) the changes made to standardized assessment tasks (SATs) and the requirements for coursework 2.) school organizations and teaching methods are under scrutiny 3.) the demands of the national curriculum and emphasis on national assessment 4.) the publication of each school's assessment and examination results 5.) the requirement of schools to produce a short development/improvement plan and 6.) the requirement of teacher evaluations/appraisals. Today's classrooms are now defined by diversity. By 2035, students of color, will be a majority in our schools with increasing populations of children of immigrant and migrant families. Half of all children will live in single-parent homes at some time during their school years (Tomlinson, Brighton, 2003; Sapon-Shevin, 2000/2001). The major purpose of differentiated instruction is to maximize each student's growth by meeting each student where he or she is (Hall, Strangman & Meyer, 2003). For the most part, traditional instruction has been equated with teachers "who teach to the middle" or use the "one-size-fits-all approach" (Rock, Gregg, Ellis, & Gable, 2008). One popular way of adopting differentiated instruction has been developed by Carol Ann Tomlinson (1999), professor and noted authority on differentiated instruction. The review of the literature will cover these sections: 1.) definitions for differentiated instruction 2.) major principles 3.) essential elements/components 4.) suggestions for implementing differentiated instruction in the classroom 5.) myths, clichés, and barriers in differentiating 6.) research & evidence. The paper ends with the results of a survey of 141 urban middle school teachers on what differentiated instruction is and is not. Teacher-participants were asked to respond using a likert-style scale to 16 key questions on the differentiated classroom environment.

AN ACADEMIC AND COMMUNITY APPROACH TOWARD CULTURAL DIVERSITY FOR THE PREPARATION OF TEACHER CANDIDATES AT A PRIVATE WOMEN'S COLLEGE

Cynthia Bryant
Columbia College

With the great diversity of cultures that are prevalent in the public schools in this country, it is of paramount importance that teacher education candidates receive training in multicultural education. Teacher candidates at Columbia College, a private women's college in Columbia, South Carolina are required to take a course entitled, Understanding Diverse Learners. In this course, students incorporate information technology in completing the requirements of the class to share with their classmates.

This study will be undertaken to determine the intercultural experiences of teacher education candidates on a cross-cultural sensitivity inventory prior to taking a two-semester hour class in multicultural education and at the completion of the class. The pre and post assessment data will enable students to know the culture of self. It is hypothesized that students scores will increase indicating a greater sensitivity to other cultures as a result of taking this class.

PROGRAM ASSESSMENT: WHAT CAN BE LEARNED FROM SENIOR AND ALUMNI SATISFACTION SURVEYS?

Tanya Clark
Rowan University

Catherine Parrish
Rowan University

Roberta Harvey
Rowan University

George Romeo
Rowan University

Disciplines that do not undergo a prescribed accreditation process must tailor their own methods of assessing curricular effectiveness. In this study, an English Department at a public university of about 10,000 undergraduates (and about 500 majors) undertook the task of analyzing student satisfaction in terms of vocational needs by distributing surveys to current seniors and alumni from the previous ten years. This paper details the results obtained, including the finding that respondents made a clear distinction between “importance” and “use” in rating individual courses within the program. The survey results led to the department’s realization that student satisfaction may have less to do with students’ acquiring vocational skills than with faculty’s coherently transmitting core department values. This department’s experience in assessment may be instructive for other liberal arts departments, especially those that have not considered the key role of articulating department values and other contextual factors in measuring student satisfaction.

MANUFACTURING PLANNING AND CONTROL

Leonard Nass

New Jersey City University

Managers are realizing the need for strategic planning to make them more competitive in a global environment. Because of the increased emphasis on quality and price, the manufacturing component of this strategy is critical to success. The manufacturing strategic plan (MSP) often fails to achieve its objectives because of a rush to implement these programs without the proper foundation.

To provide a sound foundation for a more realistic, achievable MSP we should begin by gathering data for a detailed self-evaluation. Common sense should then be used to correct deficiencies exposed by this data. The prerequisites for any new manufacturing programs being considered for the MSP should be evaluated. All of this will provide information for the strategic planning process that should make it much more effective, and should accelerate implementation.

EDUCATORS WHO CARE: THE ROLE OF POLITICAL CLARITY IN EDUCATOR – STUDENT RELATIONSHIPS AND PRACTICES

Kristine Lewis

Drexel University

Jodi Bornstein

Arcadia University

Patrick Spearman

Rowan University

In this present era when teacher's salary increases are attached to their student's performance on standardized tests, the relational element of teaching and learning has been ignored and characterized as inconsequential to the academic achievement and educational attainment of our children. The papers assembled for this proposed panel redirect our attention to the significance of meaningful relationships in educational settings, and focus on the roles of care and community in promoting visionary models for urban education. The first paper concentrates on urban activist teachers and the role of care and political clarity in their commitment to teach in urban schools. The second paper considers the role of college access staff in the constellation of adult support in urban students' aspirations for higher education. The third paper looks inside an urban university, and investigates the influence of caring relationships between college faculty and their students on the students' critical political analysis and budding social activism. Taken together, these papers offer hope and direction for re-imagining urban educational settings as community centers where families, school staff, and concerned members of the surrounding community collectively care for our children.

INSTRUCTORS' GENERAL PERCEPTIONS ON STUDENTS' SELF-AWARENESS

Frances Feng-Mei Choi
HungKuang University

Taiwan's higher technological and vocational education reforms has initiated in 1996. The reforms intended to convert all traditional junior colleges into institutes of technology or universities of technology. The purpose of this study aimed to understand instructors' perceptions of students' self-awareness after the higher education reforms. A self-administered questionnaire was used for this study. A total of 750 instructors were included in the sample for this study. The total number of returned questionnaires was 497 copies out of the 750 sent, resulting in a 66% return rate.

This study found no important or consistent predictability of students' self-awareness using instructors' age, years of teaching experience in higher education, gender, college affiliation, educational background and academic rank. While there existed a strong level of negative perception among the decisive respondents, that level of support (or lack of positive perception) was not predictable based upon a multitude of predictive factors. It was notable that student self-awareness received the extremely negative responses from all respondents. Students' self-awareness should be a major concern and there must be an integration of programs designed for improving the students' self-awareness.

TECHNOLOGY FUNDING IN EDUCATION: DO WE REALLY MEAN BUSINESS?

Dianne Wright

Florida Atlantic University

Deloris Benjamin

Florida Atlantic University

Glenn Walters

Florida State University

The researchers provide a comparative analysis of technology infrastructure, funding, and expenditures of colleges and universities in the United States and Canada. Both primary and secondary data sources are used. Examples are provided in terms of how each of these institutions' College of Education is using data to make decisions, primarily driven by the accreditation process. Results also indicate that due to severe funding shortages, alternative funding sources must be sought if higher education is to keep up with cutting edge technological progress and the needs of faculty.

TECHNOLOGY POLICY AND DATA-DRIVEN DECISION MAKING IN HIGHER EDUCATION**Dianne Wright**

Florida Atlantic University

Glenn Waters

Florida State University

Deloris Benjamin

Florida Atlantic University

In today's American system of education, large amounts of data are being collected at every level, kindergarten through college (K-20). In years past, this data were simply collected and used for basic accounting, or reporting purposes as opposed to driving important decisions to facilitate meaningful change. While this scenario has changed dramatically in the K-12 education sector, postsecondary education is still playing "catch-up," in many ways, in terms of navigating the intricacies of data-driven decision making. This pilot case study of data-driven decision making in a selected College of Education reflects the results of the implementation of data-driven decision making strategies in response to the re-accreditation process. Using a convenience sample and a semi-structured interview protocol, the researchers recommend a hybrid technology policy model as most effective in terms of using technology to monitoring and make data-driven decisions regarding student performance. Future research will be conducted to determine the extent to which the pilot case study results can be generalized to other education settings.