ACADEMY OF EDUCATIONAL LEADERSHIP JOURNAL

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LETTER FROM THE EDITORS

Welcome to the *Academy of Educational Leadership Journal*. The editorial content of this journal is under the control of the Allied Academies, Inc., a non profit association of scholars whose purpose is to encourage and support the advancement and exchange of knowledge, understanding and teaching throughout the world. The mission of the *AELJ* is to publish theoretical, empirical, practical or pedagogic manuscripts in education. Its objective is to expand the boundaries of the literature by supporting the exchange of ideas and insights which further the understanding of education.

The articles contained in this volume have been double blind refereed. The acceptance rate for manuscripts in this issue, 25%, conforms to our editorial policies.

We intend to foster a supportive, mentoring effort on the part of the referees which will result in encouraging and supporting writers. We welcome different viewpoints because in differences we find learning; in differences we develop understanding; in differences we gain knowledge and in differences we develop the discipline into a more comprehensive, less esoteric, and dynamic metier.

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STUDENT USE OF A FREE ONLINE TEXTBOOK

Sherry Robinson, The Pennsylvania State University, and Buskerud University College

ABSTRACT

The amount of money that university students spend on textbooks each year is a major concern to many groups, from students, to parents, to teachers and school administrators. One possible solution to this problem is the use of lower cost electronic textbooks. This study examines the practices of students who were offered a free online textbook or a low-cost paper version of the same book. The results show that the majority of those who used the book purchased a paper copy because they considered a reasonably priced paper book preferable to reading online. Regardless, many expressed appreciation for the online availability of the book as well as the low cost.

INTRODUCTION

Textbook prices are a concern to many groups, from students, to parents, to teachers and school administrators. Students spend an average of \$700-1000 per year on textbooks (Allen, 2008). Furthermore, a 2005 report by the United States Government Accountability Office (GAO) concluded that the prices of college textbooks and supplies have risen at twice the rate of inflation over the last two decades. Prices of these goods were 186% higher in December 2004 compared to December 1986, while the prices of other goods rose only 72%. Many students do not purchase the text, even if it is required, in order to cut down on school-related expenses (Owuor, 2006).

One possible solution to this problem is the use of electronic textbooks (e-books), which are cheaper to produce and distribute (Annand, 2008). According to the Association of American Publishers, major US publishers sold \$241 million in e-texbooks in 2007, out of a total of \$3.5 billion in sales (Guess, 2008). Many e-textbooks are offered through a subscription model in which students rent access to material for a limited time, such as six months (Caldwell, 2008; Hacker, 2010). Other companies offer free materials while earning revenue from selling hard copies of the books and extra materials (such as study guides, interactive quizzes, and podcasts) or selling ads within the book (Owuor, 2006; Rampell, 2008).

This study examines the practices of students who were given the opportunity to use an online e-book for free and/or purchase a low-cost paper copy. The following section reviews the literature on the use of e-books compared to paper books, and then the results of this study are presented.

E-BOOKS AND PAPER BOOKS

E-books are becoming more practical and common as computer technology and internet access become widespread. Vernon (2006, p. 420) laid out the basic decision model for people who can choose whether to read an electronic resource. Should I read from the computer screen? If so, should I read online now or save the file and read later? If I print the material out so I can read from paper, should I print out the text and read it now or read it later? As more and more readings (books, articles, other text material) are available online, readers are given increased opportunities to choose the option that works best for them. As e-readers become more popular, reading from a screen instead of a paper may become more popular. However, at the time of this writing, most people prefer to read text that is on paper instead of on a screen, as shown by a variety of studies (Allen, 2008; Annand, 2008; Ismail & Zainab, 2005; Klute, in Redden, 2009; Matthiasdottir & Halldorsdottir, 2007; Mercieca, 2003; Spencer, 2006; Vernon, 2006).

Reading from a computer screen is different from reading from paper in terms of both speed and practice. People read 25-40% slower from a screen, even though they skim more rather than reading details (Krug, 2006; Nielsen, 2000). A majority (53%) of university students in Iceland also reported they could read from paper faster than from a computer screen (Matthiasdottir & Halldorsdottir, 2007). In a study that directly compared the reading speed and comprehension level of people reading the same article from either a computer screen or from paper, those reading from the screen took longer and correctly answered fewer questions about the text (Mayes, Sims & Koonce, 2001). Annand (2008), however, concluded that using e-books does not affect knowledge acquisition. In a similar study, Noyes and Garland (2003) also found no significant differences in readings times or comprehension levels.

Noyes and Garland (2003) found a difference in confidence for learning, with students' confidence for learning from books being significantly higher than their confidence for computer-based learning. Mature students had the highest levels of confidence in book-based learning and the lowest levels of confidence in computer-based learning, despite a lack of age-based differences in attitudes towards books and computers in general (Garland & Noyes, 2005).

Comfort, rather than attitude towards computers, seems to be one of the primary issues in the preference for paper over e-books (Gelfand, 2002; Ismail & Zainab, 2005; Klute, in Redden, 2009; Matthiasdottir & Halldorsdottir, 2007; Mercieca, 2003; 2004; Spencer, 2006; Vernon, 2006). In the Icelandic study, 41% said it was boring to read from a computer screen, and 32% said that it was uncomfortable (Matthiasdottir & Halldorsdottir, 2007). While 33% said they felt comfortable reading an e-book on the computer, 22% reported the opposite opinion. The majority (45%) were neither comfortable nor uncomfortable with the practice. This is fairly similar to a study conducted at Northwest Missouri State University, where half the students liked the idea of e-books and half did not (Klute, in Redden, 2009). Mercieca (2003) found students were generally reluctant to read e-textbooks on the computer.

Spencer (2006) found that, overall, graduate business students prefer paper copies of books because of their portability, reliability and ease of use, including the prevention of eyestrain. Specifically, she found that 92% printed out readings so they could work with multiple documents simultaneously, approximately 80% printed out a reading if it was long or complicated or was needed for exam preparation, and 75% printed it out to make note-taking easier. As a result, two-thirds of the students read less than one-third of the material on a computer screen, and indicated that they would continue to read from paper regardless of technological improvements.

In a study by Mercieca (2004), all the students printed out the text when given the opportunity, rather than reading it from a computer screen. Of the 14 students in the study, 5 tried to read the material from the computer screen, but found that they experienced eye strain after a few pages and resorted to printing out the text. As a result, students reported that they would only buy an e-textbook if the price were approximately one-third the price of a printed book.

Previous experience with e-books seems to help somewhat with improving the experience with reading from a computer screen. A study of students in Malaysia showed that students used e-books because they were available online and thus more convenient and easier to access (Ismail & Zainab, 2005). However, reasons for not using e-books included "difficult to browse and read" and "prefer paper books." Overall, 81.5% of the 206 respondents preferred reading textbooks on paper, but of the 80 students with previous experience with e-books, only 73.8% preferred print. This suggests that experience with e-books improves students' opinions of e-books, although paper is still the most preferred option.

To make sure students had some experience with e-books, students in Vernon's (2006) study were required to work completely online for the first two weeks so they would become familiar with the electronic version of the material, and were then allowed to continue to work online, read from paper, or a combination of the two. Vernon expected that students would prefer the e-book to the paper book due to the cost savings. However, despite numerous comments by students who appreciated not having to buy a book, 14 of 22 students who provided data regarding their general practices made paper copies, while 3 more reported printing or reading online depending on the circumstances, and 5 generally read the book online. In written comments, only 18% were positive, while 11% were neutral, and over 70% were negative. Eye-strain and the inability to take the book with them anywhere they wanted to go were common complaints.

Similarly, Matthiasdottir and Halldorsdottir (2007) found that 67% of the people in their study stated that they would choose to read text that is printed on paper rather than text on a computer screen, and 70% would buy a printed, rather than electronic book, given the chance. Only 7% reported that it is more comfortable to read long texts from a computer screen than from a printed book. A study by the Student Public Interest Research Group determined that 75% of students would prefer a printed book to an e-book (Allen, 2008; Redden, 2009), and a

majority (60%) even stated that they would buy a low-cost (\$30-40) print copy even if an e-book were available at no cost. Similarly, Gelfand (2002) found that when the price is under \$50, students prefer to purchase a paper copy which might be sold after the course is finished. Students in Mercieca's (2004) study reported that they would only buy an e-textbook if the price were approximately one-third the price of a printed book.

It is clear from the current research (Allen, 2008; Annand, 2008; Ismail & Zainab, 2005; Klute, in Redden, 2009; Matthiasdottir & Halldorsdottir, 2007; Mercieca, 2003, 2004; Spencer, 2006; Vernon, 2006) that most people still prefer to read from paper than from a computer screen. Over time, however, people may develop a new reading style based on the preponderance of computer-based material they read (Brown, 2001). Noyes and Garland (2004, 2006) conducted two studies comparing students' attitudes towards books and computers. In the earlier study, 52.8% preferred books, but this percentage dropped to 35% in the later study. The proportion of people preferring computers was low in both studies, but the percentage that liked books and computers equally rose from 40% in the first study to 60% in the second study.

Allen (2008) contends that open textbooks that allow users to make copies of the book in their preferred formats better meet students needs by offering low prices, printing options and accessibility. The next section presents the results of a study examining the use of one such open textbook which allowed students to read online for free, to print the material, or to buy a hard copy of the book.

METHODOLOGY, RESULTS AND ANALYSIS

To investigate the extent to which students would use a textbook if it were offered free of charge online, a survey was conducted in December 2009 among students in two sections (one traditional and one hybrid) of a Principles of Management course using the e-book offered by Flat World Knowledge. Of the 28 total students, 21 submitted fully completed survey forms. The "required" textbook was also available in a hard copy from the campus bookstore for \$40 or from the publisher for approximately \$30. Table 1 shows the results regarding book access and behaviors related to using the book.

Despite the textbook being available without cost, only 52.4% of the students reported accessing it by either reading it online or buying a paper copy. Approximately half of those who read it online also used the various other features and functions such as study tools and electronic highlighting and note-taking. Further analysis showed that those who printed the book were just as likely to use the online study tools and electronic highlighting as those who only read the online version.

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Table 1: BOOK ACCESS AND BEHAVIORS			
BEHAVIOR	PERCENTAGE		
Bought a paper copy from bookstore	23.8%		
Bought a paper copy from FWK	9.5		
Obtained a book (paper or e-book)	52.4		
Went to FWK site to see how it works	28.6		
Read the online version of the book	19.0		
Printed out a book	9.5		
Used online study tools	14.3		
Electronically highlighted sections	9.5		
Took online notes from the e-book	4.8		
Told others about the free online textbook	14.3		

While half the students in this survey reported buying the book or using the free version, 66.7% reported that they always buy a "required" book (see Table 2) and 23.8% always buy a "recommended" book. Not surprisingly, there was a clear difference between the percentages of students who buy required and recommended textbooks as students were more likely to purchased required books. However, 19.1% of them only buy a required book half the time or even less often. This percentage rises to 61.8% for a recommended book. These numbers are fairly consistent with the estimate by the National Association of college Store Foundation that 65% of students do not purchase all the "required" course materials (Owuor, 2006).

Table 2: BOOK PURCHASING BEHAVIORS			
How often do you normally buy the textbook for class when the textbook is	"REQUIRED"	"RECOMMENDED"	
Never	0%	19.0%	
25% of the time	4.8	19.0	
50% of the time	14.3	23.8	
75% of the time	14.3	23.8	
Always	66.7	23.8	

Students were also asked about the extent to which the price of a textbook influences their decision to buy it (see Table 3). The highest proportions were evident at both ends of the scale, with 38.1% reporting that price matters to a great extent, while 23.8% held that price did not matter at all. This could explain why 19.0% said that the (free) price of the textbook did not influence them to obtain access to it. However, the majority (71.4%) rated the price as being at

least 5 on the scale for obtaining access, and over 60% gave a 5 or higher to the importance of the price in influencing their use of the textbook.

Table 3: INFLUENCE OF PRICE AND ONLINE ACCESS ON BUYING BEHAVIOR				
In general, to wh	In general, to what extent does the price of a textbook influence your decision to			
RESPONSE	BUY IT	OBTAIN ACCESS TO IT	USE IT	
1	23.8%	19.0%	28.6	
2	4.8	4.8	9.5	
3	14.3	0	0	
4	9.5	4.8	0	
5	9.5	19.0	23.8	
6	0	14.3	19.0	
7	38.1	38.1	19.0	
*1=not at all, 7=to a great extent				

Taken together, these results suggest that textbook prices do indeed influence the purchase of textbooks by some, but not all, students. Furthermore, some students do not read textbooks even when they have free access. This could be a reason that the students in this course tended to spend less than the \$700-1,000 reported by students in Allen's (2008) study. For this study, students were asked an open-ended question regarding how much they spent, and these amounts were then grouped in categories based on the figures. As shown in Table 4, approximately 80% of students estimated that they spent between \$300 and \$700.

Table 4: AVERAGE AMOUNT SPENT ON TEXTBOOKS PER YEAR		
DOLLARS SPENT	PERCENTAGE	
\$0	4.8%	
\$50 - 100	4.8	
\$300 - 500	57.1	
\$600 - 700	23.8	
\$900	4.8	

These totals suggest that students buy some books, but not others. Given that \$30-40 is apparently a price at which students are willing to buy paper copies of books, students were also asked an open-ended question regarding the price at which they think carefully about buying a textbook and at what price they refuse to buy a book. Again, these prices were then grouped into

categories, as shown in Table 5. Because students who refuse to buy a book priced at \$150 will also refuse to buy a book with a higher price, the cumulative percentage are also shown.

TABLE 5				
PRICE AT WHICH STUDENTS THINK CAREFULLY ABOUT BUYING OR REFUSE TO BUY A BOOK				
PRICE	% WHO THINK CAREFULLY BEFORE BUYING A TEXTBOOK AT THIS PRICE	CUMULATIVE %	% REFUSE TO BUY TEXTBOOK AT THIS PRICE	CUMULATIVE %
\$50	4.8%	4.8%	0%	0%
\$100	42.9	47.7	4.8	4.8
\$150	4.8	52.5	19.0	23.8
\$175-225	19.0	71.5	23.8	47.6
\$300	9.5	81.0	9.5	57.1
\$500 - 600	0	81.0	9.5	66.6
None (price irrelevant)	19.0		33.3	

These findings show that one-third of the students in this survey would buy a required textbook regardless of price, but half would refuse when the book reached \$225. However, 71.5% of them would think carefully about buying the book at this price. Although 47.7% would give special thought to the purchase when the book is \$100, only 4.8% stated they would refuse to buy a book at that price. Price is apparently not the only issue in whether a student buys a book. Although students were not asked about their decision-making process, it is likely that other options for obtaining the material and how much the book will be used in a course are important factors.

Because the focus of this study was the use of an e-book as opposed to a paper book, students were also asked how much more they would be willing to pay for a hard copy of a text. Again, this was an open-ended question, and the answers were put in categories, as shown in Table 6. Only those students whose answers were in dollars are included.

Paper books were clearly important to students given that 55.6% of the students, who were willing to pay up to \$100 to buy a print book instead of an e-book. However, 22.2% of them would only pay up to \$20, and 27.7% would not pay anything more (\$0). This confirms the finds of other studies (Allen, 2008; Gelfand, 2002) that have found that students see enough value in a paper book that they would be willing to buy a reasonably priced print book rather

than reading an e-book. Looking back to Table 1, one-third of the students bought the paper book priced at \$30-40 rather than using the free e-book, and 19% read the e-book.

Table 6 PRICE FACTOR: HARD COPY VS. E-BOOK			
EXTRA	% WILLING TO PAY THIS MUCH MORE FOR A PAPER TEXTBOOK INSTEAD OF E-BOOK	CUMULATIVE %	
\$200	5.6%	72.3%	
\$150	11.1	66.7	
\$100	16.7	55.6	
\$50	16.7	38.9	
\$5-20	22.2	22.2	
\$0	27.7		

In contrast to the study by Luik and Mikk (2008), in which an electronic textbook was offered in different formats, this study used a textbook that was basically the same in the paper and online versions, although the e-book was more than simply a pdf of the paper book. Regardless, a clear preference for a paper book, as shown in these results, is consistent with previous research (Allen, 2008; Annand, 2008; Gelfand, 2002; Ismail & Zainab, 2005; Klute, in Redden, 2009; Matthiasdottir & Halldorsdottir, 2007; Mercieca, 2003; Spencer, 2006; Vernon, 2006) showing that students prefer paper books over e-books. Another reason for the popularity of the paper book may be that the textbook was online, but internet access was not available in the classroom. Yet another reason may be the fairly low cost of the paper book. As one student stated, "For \$30, I'll just buy it."

CONCLUSION

Although students frequently express concerns about the price of textbooks, and many say they cannot afford to buy a given textbook for a class, almost half of the students in this survey still did not use the book even when it was offered free of charge. On the other hand, one-third of the students still chose to buy the book in order to obtain a paper copy. This is similar to Allen's (2008) findings that 60% of students would still buy a textbook even if a free e-book were offered if the paper copy was available for \$30-40. It is also consistent with Vernon (2006) who expected that students would prefer the cost-savings of an e-book, but found they would rather spend money to read from paper.

This research was limited to two small sections of a course given in a single semester. Future research should further examine student use of textbooks and their preferences for various formats given various prices. As e-books become more common and the technology to read them develops so that physical discomfort is reduced, readers' preferences may change.

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COGNITION & RISK PERCEPTION IN BUSINESS ENVIRONMENTAL SUSTAINABILITY EDUCATION

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ABSTRACT

Serious global environmental challenges such as climate change, loss of biodiversity and other pollution issues are creating substantial risks and associated strategic opportunities for business enterprises. Many experts suggest that rapid responses are required from all societal institutions to include government, industry and academia. Nevertheless, many leaders in these institutions still deny the criticality of these problems and, as a result, the rate of adaptive change is frustratingly slow. This paper uses the theories of cognitive and behavioral decision sciences to forward an integrative framework seeking to explain why business executives may inappropriately discount such environmental risks as well as their responsibilities in addressing these challenges. Following an articulation of the key variables in this framework, the author then suggests practical classroom strategies that have been used in executive, graduate and undergraduate business education to counteract judgment biases and errors that predispose individuals to deny their responsibilities in addressing the imperatives of environmental sustainability. Educators as well as internal and external change agents and consultants will find this paper useful in promoting environmental awareness and responsible decision making.

"We can't solve problems by using the same kind of thinking we used when we created them" *Albert Einstein*

"All real change is grounded in new ways of thinking and perceiving....Different ways of thinking lead to different ways of acting" *Peter Senge*

INTRODUCTION

This monograph forwards a conceptual framework useful in analyzing the potential impact of various cognitive heuristics on environmental risk and opportunity assessment within the business context. Following articulation of some of the key elements in this framework, the model is then used to develop educational strategies designed help students address some of the challenges of corporate environmental responsibility. These educational approaches have specific relevance in courses where the skills of ethical discernment and associated critical thinking are paramount. Relevant courses might include business ethics, corporate social responsibility (CSR), business in society or any course in a functional area addressing ethics and CSR.

This analysis is predicated upon the following premises and associated logic:

1. Present and future organizational leaders need to accurately perceive emerging global realities and make decisions based upon a sound understanding of the risks and opportunities relevant to their operating environment. One important area of strategic risk and opportunity grows out of the ubiquitous environmental impacts of our increasingly industrialized civilization. The term *corporate environmental responsibility* will be used to delineate those responsibilities that a firm has in relation to potentially negative externalities produced by the organization's production processes.

2. The ability of decision makers to perceive and respond to challenges of corporate environmental responsibility ultimately depends upon the quality of individual human judgment and associated cognitive information processing. These mental processes are in turn significantly influenced by predictable cognitive biases and potentially dysfunctional mental shortcuts (*cognitive heuristics*) that may cause some decision makers to ignore important risks and/or fail to recognize emergent strategic opportunity (Messick and Bazerman, 1996). These judgmental dynamics will be described as a form of *bounded rationality*, a term more fully explored in subsequent sections.

3. Innovative educational strategies can be deployed based upon an understanding of the dynamics of bounded rationality and associated systematic cognitive bias. These strategies can be used by business educators to improve veridical problem detection and combat dangerous denial and or discounting of potentially calamitous environmental problems.

WHY SHOULD BUSINESS SCHOOLS CARE ABOUT ENVIRONMENTAL ISSUES?

Objective analysis of the ecosphere's vital signs reveals a steady deterioration in biodiversity and other indicators of global ecological health ((Cristol, 2003);(Christen, 2001); (Galusky, 2000); (Suzuki, 2002)). In addition, virtually all of the major scientific learned societies (e.g. National Academies of Science, European Academy of Sciences and Arts, International Council of Academies of Engineering and Technological Science etc.) and the U.N Intergovernmental Panel on Climate Change formally state that global climate change is real and posit its primarily anthropocentric origins with a 95% confidence interval.

Even if one is a climate change skeptic, one is still faced with ample evidence of an increasingly unhealthy ecosphere. According to the recently released Millennium Ecosystem

Assessment Synthesis Report, a 5 year UN sponsored study by 1700 of the world's leading environmental experts: "Although evidence remains incomplete, there is enough for the experts to warn that the ongoing degradation of 15 of the 24 ecosystem services examined is increasing the likelihood of potentially abrupt changes that will seriously affect human well-being. This includes the emergence of new diseases, sudden changes in water quality, creation of "dead zones" along the coasts, the collapse of fisheries, and shifts in regional climate" (Millennium Ecosystem Report, 2005).

Considering the above realities, the need for business models that are sensitive to issues of corporate environmental responsibility and environmental sustainability has never been more important than in the present circumstances ((Hart, 2007); (Senge et al., 2008); (Esty and Winston, 2006); (Friedman, 2008)). This raises an important question as to how global society should respond to such problems.

Although one cannot deny purely economic motivations (Buchholz et al., 1991, Esty and Winston, 2006), review of the literature of corporate environmental conduct suggests that a key catalyst to exemplary institutional behavior is often a lone individual leader who acts and leads from a position of moral rectitude and environmental consciousness ((Aragon-Correa et al., 2004); (Bansal, 2003); (Bansal and Roth, 2000)Bansal & Roth, 2000; (Sharma, 2000). Business educators can play a key role in fostering such ecological awareness. This effort can have a significant influence on the mental models of future business leaders because of the impact business education programs have on the people staffing many businesses (Gioia, 2002). Clearly the educational experiences of the 100,000 plus students awarded the MBA each year (Kelly, 2005) is at least partially determinative of many future business practices. As graduates mature in their careers, many practitioners end up making major decisions that have significant environmental impacts. MBA programs also provide the socialization processes that greatly influence a wide variety of decision contexts (Cordano, Ellis, & Scherer, 2003) (Stewart, Felicetti, & Kuehn, 1996).

There is good reason, therefore, for the business academy to accept the increasing importance of business sustainability and its associated challenge of corporate environmental responsibility. To be effective agents of change in this respect, educators are faced with the challenge of determining effective educational strategies that ultimately promote sound and ethical decisions regarding potentially dangerous externalities.

Rather than simply admonishing students to "do the right thing," the author proposes an educational strategy that encourages students to better understand how their judgment in this area may be distorted by well established cognitive shortcuts and other judgmental biases that have been shown to yield systematic flaws in problem detection and ethical discernment. These perceptual and judgment dynamics will be subsumed in the domain of "sensemaking" a term defined in the next section.

KEY CONCEPTS AND DEFINITIONS

As William James noted in 1890, when we first enter the world as infants we experience it as, "one great buzzing, blooming confusion" (James, 1890). Making sense of this confusion is the function of the mental processes we will call "*sensemaking*." Thomas et al. define sensemaking as "*the reciprocal interaction of information seeking, meaning ascription, and action*" (*p. 240*), which means that environmental scanning, interpretation, and 'associated *responses' all are included*" (Thomas et al., 1993). Sackman broadens this definition by stating that sensemaking, "*includes the standards and rules for perceiving, interpreting, believing, and acting that are typically used in a given cultural setting*" (Sackman, 1991). It should also be noted that we will be drawing from the literature of human judgment where the term "*judgment*" refers to the cognitive aspects of the decision making process (Bazerman and Moore, 2009)and is therefore concerned with translating perceptions into belief and potentially into decision making.

The author will use the term *environmental sensemaking* to describe those cognitive processes that comprise individual assessment of risks and opportunities arising from business's interaction with and impact upon the natural environment. The reader should note that "environmental" for our purposes has a specific reference to the biosphere and other attributes of the natural environment rather than the more general way in which this term is used in the business literature to describe the economic and socio-political context within which a firm exists.

As stated earlier, it is critical for business executives to competently assess risk and opportunities extant in their operating contexts. Within the modern economic context, much research has established the increasing importance of environmental issues as they yield accelerating business risk (e.g. carbon mitigation, environmental regulation etc.) as well as opportunity (e.g. more efficient supply chains, green brand attribution etc) (Esty and Winston, 2006); (Senge et al., 2008)and (Friedman, 2008). If one seeks to improve the decision making competency of future business leaders, having a model of the "sensemaking" processes by which such judgments and decisions are made provides the educator with insight and "leverage points" where educational interventions can potentially improve the quality of decision making. These educational processes should ideally improve *rationality* in decision making, a term used to denote "decision making that is logically expected to lead to the optimal result, given an accurate assessment of the decision maker's values and risk preferences" (Bazerman and Moore, 2009).

Given necessary limitations on the scope of this monograph, it should be noted that the "action" or "behavioral response" portion of the concept of sensemaking subsequent to one's initial perception and meaning ascription will not be included in our discussions of sensemaking. This framing is consistent with Feldman's notion that sensemaking does not always involve action (Feldman, 1989). Also note that we focus primarily on individual sensemaking rather than the larger and more complex issues of organizational sensemaking and subsequent decision

making. That being said, individual sensemaking is an important component of group and/or organizational sensemaking and this perspective can be useful in any attempt to improve organizational decision making and policy. In a later section the author will forward a research agenda that suggests further exploration of this broader organizational domain.

BOUNDED RATIONALITY AND ENVIRONMENTAL SENSEMAKING

The fields of cognitive psychology and behavioral economics have illuminated many of the processes by which individuals and groups process information and make decisions. In contrast to purely prescriptive theory emphasizing intentional rationality in decision making, this research has attempted to describe how decisions are actually made. Sometimes termed *bounded rationality*, this concept builds on the Nobel Prize winning work of Herbert Simon who suggested that individual judgment is best understood by modeling some of the cognitive limitations of human cognition to include information overload and subsequent information filtering that sometimes attenuates important cues about one's sensory environment (Simon, 1957).

Building on the early work of Tversky and Kahneman, later research has highlighted relatively predictable judgment fallibilities and/or systematic *cognitive biases* and *heuristics* that cause otherwise intelligent people to inappropriately assess risk and sometimes make flawed judgments (Tversky and Kahneman, 1974a); (Messick and Bazerman, 1996). Here the term heuristic refers to a simplifying cognitive strategy or rule of thumb that enables one to cope with decision making complexity and cognitively manage information processing overload. It must be acknowledged that these heuristic shortcuts have enormous value for all decision makers – human beings literally could not function in the world without them. Unconscious judgment and intuition provides the decision maker with invaluable insight into many elements of a decision making task (Gladwell, 2005) and (Goleman, 2006). Nevertheless, there are relatively predictable judgmental biases that arise from use of these heuristics that can systematically bias one's perception of risk (and opportunity). If such biases cloud one's judgment regarding environmental realities the aggregate consequences are potentially disastrous to all of humanity. For this reason, it is imperative to help business decision makers be aware of these dysfunctional heuristics and the negative impact they ultimately can have on present and future generations.

As a subset of the concept of bounded rationality, the theory of **bounded ethicality** is particularly useful in designing educational programs striving to improve critical thinking in the area of ethics and associated issues of environmental responsibility (Chugh et al., 2005). This theory is useful because it suggests that educational efforts aimed at improving ethical judgment and associated decision making must go beyond admonitions "to do the right thing." In these latter approaches to developing ethical leadership an implicit assumption is made that ethical lapse or denial of environmental responsibilities is a function of "bad or wrong minded intentions". In contrast to this more "moralistic" view, the bounded ethicality view emphasizes that decision making is dependent upon individual judgment which in turn is dependent upon perception and cognitive interpretation mediated by social, moral, institutional and cultural processes ((Dessai et al., 2004) and (Slovic et al., 1998)). Highlighting this point, recent research also provides a compelling case that the vast majority of unethical behavior occurs *without the actor's conscious intention* to behave unethically ((Chugh et al., 2005) and (Messick and Bazerman, 1996)). Using this theoretical perspective we better understand that otherwise honorable people can inappropriately discount environmental risk and subsequently make flawed business decisions predicated on problematic cognitive heuristics.

In the next section these and other concepts are used to develop educational approaches that build student awareness of the potential errors in critical thinking that can arise from these dynamics of bounded rationality.

VARIABLES NOT FULLY ELUCIDATED IN THIS MODEL

As noted in previous sections, this analysis focuses on a subset of influences on environmental sensemaking that might be addressed within the context of business education. Other important influences, although beyond the scope of the present study, include gender (Webler); (Hunter et al., 2004), individual personality (Elena and Eva, 2006); (Franz et al., 2000); (Tarja, 2004), early childhood experiences (Bogeholz, 2006); (Roszak et al., 1995), secondary and general higher education (Cordano et al., 2003); (Leiserowitz, 2005); (Makower, 2009), personal values (Lee and Holden, 1999); (Sharma, 2000); (Bamberg, 2003); (Aragon-Correa et al., 2004), culture (Branzei et al., 2001); religion (Holland and Carter, 2006); (Brinkerhoff and Jacob, 2006) and geographic influences (Blake, 2001). There has also been substantial research focusing on media influences on environmental sensemaking (Stein, 1972); (Hall, 1982); (Hannigan, 1995); (Shibley and Prosterman, 1998) and (Marcelo, 2002).

These wide ranging influences are noted above because any attempt to fully conceptualize environmental sensemaking must acknowledge the substantial impact of these variables powerfully influencing human judgment. For our present purposes, however, this paper addresses one set of related influences on judgment – cognitive heuristics shown to influence sensemaking.

THE EDUCATIONAL VALUE OF THE SENSEMAKING MODEL

Figure 1, shown below, identifies a simple model of environmental sensemaking that incorporates key elements of the theories described above. It is important to note that a full delineation of all the influences acting upon environmental sensemaking is beyond the scope of this paper. Clearly, in its totality such a model would be extremely complex with its inclusion of socio-cultural influences, individual personality, genetic predispositions, geographic location etc.

The reader should note that the model introduced here frames those elements of judgment that are particularly susceptible to problematic cognitive heuristics and, as such, its scope is more limited.

Although there are these limitations in scope, this model shown below should be useful in the following ways:

1. The model is helpful in explaining some of the heuristic phenomenon that can lead to denial of a firm's negative environmental impact, or conversely, recognition of emerging opportunities arising from increasing societal concern for environmental integrity. (Many environmental scientists believe denial is omnipresent in modern business and governmental organizations (Wilson, 2003); (Suzuki, 2002); (Flannery, 2005).

2. Because the model is grounded in well established theories of problematic heuristic bias, it is helps identify educational "leverage points" where well designed interventions can be deployed to promote learning and improved decision making. The model helps the educator better understand and potentially influence ethical judgment because ethical learning processes are conceived within the frame of bounded ethicality versus a less potent theory of intervention based upon espoused moral prescriptions (Bazerman and Moore, 2009).

3. The model helps us identify future research needs and provides a foundation for scaling the model to tackle the challenge of understanding environmental sensemaking in the organizational context versus the individual context.



Figure 1 Environmental Sensemaking Model

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The remainder of this paper highlights some of the heuristic influences on individual environmental sensemaking. This analysis is then used to identify "leverage points" where a business educator might enhance judgmental accuracy in regard to current and probable future environmental degradation (e.g. anthropogenic climate change, massive loss of biodiversity and the increasing ubiquity of pollution effects etc). Key research is highlighted showing how each element in this framework acts to shape and potentially bias environmental sensemaking in a way that may promote underestimation of environmental risk or create blindness to emerging strategic opportunities. Where possible, the author concludes each section with educational recommendations designed to help mitigate judgment error and ultimately improve prospects for environmentally responsible business behavior. In some instances, the author has not yet devised educational activities focusing on a given model element discussed below. In such cases where the research literature and/or the author's experience provides little guidance, scholars and educators are encouraged to forward approaches that offer promise in mitigating these biasing errors.

A general approach used in generating many of the educational activities suggested herein is Fischoff's "Heuristic Debiasing Model" (Fischoff, 1982). Fischoff highlights some simple approaches that have been shown to help students and practitioners gain better control over their judgment and avoid systematic error and bias (Bazerman and Moore, 2009). This model suggests that the decision maker should be alerted to the probability and direction of potential heuristic biases and then provided feedback and coaching to help reduce systematic judgment error. Even in instances where the educator is confronting powerful and deeply rooted biases, Fischoff's work suggests that the first step in learning is at least an awareness of the possibility of judgmental biases arising from these heuristic processes clearly demonstrated in both laboratory and field settings. A simple alternative "debiasing" educational strategy is to challenge students to "consider the opposite". Here a potential bias is identified and the student is encouraged to consider sensemaking possibilities that might result in judgments different from their own. Sometimes this simple act of playing "devil's advocate" can facilitate considerable personal insight (Lord et al., 1984).

Bazerman and Moore note that an important part of this educational process is the unfreezing of existing judgment predispositions. This act of "cognitive unfreezing" should be done in a way that acknowledges that one's mental models are often deeply rooted and in fact can be woven into the individual's self identify (Bazerman and Moore, 2009). As such, this effort warrants an assurance to students that even the most respected executives and educated scholars fall prey to these heuristics and, as such, the educational process should not be taken as a threat to one's self esteem. Given this general overview of the sensemaking model and the author's general approach to "de-biasing" environmental sensemaking, we now turn to each model element.

ANTHROPOCENTRISM AND OTHER POSITIVE SELF ILLUSIONS BIASES

One cognitive bias that profoundly influences environmental sensemaking is our anthropocentric bias. Much has been written about this in the environmental literature (Purser et al., 1995); (Pauchant and Fortier, 1990); and (Shrivastava, 1994). One conclusion of many scholars is that environmental sensemaking has been distorted by an inappropriate Cartesian-like split between industrial organizations and the natural environment or even more broadly between nature and humanity. (Buchholz, 1993) and (Shrivastava, 1995) Peter Senge discusses this problem in the following terms: *"We have gotten into our predicament today because of the way of thinking that focuses on parts and neglects the whole. We have become masterful at focusing on intermediate goals such as short-term profits and neglecting the larger systems upon which quarterly profits are one small part* (Senge, 2008, pg. 27).

In reality, human and natural systems are dynamically interdependent. Industrial societies and ecological systems are highly interconnected and co-adaptive, reacting to each other and to previous interactions in a complex web of mutual causality (Dale and Newman, 2005). If the business leader ignores this reality, decisions are often made that largely ignore dangerous impacts on the larger biosphere. As an example, research has shown that macro-economic policies often times do not allow biodiversity values to be expressed in the decision-making process (Asafu-Adjaye, 2003) and (Ahern, 1999). Such lapses in understanding these interdependencies between human activity and the natural environment have led to countless examples of environmental destruction (Suzuki, 2002).

Some have argued that business leaders in public corporations have only one responsibility - to maximize profit for shareholders (Friedman, 2002). As John Bogel, founder of Vanguard Investments notes, given the imperatives of the "agency mediated capitalism", this problem is exacerbated by maximization of quarterly profits versus more sustainable performance over time (Bogle, 2008). One need only look at the recent "sub-prime" economic crisis to see that this short term profit maximization often results in a systemic risk and instability.

One way that the author has addressed this sensemaking lapse in the business classroom is to require students to trace a given product's supply chain all the way back to its base in the natural world. This causes students to avoid the lapse in critical thinking manifest in its worst form by the view that "food comes from the grocery store". Although this is no doubt an exaggeration, it is clear that many students haven't really thought about these links to natural systems. Students are often surprised by how reliant a firm may be on the broad array of "ecosystem services" (clean water, clean air, soil etc.) that form the base of the firm's production processes and yet never show up in corporate accounting systems. The resource materials provided in the Millennium Ecosystem Assessment Synthesis Report (Millennium Ecosystem Report, 2005) provide well crafted instructional materials showing this link between the natural world and the world of manufacturing and even service industry activity.

Beyond anthropocentrism, human judgment has been shown to be profoundly biased in the direction of an illusion of superiority were people view themselves overly positively in a way that can distort reality and bias decision-making (Messick and Bazerman, 1996, Johansson-Stenman and Martinsson, 2006) and (Taylor, 1989). Such positive illusions can lead people to behave in ways that are arrogant, careless, and self-centered (Anderson et al., 2006) and (Baumeister et al., 2003). Positive illusions are also likely to have a negative impact on learning (i.e. environmental sense making in the present case) and on the quality of decision making in crisis situations, something that does not bode well in light of such potentially cataclysmic challenges as global climate change (Brodt, 1990); (Dunning et al., 2004) and (Tyler and Hastie, 1991).

One form of this kind of bias is ethnocentric thinking which exaggerates the difference between "us" and "them" in ways that create risk for leaders who may make ethically unsound decisions. Clearly the history of humanity has shown that these ethnocentric impulses are deeply woven into the fabric of the human experience. This is important because even if one is aware of some of the negative impacts of climate change or biodiversity for example, these perceptions tend to be distal in terms of their overall salient impact on environmental sense making. In this way, the flooding of Bangladesh is seen as a less important consequence because, "after all it's just peasants...they shouldn't live there anyway". Again, the author exaggerates a bit to make the point, but it is clear that students often significantly discount environmental calamities that befall those who are distant and quite unlike their own cultural referent group (Purser et al., 1995).

A broader outgrowth of this judgmental bias relates to something that has been termed "system justification theory." This refers to a social-psychological tendency to defend the status quo as it is seen as good, fair, legitimate and desirable. The beliefs that people hold in regard to themselves and their own groups thus underpin a larger bias towards the overarching social order (Jost et al., 2004); (Banaji and Bhaskar, 2000). In outlining the mechanisms of this bias Messick and Sentis (1983) note, "specifically, individuals first determine their preference for certain outcomes on the basis of self-interest and then justify this preference on the basis of fairness by changing the importance of attributes affecting what is fair". The ultimate consequence of this bias is that it allows individuals to believe that it is ethically fair for them to have more of a given resource than some independent advisor might judge. At its root, this positive illusion bias results in a failure of interpreting information in an unbiased manner versus some inherent desire to be unfair ((Diekmann et al., 1997) and (Messick and Sentis, 1983). This clearly has relevancy to environmental sensemaking as this domain of judgment often pertains to issues of resource allocation and equity issues surrounding pollution externalities.

One educational strategy to combat denial based upon the distal impacts of such phenomenon as climate change, water crises, and loss of biodiversity would be to illustrate the effects of environmental degradation in a more proximate context. Students might be challenged to consider how likely scenarios environmental degradation will affect their diet, farming practices in their home state or peak temperatures in one's home location (Zax, 2009). In a similar vein, Leiserowitz's survey research indicates that whereas 68% of Americans were concerned about climate change as a global phenomenon, only 13% of US citizens were concerned about the impact on themselves and their community. Leiserowitz concludes that this is one reason why climate change has tended not to be a high-priority national political issue and won't be so until American's consider themselves personally at risk (Leiserowitz, 2005).

Another educational strategy that might mitigate a portion of this "out of sight - out of mind" effect would be to require travel to other parts of the world that are now currently experiencing quality of life issues arising from environmental crises at least in part created by production and consumption processes. Although actual travel is possible in many programs, an alternative is to use any of the variety of video materials available to make such travel possible on a virtual basis.

Another educational option would be to expose students to the notion that vast economic opportunity can be realized by the firm becoming more sophisticated in its global understanding of the realities for other cultures in distant places often operating quite close to nature and at the base of the economic pyramid. Hart (2007), for example, has noted that much future business opportunity will lie in corporations becoming "indigenous" to the places they operate and will entail development of new native capabilities that enable the firm to fully contextualize solutions to real problems in ways that respect local culture and a diversity of worldviews. He argues that such "bottom of the pyramid" strategic plays represent an enormous growth potential for business enterprises but one that will require significant mitigation of the ethnocentric biases noted above (Hart, 2007).

Another cognitive information processing bias that is driven by our self-affirming predispositions is termed the *confirmation bias*. This is an information search heuristic that is manifest in search behavior that is driven by our need to confirm our prior beliefs and hypothesis even though additional information might result in new insight (Wason, 1982) and (Messick and Bazerman, 1996). Exploring cognitive dynamics beyond the initial biased search for information, Nickerson's work indicates that we interpret information gained in a way that supports conclusions we favored at the outset (Nickerson, 1998). This cognitive bias in combination with niche mass media reporting results in a mutually reinforcing feedback loop. We seek out information that agrees with our existing views and the media confirms these views by targeting those with similar beliefs. This effect is potentiated by the *projection bias* which is the tendency to see other people's opinions as much like our own. Christen and Gunther's study shows that media dynamics strongly amplify this cognitive bias in ways that can significantly impede rationality in decision making (Christen and Gunther, 2003). As an example, a particularly popular AM radio host might create a highly emotive counter hypothesis to accepted science on a particular environmental issue and then the listeners subsequently confirm this "truth" via selective information search.

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One educational approach useful in combating this bias is to show how mass media is increasingly "niche" oriented in ways that can heighten the influence of the confirmation bias. Discussion can focus on the student's favorite media sources and the degree to which these sources tend to confirm their pre-existing biases. Students will often recognize that they tend to be drawn to information sources that avoid fundamentally challenging their existing mental models. The author has also found that personally disclosing that he too has fallen prey to such phenomenon creates an understanding that this effect is widespread and difficult to combat even when one has awareness of the dangers of self-confirmation bias. Classroom discussion can then focus on ways in which both the instructor and students have acted to combat these problems by purposively forcing diversity of perspectives in one's information "diet".

The *source credibility* bias is closely related to some of the heuristics noted above. Here environmental sensemaking becomes biased when we reject information that comes from someone who may be quite different from us. Inversely, we tend to accept statements by someone we like and who shares similar cultural characteristics. Here the focus is on the people versus the data. An interesting example of this has been demonstrated in the renewable energy realm. Here one of the barriers to the expansion of renewable energy systems is that many people feel that if they buy from a clean energy source, they somehow are adopting an "alternative" lifestyle to which they are not ready to commit. Unfortunately, the perception here is still that clean energy is primarily a lifestyle statement and only important to those who eat organic foods, drive a hybrid auto or wear jeans and sandals (Makower, 2009).

As noted earlier, the first step in confronting this cognitive bias is to raise awareness that such cognitive filtering occurs for many of us. It is difficult to separate the message from the messenger. The author has found that discussing the scientific method and the relatively self correcting processes of peer review can highlight some of the strengths of science as hypotheses are tested and theory developed. Showing students websites like Sourcewatch.com or Factcheck.org can also be instructive in that resources available on such sites can help one trace the degree to which those commenting on environmental issues have actually submitted their ideas to the scrutiny of peer review. Many times this quick research shows that a given blogger or other self proclaimed expert in the op. ed. pages of a business newspaper often has not been particularly concerned with scientific validation but rather was driven by a particular political ideology. The author has saved a number of such editorial pieces from the Wall Street Journal and other syndicated editorial journalists that have contained blatant scientific errors easily identified through a bit of research in the scientific literature.

One other area where positive illusions bias environmental sensemaking relates to the predictable overconfidence we often have in the accuracy of our judgments (Lichtenstein et al., 1982) and (Washburn et al., 2005). In the context of business decision making, one cost of overconfidence is a reluctance to learn more about a situation or problem before acting. This may also involve a failure to seek additional information to update one's knowledge in terms of new available information (Messick and Bazerman, 1996). Needless to say, this particular

cognitive bias is potentiated by many of the other judgmental biases described above. Within the business context of environmental sensemaking, one can see that the aggregate impact of all of these biases can cause decision makers to discount environmental risk and support business policies that may result in environmental degradation. The nuclear accident at Chernobyl provides one example where such judgmental biases resulted in devastating environmental consequences that will be felt for generations (Plous, 1993).

THE AVAILABILITY HEURISTIC AND ENVIRONMENTAL SENSEMAKING

Another example of the systematic and predictable biases of human judgment that affects environmental sensemaking is the tendency for us to estimate what is more likely and true based upon what is more available in memory - the availability heuristic (Tversky and Kahneman, 1974b). Phenomena that are vivid, unusual or emotionally charged tend to be more salient and weigh more heavily in individual judgment. Consider the following example: more than one billion people worldwide still lack access to safe drinking water. Another 2.4 billion have no access to proper sanitation. As a result, approximately 4 billion cases of diarrheal disease are associated with contaminated water. This causes more than 3 million deaths annually mostly among poor children under the age of five. This is the equivalent of 20 loaded jumbo jets plunging to Earth each day. Needless to say, jumbo jet deaths are more available in memory because they are more poignant and salient (Hart, 2007, pg 52). Similarly, in the period from 1984 to 1986 much more coverage was given to airline crashes and yet fatalities from environmentally caused cancers far outweighed deaths from plane crashes (Greenberg et al., 1989). Another example of availability effects in environmental sensemaking relates to perceptions about pollution problems. Many people believe that municipal solid waste is perhaps the biggest environmental problem. This would include residential paper, plastics and metals that are often times recycled. The problem with this perception is that only 1% of the overall waste stream in our economy is made up of such waste (Makower, 2009). If clear perception of risk and problem scale is a necessary prerequisite to rational decision making such error prone heuristics are enormously problematic.

As noted in our discussion of climate change and its perceived impacts on distant populations, perception of proximate risks impacting our daily lives tends to be more salient and influence judgment more than distal phenomenon and research pertaining to global scale phenomena. As Peter Senge has noted, although such global influences may have profound impacts on humanity and the rest of the ecosphere, many of us still have difficulty understanding and "getting a feel" for such large scale systems phenomenon (Senge, 1990). Impacts on the world's polar regions and glaciated latitudes seems distant and unrelated to our day to day lives. In the language of cognitive science, such phenomena are simply not highly available. The average manager may wonder, "How could the actions of my factory possibly affect the Arctic

ice cap?" In a similar vein, Hart notes that such lack of large scale systems thinking also prevents many business leaders from focusing on pollution prevention versus cleaning up after the fact because such prevention approaches require an understanding of the more distal and larger scale dynamics that are the root cause of such pollution (Hart, 2007).

Another prime example of availability heuristic effects can be seen in the well developed research focusing on the ways in which externalities impacting stakeholders are considered in environmental decision making. When one applies the theories of bounded rationality to environmental sensemaking it is clear that proximate and "available" stakeholders hold the most sway on judgment. For example, the makers of DES only considered its impact on mothers who took it versus the daughters who eventually suffered its negative effects (Messick and Bazerman, 1996). Looking at environmental decisions that produce negative externalities, it is clear that stakeholders who do not evoke strong cognitive availability tend to be ignored by business decision makers (Mcglashan and Williams, 2003); (Jonker and Foster, 2002); (Mittal, 2003) and (Brink and Eurich, 2006).

Another specific manifestation of the availability heuristic is *change blindness*. Here evidence suggests that people are more prone to overlook information about changes that occur gradually (Simons and Rensink, 2005). The relevance of this heuristic to environmental sensemaking is apparent, for example, within the context of global climate change or the depletion of the North American Oglala Aquifer. This change typically occurs so slowly that many people simply will deny its reality. This is a dangerous impediment to rational policy and effective responses from business organizations.

An important variant on this theme relates to the classic "slippery slope" of unethical behavior wherein one is much less likely to notice small incremental lapses that eventually can lead to larger malfeasance (Cain et al., 2005). In the context of corporate environmental responsibility, when our behavior becomes unethical one step at a time, we are less likely to notice than if we abruptly dropped our ethical standards...i.e., the classical slippery slope (Tenbrunsel and Messick, 2004).

One last example of the powerful biasing influences of cognitively available phenomena regards our predisposition to discount impacts of decisions on future generations. As Messick and Bazerman (1996) note, the consequences that we face tomorrow are more compelling than those we must address in the future, especially the distant future (Messick and Bazerman, 1996). Environmental examples easily come to mind to include the challenges of climate change, loss of biodiversity, fresh water access or loss of soil integrity etc. When short term conflict and "news" drive media coverage, this problem is only made worse (Allen, 2001).

In keeping with Fischoff's model described in an earlier section, the first step in combating the negative sensemaking impact of the availability heuristic is to heighten student awareness of its powerful and ubiquitous impact on judgment. The examples noted earlier regarding water quality deaths versus plane crashes and the realities of industrial waste streams

provide vivid examples. The author also asks students to generate other examples where availability distorts perception in predictably biased directions.

Another educational strategy to combat the overweighting of available stimuli is to make environmental impacts more available and vivid. A particularly useful tool here is the video 11th *Hour* hosted by Leonardo DeCaprio. This video is available through the 11th hour website or any Border's bookstore for \$5.00. This production is particularly valuable in relation to the dynamics of cognitive availability because of its dramatic and emotionally riveting video footage used to illustrate environmental degradation. Equally inspiring is its exploration of some of the exciting new approaches used to combat such environmental problems. Clearly the video was designed to have an emotional impact and it undoubtedly accomplishes this goal. The author has used this video as the starting point in a corporate social responsibility class module relating to sustainability and it has proven highly effective. A frequent comment made by students after seeing the video is that it emotionally affected them and caused them to think about things many had never considered. As such, it is a powerful tool to combat the sensemaking lapses caused by environmental phenomenon not being highly available to those of us living in relative comfort and isolation from environmental calamity. Along with the video, it is also helpful to use graphic depiction of such phenomenon as temperature change in the arctic, glacial disintegration etc. These graphic tools can make the slowly accreting phenomenon more available for cognition.

REPRESENTATIVE HEURISTIC AND ENVIROMENTAL SENSEMAKING

This mental shortcut relates to judgment about a presenting environmental stimulus (e.g. extreme weather patterns, loss of particular species etc.) wherein people tend to look for traits the stimulus has that correspond with previously formed stereotypes. Systematic error arises in this case from improperly classifying the phenomena. A simple example of a heuristic error of this type would be a botanist who assigns a plant to one species rather than another based upon simple visual similarities between the plant in question and the class to which the plant was assigned (Nisbett and Ross, 1980). In the context of environmental sensemaking, an example of such error occurs when people confuse short term meteorological phenomena (i.e. the weather) with longer term and more global scale climatic phenomenon. As long as individual decision makers seek to validate their pre-existing beliefs by quoting weather facts (this was a really cold summer therefore climate change is bogus), then necessary mitigation strategies will not be considered seriously. This improper classification of weather phenomenon as being in the same a category as climatic phenomenon can cause people to think about climatic variance as simply a random chance phenomenon because weather is a relatively random phenomenon in any given season.

The educational intervention here is to clearly differentiate climate from weather. Data can be shown that suggests that although there is randomness in various climatic data as well as

other relatively predictable patterns (Pacific Ocean Decadal Oscillations or the North Atlantic Oscillation for example) and yet there is an overall "signal" in the longer term climate data that can be shown to be statistically significant outside the parameters of such cycles.

BIASES IN PROBABILISTIC INFERENCE

Although there is a well developed body of research in this area, in the present instance of environmental sensemaking three heuristic phenomenon seem to be particularly important sources of judgmental error and/or bias: (1) our strong cognitive biases favoring certain data over probabilistic data, (2) base rate biases, (3) insensitivity to small sample sizes and, (4) judgment that discounts the "regression toward the mean" phenomenon.

Messick and Bazerman note that business decision makers have a strong tendency to want to know what will or did happen versus what *might* happen (Messick and Bazerman, 1996). The more general principle is that we find it easier to act as if the world were certain and deterministic rather than uncertain and often unpredictable. Similarly, we often have a need for closure in important matters to escape this feeling of doubt and uncertainty. The author has documented numerous student comments such as, "business leaders need to act on facts…many of the environmental issues you are noting are not "facts" but rather guesses, and as such, business leaders should discount such risk."

A related cognitive bias obtains in situations where decision makers seem much more interested in reducing the likelihood of relatively certain events than relatively uncertain events. As an example, it has been shown that a decision that reduces the probability of environmental harm from say, .01 to zero will be valued more highly than an action that reduces the probability of the same harm from .02 to .01. This research clearly demonstrates that people value the creation of certainty (i.e. the problem was "solved") versus an equally beneficial shift in the level of uncertainty (i.e. our actions reduced the problem by the same increment as the "problem solved" scenario (Slovic et al., 1982).

One of the educational tactics that can be used in this case relates to introducing the concept of insurance as a rational business policy that attempts to lower the negative risk of probabilistic events. The author has approached this as follows. Students are asked, "What is the probability that your house will burn down?" Students respond that this is a very low but measurable probability that will depend on a number of variables relating to location, life style etc. Then students are asked, "What is the rational thing to do in light of this uncertain risk?" They obviously answer that the purchase of insurance is a mechanism that makes sense in this probabilistic scenario. Discussion then moves to illustrating the kinds of "insurance investments" that might be made in given environmental problem areas. In the case of global climate change, if we are not absolutely positive that climate change is anthropogenic, we can nevertheless make certain probabilistic predictions that would lend themselves to the concept of insuring against probabilistic risk. Basically this classroom topic illustrates how proactive decisions can be made

in situations of significant uncertainty...in the common parlance, "hedging your bet". In keeping with research that shows people are more likely to accept a certain loss if they view it as insurance rather than a sure monetary loss, this method of framing makes such rational action more likely (Bazerman and Moore, 2009). This framing also triggers a powerful social norm - how could a responsible business executive not carry insurance?

Another systematic cognitive bias regards what has been termed the "base rate fallacy" and associated errors of inference deriving from overconfidence in small unstable samples (Tversky and Kahneman, 1974b). A very common environmental sensemaking bias relating to climate change arises when a student notes that global warming is not likely because, "We had two really cold summers here in Pleasantville". This systematic bias is exacerbated by the availability heuristic whereby vivid transient phenomenon (e.g. a particularly cold snowy winter) will cause people to ignore base line and slowly trending information (Kanhneman and Tversky, 1972). This problem is often amplified by the "regression toward the mean" statistical phenomenon whereby trends containing extreme measures (e.g. particularly hot summers) will often regress toward the mean in following years. Research shows that individuals often ignore such statistical realities in their probabilistic inference (Bazerman and Moore, 2009). In the environmental sensemaking context, the student may mistakenly rely on a small local sample rather than making judgments based upon global averages where data is drawn from a variety of sampling pools to include atmospheric temperature samples drawn at various altitudes, widely dispersed sampling of ocean acidity and temperature, and longitudinal temperature samples cross validated by convergent meta analysis etc. This heuristic is potentiated by the availability of the proximate information versus slowly moving trend lines in distant locale. Sometimes the more sophisticated climate skeptic will argue that a particular measure (e.g. stratospheric temperatures over Europe) is trending cooler and thereafter contend that this fact negates the whole argument of global warming. This selective cherry picking of data can be exposed by noting the scientific fact that most climate change research actually predicts such local paradoxical effects yet, the overall global trend is unequivocal.

One approach to combat such biases is to show how such heuristic errors occur in everyday life. Bazerman and Moore (2009) provide a number of cases in their book that illustrate such judgmental errors based upon these statistical realities. Once the student is alerted to the dysfunctional impacts of these heuristic phenomena, the instructor can then present environmental data in a way where sample sizes are highlighted and other statistical checks are assured.

FUTURE RESEARCH DIRECTIONS

This monograph has forwarded an approach to promoting environmental responsibility based on the assumption that certain heuristic errors and biases can cause otherwise well intentioned students and business executives to discount and distort information about the natural environment. These heuristic errors were classified and educational methods suggested to counter some of the negative impacts on environmental sensemaking.

Although the author has anecdotally noted the utility of suggested educational methods, no empirical learning outcomes assessment has been conducted to date. Follow-up outcomes assessment research would provide measures of the relative effectiveness of some of the approaches discussed herein. One could introduce some of the educational interventions noted above and then test whether they had an impact upon accuracy of sensemaking and associated critical thinking. Such outcomes assessment could take the form of survey research noting changes in mental models, attitudinal change or improvements in logical inference. Alternatively, student could be given pre and post intervention case analyses and asked to critically evaluate the sensemaking of executives in the given case. Students might also be asked to identify ways in which their judgment might be influenced by various kinds of heuristic error in any given inference and/or judgment.

Although this monograph has focused on environmental sensemaking, it is clear that the principles would apply to any kind of sensemaking facing the business decision maker. Although empirical research regarding cognitive heuristics is well developed in general, it has not necessarily been focused upon ethical discernment and associated ethical decision making. For this reason, there are many opportunities to further elaborate on the theory of bounded ethicality in a variety of decision contexts beyond the realm of environmental responsibility. Research could highlight contexts where bounded ethicality occurs and suggest educational interventions that might mitigate the negative effects of heuristic bias in that particular business context.

This paper has focused on the dynamics of environmental sensemaking as earlier defined. This framing emphasized those cognitive processes of perception, problem detection and risk detection that serve to make any given environmental issue salient to the business decision maker. What was not examined was the full set of decisional processes and behaviors that might occur subsequent to this initial sensemaking. As such, future research might focus on ways in which individual sensemaking might subsequently impact the dynamics of group and organizational decision making. This would clearly acknowledge that individual perception and sensemaking, although critical inputs into the organizational decision making process, are by no means fully determinative of subsequent business policy, especially in the organizational context where a host of group process and political dynamics have significant impact on decision making. In this more expansive modeling such theories as expectancy theory, equity theory and a host of other motivational and organizational behavioral theories could be used to further elucidate decisional behavior. This again does not negate the value of our approach here but only suggests that business environmental policy is governed by a host of exigencies in the business environment (e.g. shareholder expectations, actions of regulatory agencies, stakeholder activism) that clearly influence decision making.
CONCLUSION

A good body of research suggests that clarion calls for corporate environmental responsibility have had limited impact ((Zax, 2009) and (Bird, 2008)). If such impassioned values-based approaches are relatively ineffective, how should the business educator proceed if they believe that business firms should be more cognizant of their responsibilities to the natural world and future generations? How should the business academy proceed with the agenda of sustainability – to meet the needs of the present without compromising the ability of future generations to meet their own needs?

To rise to the challenge of the sustainability imperative, executives must have an accurate knowledge of their world. If their knowledge is deficient, they must have strategies for continually educating themselves as to emerging realities. Messick and Bazerman have referred to such strategies as developing accurate "theories about the world" (Messick and Bazerman, 1996). Perhaps the central responsibility of business educators in this context is the help our students develop rich and relatively accurate "theories of the world" and to promote informed and relatively unbiased judgments about current environmental realities and trends. Although the actual influences on such decision making are highly complex and multi-causal, one area where the educator can have an impact is to help students personally become more aware of some of the systematic biases in their own cognition that might lead them to discount environmental risk or opportunity.

The recent economic crisis has provided educators with a window of opportunity where a variety of sustainability issues can be engaged with much student interest. Clearly, lots of otherwise "smart" people made judgment errors that in retrospect were causally linked to many of the heuristic phenomenon described in this paper. Although such "predictably irrational" behavior is likely to curse mankind many years hence, educational initiatives can be deployed to help minimize disastrous environmental impacts growing out of such flawed decision making. To not attempt such efforts would, in this author's opinion, shirk our responsibilities to future generations.

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MANAGEMENT OF INNOVATIVE E-LEARNING ENVIRONMENTS

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ABSTRACT

Technology is central to every educational institution. Without incorporating technology into every aspect of student activities, no educational institution can expect to succeedor excel. E-learning is designed to provide students with uninterrupted access to education through electronic media. This paper reviews and discusses strategies to enhance the quality of elearning and instruction for freshman by analyzing the e-learning experiences of freshmen students and their instructors. Faculty and student perspective surveys carried out at SUNO during this research revealed potential problems facing students and instructors participating in online courses.

Analysis of students' online grades for three consecutive semesters show that grade point averages increased from 1.04 to 1.13 and 1.23 consecutively. However, freshman retention rates dropped from 296 to 225 to 130 sequentially among students overall, and from 68 to 54 to 33 for online students. Findings from this research may provide educational institutions with necessary strategies to enhance the quality of e-learning and the retention of e-learners.

Keywords: Administrators, E-learning, Orientation, Retention, Assessment, Outcome.

INTRODUCTION

Southern University at New Orleans (SUNO) is an HBCU (95% African American, 2% White and 3% others) open admission institution. The female/male student ratio is 60/40. Traditionally a brick and mortar university, it now offers both ground-based and online courses. With the implementation of e-learning, the number of online classes being offered per semester has increased from 15 before Hurricane Katrina (August 2005) to over 100 at present. Furthermore, the Departments of Criminal Justice, Early Childhood Education and General Studies now offer online undergraduate degree programs. An online graduate program in Museum Studies is also available. The average age of freshman students who took the survey ranged from 17 to 19.

The rapid expansion of e-learning at SUNO has created a need for greater understanding of the online learning dynamic from the perspective of students, of faculty, and of the administration. Earlier studies have paid little attention to real users of e-learning focusing instead on instructors or administrators. As a result, students' needs and demands have often been neglected in studying the design and implementation of e-learning, while administrators' or instructors' demands or assumptions have been the major focus of investigation (Oh, 2003). According to Oh (2003), administrators of higher education tend to view e-learning not from students' perspective, but from an internal organizational or technological prospective. In order to truly understand e-learning, administrators, instructors, and students should all be considered as part of the learning process. As such, educational institutions need to base e-learning programs on real circumstances by periodically examining students' and instructors' needs and attitudes towards e-learning and, on the basis of the findings, suggesting improvements to the e-learning environments.

Lyons (2004) confirmed that many professors use technology in the traditional classroom but would not teach online because they dislike the lack of personal interaction. Other online instructors, according to Lyons (2004), complained that answering emails and participating in discussion boards mean that online teaching takes up more of their time than a traditional class and criticized the attitudes and behaviors of online students who do not take deadlines seriously. The reality of online teaching can be confounding and upsetting and can make a talented teacher feel like an unmitigated failure (Laird, 2003; Lyons, 2004).

Tunison and Noonan (2001) stated that the development of e-learning may have a significant impact on the lives of both students and teachers because it is a form of school improvement and innovation that confronts many of the short-comings of education. New developments in e-learning and increasingly sophisticated learning technologies are beginning to have a major impact in universities. It is clear that universities need to adapt to the impact of technology on learning. Communication technologies that are free from time or space constraints provide new challenges to universities on how courses should be organized (Jones & O'Shea, 2004). Learning in higher education is now presented with hardware and/or software tools that can allow institutions at this level to overcome some of the limitations associated with the lack of linkage between instructors and learners separated by time and place (Oh, 2003). According to Oh (2003), Tony Blair, the then U.K. prime minister once said, "Technology has revolutionized the way we work and is now set to transform education. Children cannot be effective in tomorrow's world if they are trained in yesterday's skills. Nor should teachers be denied the tools that other professionals take for granted." Furthermore, according to the E.A.SY. Project (European Agency for Easy access to virtual campus), institutions of higher education should provide information, training and counseling to students, students with special needs (disabilities), teachers/trainers, tutors, mentors, administrative staff through the effective use of Information Communication Technology (ICT) in order to promote virtual mobility as a complement and/or alternative to physical mobility. The purpose of this research is to review and discuss e-learning strategies used at SUNO to enhance the quality of learning and instruction for first year freshman.

Statement of the Problem

The failure to get adequate attention is often related to the quality of the plans for elearning (Oh, 2003). While e-learning increases access to education, instructional quality often suffers because of increased faculty workload, problems of adapting to technology, difficulties with online course management, insufficient training, and insufficient instructional and administrative support (Cravener, 1999; Carthan, 2007). Rising costs, shrinking budgets, and an increasing need for e-learning are causing educational institutions to re-examine the way education is delivered (Wagner, Hassanein & Head, 2008). According to Weller (2004), cost effective models of large scale e-learning have proven difficult to implement. Depending on the technological infrastructure at an institution, implementation of e-learning courses can involve very costly technology upgrades because e-learning systems require different components such as sufficient bandwidth, course management systems, and technology equipped laptops or computers for instructors (Wagner et al., 2008). Budgetary constraints are a primary problem for many educational institutions. Tight budgets make it difficult to implement broad, campus wide e-learning solutions. Individual departments tend to implement their own solutions, which may not be consistent with the rest of the institution. This reduces the potential for cross-departmental efficiencies, and can complicate the process for faculty, staff, and students, especially if they are involved with more than one department (Wagner et al., 2008). Another important problem is resistance from instructors. Although studies have shown that there is no significant difference between the performance of students in the two methods (Huynh, Umesh, & Valachich, 2003), many faculty members still believe that e-learning is inferior to face-to-face instruction.

Since e-learning presents an entirely new learning environment for students, it requires a different skill set in order to succeed. Critical thinking, research and evaluation skills are growing in importance as students sort through increasing volumes of information from different sources. E-learning requires technical skills from both instructors and students. Online course administration may require instructors to learn new software applications. The use of new technology may be extensive in situations where instructors also create the course content. Arabasz and Baker (2003) suggested that the main challenges of technical support for e-learning initiatives include lack of knowledge of how to adapt instructional design for effective use in courses using technology, and lack of confidence in using the applications to teach.

Instructors take a lot of time to create and manage e-learning courses. Compared to traditional delivery of classes, faculty and support staff spends more hours providing online versions of courses. Unless incentives are provided to encourage instructors to use e-learning technology, resistance to additional workload is likely to continue (Wagner et al., 2008).

Statement of the Objective

This study addresses problems that students and instructors face in the e-learning environment. Based on the assumption that our findings at Southern University at New Orleans (SUNO) are somewhat representative of the state of e-learning at a national level, this study reviews and discusses strategies to enhance the quality of e-learning and instruction in general and at Southern University at New Orleans in particular. Our surveys of faculty and student perceptions revealed actual and potential problems facing students and instructors taking and teaching online classes. Additionally, this research analyzed students' online grades for Fall 2007, Spring 2008 and Fall 2008 to determine if current strategies enhance students' learning. It investigated online students' and teachers' needs in order to determine strategies to enhance the quality of e-learning. This research focuses on questions such as: What factors frustrate faculty when teaching e-learning courses? Do online faculty need more training and in-service orientation? Does the current e-learning platform enhance student participation? Do existing factors in online courses frustrate students or instructors? Results from this study may provide educational institutions with necessary strategies to enhance the quality of e-learning.

REVIEW OF LITERATURE

E-learning is becoming an increasingly popular way for students to take courses and for faculty to teach, with the number of students taking at least one online course growing more than ten times as rapidly as actual enrollments in post-secondary education (Smith, Samors, & Mayadas, 2008). The growing demand for online courses from working adults and the global competition from institutions of higher education have led administrators to modify traditional methods of education delivery in order to sustain long term competitiveness. E-learning offers higher education but are constrained by work schedule, family and/or time (Coppola, Hiltz, & Rozanne, 2002). As demand for online education continues to increase, institutions are faced with developing process models for efficient, high quality online course development (Puzziferro & Shelton, 2008).

The increasing demand for online courses has caught the attention of higher education administrators in traditional brick-and-mortar institutions who want to satisfy adult learner needs in knowledge-based global societies (Chen, Gupta, & Hoshower, 2006).However, much remains unchanged. The vast majority of online courses are organized in the same manner as their campus counterparts: developed by individual faculty members, with some support from the IT staff, and offered within a semester. Most follow traditional academic practices ("Here is the syllabus, go off and read or do research, come back and discuss"), and most are evaluated using traditional student-satisfaction methods (Twigg, 2001). The problem with applying old solutions to new problems in the world of e-learning is that these applications tend to produce results that

are "as good as" what has been done before – what is often referred to as the "no significant difference" phenomenon (Twigg, 2001). Some researchers have expressed concern about the learning outcomes of e-learners, but a review of 355 comparative studies reveals no significant difference in learning outcomes, commonly measured as grades or exam results, between traditional and e-learning modes of delivery (Russel, 2001). According to Twigg (2001), "It's not providing student services online; it's how you provide student services online." Institutions of higher education need strategies or approaches that produce more significant differences.

Online instructors need to move beyond traditional pedagogy and adopt new, more facilitative practices. Instructors of higher education institutions need to move beyond using the internet to deliver standard classroom models. Instead, they should focus on developing ways to use the internet to develop a "richness" that enhances education (Smith, 2005). They should be able to effectively use technology that has been selected for course delivery before the first day of class as this will continue to play an important role throughout the course (Smith, 2005).

The development and availability of information communication technology is significantly changing the way e-learning courses are conducted. The increase in information and communication technology available for instructional design and delivery, and technologysupported learning models, are eroding the dominance of traditional classroom learning (Oh, 2003). Additionally, Oh (2003) stated that colleges and universities are the most wired communities on the Web, with more than 90% of college students accessing the internet, 52 % daily. The internet has enabled tremendous innovation in the delivery of post-secondary education (Wagner, Hassanein & Head, 2008). The increasing use of information communication technology challenges historical classroom and instructional models of how teaching and learning are conducted. For technology supported learning, the most important concerns are how content is prepared, how and to what extent person-to-person interactions are arranged, and how the whole learning environment matches learner needs (Oh, 2003). The degree of interaction among participants in online courses is widely acknowledged to be an indicator of successful learning experiences. Interaction contributes to both achievement and student satisfaction. Thus, providing better interaction is an important means of assuring course quality (Roblyer & Wiencke, 2004).

E-learning Dimensions

The use of e-learning technology in delivering courses varies broadly. Table 1 shows variations in the configuration of e-learning offerings described through a number of attributes which can be categorized into the dimensions of synchronicity, location, independence, and mode. E-learning can be synchronous (real-time) or asynchronous (flex-time). Synchronous e-learning, which includes technology such as video conferencing and electronic white boards, requires students' presence at the time of content delivery. Asynchronous e-learning, which

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includes programmed instruction and tutorials, allows students to work through the screens at their own pace and at their own time (Wagner et al., 2008).

		Table 1: E-learning Dimensions	
Dimension	Attribute	Meaning	Example
Synchronicity	Asynchronous	Content delivery occurs at different time than receipt by student.	Lectured module delivered via email.
	Synchronous	Content delivery occurs at the same time as receipt by student.	Lecture delivery via web cast.
Location	Same Place Students use an application at the same physical location as other students and/or the instructor.		Using a Group Support System (GSS) to solve a problem in a classroom
	Distributed	Students use an application at various physical locations, separate from other students and the instructor.	Using GSS to solve a problem from distributed locations.
Independence	Individual	Students work independently from one another to complete learning tasks.	Students complete e-learning modules autonomously.
Independence	Collaborative	Students work collaboratively with one another to complete learning tasks.	Students participate in discussion forums to share ideas.
	Electronically	All content is delivered via technology. There	An electronically enabled e-
Mode	Only	is no face-to-face component.	learning course.
	Blended	E-learning is used to supplement traditional classroom learning.	In class lectures are enhanced with hands-on computer exercises.
Source: Wagner,	Hassanein, & Head, 2	2008	

Wagner et al. (2008) elaborate that a single course component consists of a single attribute value from each dimension, but a course may contain several components, each with different attribute values. For instance, some components of a course may be delivered synchronously and others asynchronously. However, most courses available on the internet are based on the asynchronous model (Greenagel, 2002). Asynchronous e-learning, commonly facilitated by email and discussion board, supports work relations among learners and between teachers and learners, even when participants cannot be online at the same time. This is a key component of flexible e-learning (Hrastinski, 2008). With asynchronous e-learning, learners can log on to an e-learning environment at any time and download documents or send messages to teachers or peers. Students may spend more time refining their contributions, which therefore are usually more thoughtful than those in synchronous communication (Hrastinski, 2008).

Moreover, e-learning creates access to higher education that students would not have otherwise because of geographic or time constraints (Kabassi & Virvou, 2004). As high-speed internet access and computing power increase, more organizations are turning to collaborative and synchronous software for e-learning in which users in geographically distant locations work together online, share documents and applications, and use video and audio to communicate in real time (Beck, 2007). Synchronous e-learning, commonly supported by media such as video-conferencing and chat, has the potential to support e-learners in the development of learning communities. Learners and teachers experience synchronous e-learning as more social and less

frustrating since they can ask and answer questions in real time. Synchronous sessions help elearners feel more involved and less isolated. "Isolation can be overcome by more continued contact, particularly synchronously, and by becoming aware of themselves as members of a community rather than as isolated individuals communicating with the computer." (Haythornthwaite & Kazmer, 2002).

Instructional Strategies

Effective teaching begins with effective planning (Ekwensi, Moranski, & Townsend-Sweet, 2006). Planning includes determining the instructional strategy to be used in order to deliver the instruction and achieve the learning objectives. These strategies are usually tied to the needs and interests of students to enhance learning. The following instructional strategies can be used in an e-learning environment:

Mentorship: One-on-One

This is a one-on-one learning relationship between a student and an expert in a specific topic or discipline for the purpose of supporting learning and development. In e-learning, mentorship is a reciprocal and collaborative learning relationship between a mentor and a student. It combines the impact of learning with the compelling human need for connection (Ekwensi et al., 2006; Wilson, 2006; Wisker, Exley, Antoniou, & Ridley, 2007) through email, instant messenger, conferencing or text messaging.

Small Group Work

This is the root of online learning. Students in a small group situated in an online learning environment have the ability to research at their own pace. Many of the programs used for online courses, such as Centra, facilitate online learning and training, enabling users to share knowledge and skills. Group work increases learners' ability to better organize and manage their thoughts and research (Ekwensi et al., 2006; Rana, 2005).

Projects

Projects can be assigned on an individual or group basis. Assigning projects is a great instructional strategy. An individual research project gives a student an opportunity to research topics of interest. This strategy provides the student with the experience of working through the process from the beginning to the end. Projects in a group atmosphere are also effective in creating a dynamic learning environment. When individual projects are completed, the instructor has the option to keep project results private. A more effective strategy, however, is to have the

instructor or the students share their results with the rest of the class. In this way, each class member is provided with honest feedback that will serve him or her in future projects. In addition, feedback from the class is from numerous people with different points of view, which gives students a wider range of input than the instructor alone can provide. Students learn to collaborate together and share their own distinct views to discover a common solution (Ekwensi et al., 2006). According to Thomas (2000), projects involve students in a constructive investigation which is a goal-directed process that involves inquiry, knowledge building, and resolution. Such investigations for example, could be design, decision-making, problem-finding, problem-solving, discovery, or model building process.

Collaborative Learning

This commonly used strategy creates a dynamic online learning environment. It involves the interaction between two or more students with different skill set levels. This variety of levels enables students to learn from their peers. Students help each other by putting the new information in perspective for the learner so that the learner can relate to it and remember it. This instructional strategy is deemed so useful in the online environment that "collaborative learning methods are now used in over a third of higher education courses" (Ekwensi et al., 2006; Stairs, 2002; Young, 2009). Through collaborative learning students learn to work well in a group environment and to enhance their communication and critical thinking skills.

Case Study

This strategy involves the learners' past experience, while the case's outcome involves the learners' future. In order to create an effective learning environment, students must have access to the problem they are studying but not the solution until they reach their own conclusions. Then, students can compare their results with results of actual decisions used to solve the problem in the study. Discussion sessions can be accomplished in the online learning environment through Adobe Acrobat Connect Professional (Beck, 2007), Centra, and other online collaboration applications as a means of sharing information so students can later apply this new knowledge. This interaction can be presented by groups to the rest of the class and discussed through email or online conferencing. Case Study strategy relies upon the active participation of a host of contributors in a union established to achieve a community result greater than that which could be attained by individual effort (Rosenthal, 2002; Ertmer & Stepich, 2002; Waterman & Stanley, 2005).

Learning Contracts

This is an agreement between the learner and the instructor that details the learning objective, as well as how that objective will be met. While the objective is provided by the instructor, the student's responsibility is to write and carry out the actual content of the contract. The final document can be negotiated by the student and the instructor in order to provide a meaningful learning experience that meets the expectation of the instructor (Ekwesi et al., 2006). According to Codde (2006), learning contract is an alternative way of structuring a learning experience. It replaces a content plan with a process plan and solves or reduces the problem of dealing with wide differences within any group of learners. As such, every instructor should develop the syllabus as an actual contract between the instructor and the students describing upfront the expected outcomes and how shared responsibility for learning translates in terms of successfully completing the course (Kilmurray, 2003).

Lecture

The lecture strategy for instruction is the model that requires the most of the instructor in an e-learning environment. This strategy assumes the instructor to be the subject matter expert who lays the foundation for students. Lectures provide a basis of subject knowledge on which other knowledge, such as declarative, procedural, and conditional knowledge can be built (Hardy, 2002). A good lecturer must know how to differentiate the lecture materials to meet the individual needs of the students.

In the e-learning environment, lectures can take many forms. A complete set of lecture notes can be presented as a web page or offered as a PDF or as a Microsoft Word file that can be played directly from the source or offered to the learner as a download. Lectures may also be recorded and offered in a Podcast format, as a PowerPoint presentation, or as a flash file. With graphics, animation, sound, etc., the lecture can be made into a multimedia presentation or presented in streaming video, in an effort to motivate the learner and appeal to different styles of learning. Clark & Pitt (2001) suggest that no lecture should exceed twenty minutes: sufficient time to provide enough information to serve as a basis for further study.

Discussion

This is the most favored of all instructional strategies because it is interactive and encourages active, participatory learning. Students in an online learning environment are always isolated so discussion is particularly important for them: it facilitates a feeling of belonging to a group which is critical to success in education (Herring &Dargan, 2002). The following are some benefits of discussion:

It provides teachers with a tool for increasing interactivity in both online and face-to-face courses (Bannan-Ritland, 2002; Brown, 2001; Healey, 1998; Klemm, 1997).

It helps to build a learning community over time (Brown, 2001).

- It enhances the learning process by creating more opportunities for active learning and collaboration (Klemm, 1997; Land &Dornisch, 2002; Landsberger, 2001). Additionally, discussion provides learners with opportunities to write and reflect on course content and previous postings (MacKnight, 2000; O'Sullivan, 2001; Rothermel, 2001).
- Since it helps learners to construct knowledge, itfits in with the constructivist view of a learner-centered classroom, whether physical or virtual (Campos, Laferriere, &Harasim, 2001).

The instructor manages a discussion by assuming the roles of e-moderator, facilitator, and role model (Landsberger, 2001).

Possible Problems with Discussion

Many teachers who use discussion in e-learning may not have any formal training in how to use online course delivery technology (Herring &Dargan, 2002). They may not anticipate some of the common problems as listed by Branonand Essex, (2001):

- Students not responding to other students in a timely manner. Everyone likes feedback: students may be disappointed if they take time to respond to the teacher's prompt, and no one else does for a few days.
- Students not checking the discussion board often enough. If students do not log on for a week, they may be overwhelmed by seeing a number of messages, or they may miss deadlines for postings and give up.
- Students or teachers not understanding the amount of time needed for discussion to *mature*. In the early weeks of a new semester, there is a tendency for postings to be more introductory in nature. People may be reluctant to open up or not accustomed to responding to others.
- Students feeling socially disconnected. Some students may not feel comfortable with doing their postings. English as a Second Language students, students with limited access to computers or students who prefer lots of social interaction may feel separated from class members.

Branon and Essex (2001) suggest that students should work in groups, and that instructors should summarize rather than respond to each person, and give feedback to peers as assigned. In addition, it is important to give students clear instructions on how to post and respond, and to use tools that notify students of new postings.

METHODOLOGY

The purpose of this paper is to review and discuss strategies to enhance the quality of elearning and instruction. Offering a course online does not in itself guarantee the quality of teaching and learning. E-learning may help students to access learning opportunities but it is not likely to prove successful unless it is cautiously and properly designed. One important factor in designing an online class is to understand instructors' and students' expectations. To this end, two perception surveys on freshman students and instructors were conducted at the end of the fall semester in 2008, in which 82 freshman students and 46 instructors responded.

Freshman Students and Faculty/Instructor Perception Surveys

The survey consisted of ten statements for freshman students and ten statements for instructors. These statements of interest were associated with the overall picture of e-learning.

Data analysis was accomplished by using the arithmetic means: $mean = \frac{\sum_{k=1}^{n} x_k}{n}$ to measure the central tendency of the respondents as shown in Table 2. Freshman students were required to mark strongly agree (SA); agree (A); neutral (N); disagree (D); or strongly disagree (SD) in response to the following statements:

I have full access to a personal computer and internet. I understand how to access Blackboard which is required to navigate my online courses. I have adequate course assistance from my instructor and the e-learning administrators. Software on the Blackboard prevents students from cheating. Taking courses online motivates me as a student. Existing factors in online classes frustrates me as a student. I participate in discussion sessions posted by the instructor. Online teaching and practices need improvement. SUNO has a motivated and committed online education. Online students need more training and in-service orientation.

Table 2 (Statements # 1, 2, 3, and 7) shows that students are satisfied. However, Statement #4 shows that students are not familiar with the options that Blackboard can provide to the instructor to prevent students from cheating. Statement #5 shows that students need new means of motivation. Statement #6 shows that students do not have adequate knowledge to utilize the online learning mode. Statement #8 shows that students need improvement as shown

	Table 2: Students' Perceptions of Online Courses								
Statement	SA	А	N	D	SD				
1	57.5%	13.8%	16.1%	3.8%	8.8%				
2	63.4%	18.3%	8.6%	7.3%	2.4%				
3	23.8%	31.3%	32.4%	10.0%	2.5%				
4	21.3%	23.8%	45.0%	6.3%	3.8%				
5	11.3%	8.8%	48.6%	21.3%	10.0%				
6	11.0%	17.1%	58.5%	7.3%	6.1%				
7	25.9%	29.6%	27.3%	12.3%	4.9%				
8	19.8%	16.0%	54.3%	9.9%	0.0%				
9	12.2%	22.0%	59.7%	4.9%	1.2%				
10	15.0%	23.8%	55.0%	3.7%	2.5%				
Average	26.12%	20.45%	40.55%	8.68%	4.22%				

in the proposed model (Figure 6). Statements #9 and #10 show that SUNO administrators need to provide the means to adequately train students and to enhance their level of motivation.

Table 3shows faculty's perception of online teaching. Instructors were asked to respond strongly agree (SA); agree (A); neutral (N); disagree (D); or strongly disagree (SD) to the following statements:

The expectations of students who earn grades in e-learning courses are realistic.

The current e-learning platform is adequate to enhance student participation.

The software currently used prevents cheating in e-learning courses.

E-learning is user friendly at SUNO.

Faculty members teaching at SUNO are motivated.

There are major factors that frustrate faculty when teaching e-learning courses.

Faculty hold adequate discussion sessions in e-learning courses.

Online teaching and learning practices need improvement.

SUNO has a motivated and committed online education.

Online faculty need more training and in-service orientation.

Table 3 (Statements # 1, 6, 8, and 10) shows that faculty agree with the statements. However, Statement # 2 shows that the current e-learning platform needs improvement. Statements #3, 4 and 5 show that instructors need more training on how to utilize the options available on Blackboard to make their courses both exciting and user-friendly. Additionally, the school does not provide incentives to faculty who teach online. Due to large class size, over 50% of instructors do not hold adequate discussion sessions. Statement #9 shows that instructors are not motivated due to lack of resources.

Table 3: Faculty's Perceptions of Online Courses								
Statement	SA	А	N	D	SD			
1	13.3%	42.2%	22.2%	15.6%	6.7%			
2	11.1%	35.6%	15.6%	26.7%	11.1%			
3	4.5%	25.0%	36.4%	22.7%	11.4%			
4	11.4%	38.6%	18.2%	18.2%	13.6%			
5	11.1%	33.3%	24.4%	15.6%	15.6%			
6	31.8%	38.6%	16.0%	0.0%	13.6%			
7	9.1%	22.7%	40.9%	18.2%	9.1%			
8	40.0%	42.2%	9.0%	4.4%	4.4%			
9	4.4%	28.9%	33.4%	11.1%	22.2%			
10	45.5%	40.9%	6.8%	2.3%	4.5%			
Average	18.22%	34.80%	22.29%	13.48%	11.22%			

Differences in students' and faculty's perceptions of online courses are evident in an analysis of Tables 2 and 3:

- About 55.1% of freshman students are satisfied with instructors' online course assistance (Student: Statement #3)while faculty claimed that only 31.8% of them hold adequate discussion sessions in e-learning courses (Faculty: Statement #7).
- About 28.1% of freshman students and 70.4% of instructors are frustrated by existing factors in online courses (Student: Statement #6, Faculty: Statement #6).
- Only 35.8% of freshman students agreed that online teaching and learning need improvement, 82.2% of instructors argued for improvement (Student: Statement #8, Faculty: Statement #8).
- 38.8 % of freshman students and 86.4% of instructors favor more training and orientation for students and faculty (Student: Statement #10, Faculty: Statement #10).

These findings show that administrators of e-learning in educational institutions need to improve students' and instructors' skills and methods of online education delivery. Improving students' skills will enable them both to more critically evaluate the learning process and to learn better in the e-learning environment; enhancing faculty skills will make the e-learning environment more exciting and conducive to quality learning. Developing strategies for effective course management should be a collaborative effort by both instructors and universities/colleges (Oh, 2003). In addition, students should be trained to learn prior to taking e-learning courses. SUNO has begun implementing this process by mandating that students may not take e-learning courses without prior experience in them or without having first familiarized themselves with the university environment.

The e-learning department at SUNO which offered 15 courses per semester before Hurricane Katrina (August 2005) now offers more than 100 courses per semester. The survey indicates that

the department needs both to expand course offerings and to improve services and opportunities for faculty and students. Currently, students and faculty do not get enough training from the elearning department. To ensure the future of e-learning, faculty must keep abreast of e-learning technologies as well as with the latest thinking on the social and psychological factors that influence e-learning. This is best done through developmental processes that include research, attending conferences, workshops, etc. Moreover, the administration should ensure, through a continuing forum, that continuing faculty development is effective and that the model shown in Figure 6 is implemented.

Data Analysis of Students' Grades

Data was obtained from the Information Technology Center (ITC) for students who took online courses at Southern University at New Orleans in Fall 2007, Spring 2008, and Fall 2008. SPSS Statistics17.0 and Microsoft Excel 2007 software were used to analyze the data in order to examine the rate of students' passing to failing. A, B, C, and D are passing grades, whileF is a failing grade. A Single Factor ANOVA was conducted to determine any significant statistical differences in mean grade over the three semesters. Tables 4, 5, and 6 show online grade distributions for Fall 2007, Spring 2008, and Fall 2008 freshmen. The F grade representsan academic failure (F) as well as failure due to excessive absence (FX).

Table 4: Fall 2007 Freshman Grade Distribution								
No. of Students	Grade	Frequency	Percent					
68	A	11	10.5%					
	В	15	14.3%					
	С	8	7.6%					
	D	4	3.8%					
	F	67	63.8%					
Total		105	100.0%					

Table 5: Spring 2008 Freshman Grade Distribution								
No. of Students	Grade	Frequency	Percent					
54	А	14	14.9%					
	В	9	9.6%					
	С	10	10.6%					
	D	3	3.2%					
	F	58	61.7%					
Total		94	100.0%					

Table 6: Fall 2008 Freshman Grade Distribution								
No. of Students	Grade	Frequency	Percent					
33	A	6	10.7%					
	В	8	14.3%					
	С	8	14.3%					
	D	5	8.9 %					
	F	29	51.8%					
Total		56	100.0%					

Table 7 served as grading scales that were used to formulate the salient statistics.

Table 7: Coding of Grades						
Grade	А	В	С	D	F	
Code	4	3	2	1	0	

Salient Statistics

Salient statistics show that the online grade average (mean) increased from 1.04 (Fall 2007) to 1.13 (Spring 2008), and 1.23 (Fall 2008). In this study, a Single Factor ANOVA was conducted to test the hypothesis as shown in Table 8.

Table 8: ANOVA: Single Factor							
Groups	Count	Sum	Average	Variance			
Fall 2007	105	109	1.038095238	2.248534799			
Spring 2008	94	106	1.127659574	2.456646076			
Fall 2008	56	69	1.232142857	2.181493506			
		ANOVA					
Source of Variation	SS	df	F	P-Value			
Between Groups	1.404	2	0.702	0.304			
Within Groups	582.30	252	2.311				
Total	583.70						
F Crit			0.073	3.032			

The *p*-value of 0.738257811 shown in Table 8 is greater than 0.05. Thus, the difference across the three semesters is not significant.

Retention Statistics and Trends

The transition from high school to college is fraught with difficulties for many students. The inability to adequately manage time, to prioritize commitments, to motivate themselves, to clearly set goals and abide by them, to meet university academic standards, to adapt to their new social and academic environment, and financial difficulties, are only some of the factors that cause lower-than-acceptable performance. This is especially true for e-learners who, when lacking motivation or time-management skills, tend to fail or drop out more frequently than do other students. These factors translate into a need for increased academic and personal counseling programs to improve student retention (Salinitri, 2005). In a survey of 4,100 learners, Corporate University Xchange found that "85 percent dropped out of online courses versus 15% who dropped out of traditional face-to-face classrooms in 2001" (Alexander, 2002). In a similar study, one higher education institution reported a "58 % completion rate in the same courses offered in a traditional classroom setting" (Carr, 2000).

Table 9 shows that freshman (online and on-campus) percent rate dropped at Southern University at New Orleans.

Table 9: Number of Freshman Students							
Semester No. of Students % Loss							
Fall 2007	296	-					
Spring 2008	225	24%					
Fall 2008	130	42%					

Table 10 shows the dropout percentage of freshman taking online courses.

Table 10: Number of Freshman Online Students							
Semester Online Students % Lo							
Fall 2007	68	-					
Spring 2008	54	21%					
Fall 2008	33	39%					

FINDINGS

Table 11 shows instructors' and students' perceptions of teaching and learning online.

Table 11: Satisfaction with e-learning										
Statements	S	tudent	Percept	tion (%)	Instructor Perception (%)				
	SA	А	Ν	D	SD	SA	А	Ν	D	SD
Instructors offer adequate course assistance/discussion	23.8	31.3	32.4	10.0	2.5	9.1	22.7	40.9	18.2	9.1
Existing factors in online course are frustrating	11.0	17.1	58.5	7.3	6.1	31.8	38.6	16.0	0.0	13.6
Online teaching and learning need improvement	19.8	16.0	54.3	9.9	0.0	40.0	42.2	9.0	4.4	4.4
Online students/faculty need more training and orientation	15.0	23.8	55.0	3.7	2.5	45.5	40.9	6.8	2.3	4.5

About 55.1% of freshman students agree that instructors offer adequate course assistance, while only 31.8% of instructors agree that they offer adequate course assistance/discussion; 40.9% of instructors are undecided. Instructors' comments from the survey read "Those of us who are older faculty members have knowledge but still need more intense training on Blackboard as do the older students. We need additional trainers/support personnel." In addition, "The faculty assigned to teach online courses should be well prepared in advance of the start of the semester or term he/she is teaching. It is not acceptable to have a faculty member assigned to the course a day before or a week after the session begins."

About 28.1% of students and 70.4% of instructors are frustrated by existing factors in online courses while 58% of students are undecided. In SUNO's survey, an instructor commented, "As an online instructor, all of my courses have more than 25 students enrolled. This factor affects quality education. Exams are made as multiple choice/True and False questions so that I can realistically grade all 55 students' assignments for each module. SUNO should enforce the rule of thumb as the Tennessee consultants recommended that only 25 or fewer should be enrolled in each class. This will definitely help the quality of online learning."

Though 54.3% of students are undecided on online teaching and learning improvement, 35.8% of students and 82.2% of instructors agree that online teaching and learning need improvement. This finding is supported by an instructor's comment from the survey, "The system has too many bugs, crashes, and other technical issues. Also I think that online proficiency assessment should test students [*sic*] ability to read & follow directions regarding how online classes will be conducted. Also, e-learning should look into Model and other competitors."

The survey shows that 38.8% of students and 86.4% of instructors agree that both students and faculty need more training and orientation. In SUNO's survey, an instructor commented "Training should be on-going [*sic*] and not just aimed at beginners. Additional platforms (for instance, Second Life) should be explored and utilization encouraged, as appropriate. Effort must be accompanied with rewards." Further, a student commented "There should be more professors that are strictly online professors. This would give them a better opportunity to concentrate on learning the Blackboard system and therefore being able to offer a better experience to online students. Some professors are not sure how to utilize the system to its fullest potential. So, it is difficult to expect the students in those classes to perform at the best of their ability."

Student/Instructor Perceptions vs. Online Grade Distribution

Results from Figures 1 and 2(see appendix) combined, when compared to online grade distribution, reflect a pattern in grade distribution across the three semesters. It can be argued that due to instructors' inadequate course assistance (40.9% neutral), frustrated instructors (70.4%) due to existing factors in online courses, lack of improvement in online teaching and

learning (82.2% for instructors, 35.8% for students), and lack of orientation and training (86.4% for instructors, 38.8% for students), student performance was greatly affected in all three semesters as shown in Figures 3, 4, and 5 (see appendix).

In Fall 2007 (Figure 3) 67.6% of students made D and F grades. Only 24.8% earned A and B grades and 7.6% earned a C grade.

According to Figure 4(Spring 2008) 64.9% of students earned D and F grades;10.6% earned a C grade which reflects a 3% increase compared to Fall 2007. Though A grades from Fall 2007 to Spring 2008 increased by 4.4%, the 24.5% the combined A and B grades in Spring 2008 represents a 0.3 % drop from Fall 2007.

Figure 5 shows that students' performance improved in Fall 2008. About 60.7% of students earned D and F grades (an improvement of 4.2% from Spring 2008). C grades from 10.6% in Spring 2008 to 14.3% in Fall 2008, increased by 3.7%. Further, 25% of students achieved A and B grades, representing a 0.5% increase from Spring 2008.

Causes of grade improvement in Fall 2008 may be investigated in future surveys to determine reasons for improved student performance.

PROPOSED MODEL

It is evident that there is a lack of significant improvement in students' performance and retention(the numbers do not reflect a significant improvement in student performance and retention.)Thus, new and innovative directions/approaches are necessary to ensure improvement in learning outcomes. Instructors offering online courses or face-to-face traditional classes can motivate students and enhance the learning outcome by supporting and facilitating the learning process. Figure 6 illustrates future modules for assessing students' learning processes with the online instructor acting as a motivator to enhance student's outcome.

As demonstrated in Figure 6, the instructor enhances online learning by implementing new software in order to redesign the delivery of online courses (1A), by creating effective presentations with voice and animations (1B), and by learning how to use new tools to organize, prepare, teach and monitor the online class (1C). These processes enable the instructor to establish and encourage online students' learning outcomes through innovation, collaboration and implementation of new ideas.

Assessment in the "Student" column is based on the student's demonstration of critical thinking ability (2A), an illustration of collaborative effort by using chat rooms, etc., to implement the learning process (2B), and the incorporation of new ideas to improve the learning process (2C). A student who follows these learning processes should be able to demonstrate an improved learning ability (2D).

Students should benefit from these enhanced learning methods and will be graded accordingly. This process should be replicated in such a way that both students and faculty

advance their intellectual skills. Implementing such a technique should improve the student's learning process and retention (Omar, Kalulu, & Bhutta, 2008).

As information technology advances, it is critical that faculty and students keep themselves up-to-date. In order for the proposed model to work, both E-learning and Information Technology departments have to encourage and support professors' attempts to enhance online teaching. Furthermore, colleges and universities should find possible ways of securing finances in order to support IT and e-learning projects. Additionally, it is vital that institutions of higher education hire knowledgeable IT and E-learning staff who can determine optimum ways to implement technology into a school's individual curriculum. Also, it is essential to provide an excellent testing space or environment for online faculty to carryout e-learning experiments. Offering these technological opportunities should make professors innovative in online teaching.

CONCLUSION

Student data from SUNO's Information Technology Center for Fall 2007, Spring 2008, and Fall 2008 were analyzed to determine whether significant differences emerged in online courses across the three semesters. Microsoft Excel 2007(ANOVA) and SPSS Statistics17.0 were used to analyze the data; findings indicated that online grade point averages increased from 1.04 to 1.13 and from 1.13 to 1.23. ANOVA single factor analysis gave a *p*-value of 0.738257811, which was greater than 0.05, indicating no significant difference across the three semesters.

The e-learning department at SUNO, which offered 15 courses per semester before Hurricane Katrina, now offers more than 100 courses per semester. Despite this growth, our survey indicates that the department needs to expand even further and to provide better services and opportunities for faculty and students. Currently, the training provided to students and faculty by the e-learning department is inadequate, which accounts for some of the high failure rate relative to ground-based courses. To enhance online teaching, the administration should ensure that faculty members keep their knowledge of e-learning current through developmental processes such as research, attending conferences, workshops, etc.; should provide a continuing forum in which faculty members keep abreast of recent thinking about e-learning (social, technological, psychological etc.); and should implement the proposed model depicted in Figure 6.As a first step in an overall strategy to improve e-learning at SUNO, the administration has implemented the policy that new freshman starting in Fall 2009 should not take online classes until they become familiar with university environment.

As long as institutions of higher education continue to replicate traditional approaches online and to treat all students as if they were the same, the "no significant difference" phenomenon will continue. As administrators or instructors consider ways to design more effective online learning environments, they should think of students as individuals and not as homogeneous groups.

RECOMMENDATIONS

Instructors and students who are motivated, prepared and supported are more likely to succeed in e-learning. Generally, it is unreasonable to expect experienced face-to-face instructors to function well in an online environment without specific training. These instructors should be assisted in transitioning to the online environment, trained and mentored, and provided with written resources about problems that are likely to arise in online courses (Phipps &Merisotis, 2000). Primary and ongoing training, mentoring, and assessment of effectiveness are critical to the success of online learning and teaching. Instructors' training should be facilitated by hands-on, face-to-face lab sessions to assist them in the initial exploration of online learning management systems. The online delivery will provide opportunities for prospective online instructors to experience the anxiety, uncertainty, and other challenges that new online students encounter. In addition, during the primary training, colleges and universities should initiate a support forum facilitated by an experienced online instructor (Smith, 2005). This implementation will enable instructors to engage in collaborative learning through online discussion, thereby forminga mutual support community and encouraging communication among all instructors.

Instructors may need to teach students about online learning, especially in courses that have many new online students (Palloff & Pratt, 2001), in order to promote active learning techniques (Moore, Winograd, & Lange, 2001). Instructors should accomplish this without overwhelming new students who may not be familiar with the online learning platform, the software needed to support learning, the policies and procedures of the institution, the basic study methods, and the uncertainties inherent in electronic communication that may generate fear and anxiety (Smith, 2005).

Instructors must maintain the momentum of the course (Coghlan, 2008) by confronting students who are not participating (Palloff & Pratt, 2001) or are disruptive (Ko& Rosen, 2001). As facilitators, instructors should focus not only on course content but also on development of an online community which encourages peer interaction. Student-to-student and student-to-instructor interactions are essential to the success of e-learning.

E-learning is an increasingly sophisticated tool for teaching students valuable new skills and upgrading their proficiencies as well as exposing them to new products and services, equipment and procedures.

LIMITATIONS AND FUTURE STUDY

This study only compared online grades for freshman students at SUNO across three semesters. Further surveys are needed to investigate the challenge facing institutions if they are to continue with quality online courses and reduce retention drop rate. Additionally, institutions should conduct research designed to determine the most efficient and effective paths for online students in order to enhance student retention, critical thinking and outcome.

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APPENDIX



Figure 1: Student Perception



Figure 2: Faculty/Instructor Perception

Figure 3: Fall 2007 Online Grade Distribution





Figure 4: Spring 2008 Online Grade Distribution



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RECALL AND THE SERIAL POSITION EFFECT: THE ROLE OF PRIMACY AND RECENCY ON ACCOUNTING STUDENTS' PERFORMANCE

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ABSTRACT

This study investigates whether or not the serial position effects can be observed in a classroom setting where students have to recall a larger amount of information over a longer time frame. This study also looked at the teaching and test item presentation order effects on the students' performance. Contrary to some prior studies, we did not find any order effect on students' performance. With respect to the serial position effects, we found primacy effects to be stronger than recency effects. The authors discuss the results and their implications as well as areas for further research.

Key Words: Primacy Effect, Recency Effect, Serial Position Effect, Order Effect, Recall, Proactive and Retroactive interference, association effect, dual store memory effect, Disciplines of Interest: Interdisciplinary

INTRODUCTION

The serial position effect is the phenomenon in which faster learning and greater recall of items occur at the beginning (primacy effect) and end (recency effect) in comparison to items at the middle of a list. The majority of the research on the serial position effect has been conducted under laboratory conditions in which subjects had to learn and recall words, consonant trigrams, nonsense syllables or number sets (Ebbinghaus, 1885; Foucault, 1928; Glenberg, Bradley, Draus, & Renzaglia, 1983; Ladd & Woodworth, 1911). Outside of the laboratory setting, Kurbat, Shevell, & Rips (1998) found that college students tended to recall personal experiences that occurred at the beginning and end of the semester better than those experiences that occurred in the middle of the semester.

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Some prior studies have examined the effects of the order by which test questions are arranged whether in the order of difficulty (Paretta & Chadwick, 1975; Howe & Baldwin, 1983) or in the order by which the concepts are taught (Baldwin & Howard, 1983)) on students' performance. Studies concerning order effect are relevant to accounting education because they address the influence of content delivery on student learning. For example, Rebele, Stout, & Hassell (1991) reviewed several articles on course delivery and teaching methods and suggested that evidence regarding the impact of alternative teaching methods is, for the most part, The current study investigates whether or not the serial position effect can be observed in a realworld classroom setting where students have to learn, comprehend, and recall a large amount of related information over an extended time frame. Specifically, we tested the recall of information as a function of the order in which the material was presented in an undergraduate accounting course. The content of the course studied was divided into modules of relatively equal levels of difficulty and presented to the students by the same instructor; the order in which the modules were presented was varied. We examined the serial position effect, the order of content delivery, and the order in which exam questions were presented as predictors of student performance in the course. The result of this study will provide insight into interdisciplinary strategies that can be used to teach and test students to enhance their performance in relevant accounting courses.

PRIOR RESEARCH

There is very little in the literature on the role of the order effect, recency effect or primacy effect on the performance of accounting students. Some prior studies have investigated the effect of alternative test question sequencing on students' performance. For example, some researchers have investigated the effects of question sequencing by the order of difficulty of the questions (Paretta & Chadwick, 1975; Howe & Baldwin, 1983). While Paretta and Chadwick (1975) found a significant order effect on the students' performance, Howe and Baldwin (1983) did not find a significant order effect. In view of these conflicting results, Baldwin and Howard (1983) re-examined the order effect. Rather than examining the effect of the order of difficulty of the questions on the performance of the students, they examined the effect of the order in which test items were presented. They presented the questions to a group of their subjects in the sequential order by which the concepts were taught to them (test sequential order group). They randomized the questions presented to the second group (test randomized group). They found an order effect showing that the test sequential order group significantly performed better than the test randomized group. However, none of the subsequent studies (i.e., Baldwin, Pattison, & Toolson, 1989; Stout & Wygal, 1989,1990; and Stout & Battista, 1991) found a significant order effect. None of these studies attributed the results to the recency effect.

Gruber (1987) proposed the recency effect as the framework for extending Baldwin and Howard's (1983) study. Though all the groups were taught in the same sequential order, Gruber presented test items to one group according to the order by which they were taught. He

presented the test items to a second group in the reverse order by which they were taught and gave a randomized version of the questions to the third group. The results show the reverse order group performed significantly better than the other two groups. He attributed the results to the recency effect.

While Gruber (1987) attributes the results of his study to the recency effect, we consider an alternate explanation for his findings in the current study. In fact, his results may support more the notion of test item order effects--three groups were taught the material in the same order but the groups received test items in different orders. If there was a recency effect, all the groups should have performed best on the items that were taught last no matter if they were the first items, the middle items, or the last items on the test. Though he attributed his result to the recency effect, his explanation of the result supports the test item order effect. For example, he states that one group did better than the other two and that the only difference among the three groups was the order of the test items. An appropriate examination of the recency effect would require that, for all three groups, students' performance on the most recent information taught to them be compared with their performance on the earlier information regardless of the location of the recent information in the order of the test items. Gruber did not make such a comparison. The implication of Gruber's results is that the location of recent information in the order of test items matters. Gruber may have confounded the recency effect with the order effect because the recency effect does not imply the effect of the order by which the most recent information is presented in an examination.

According to Terry (2005), a recency effect is dependent on immediate recall of the final items from short term memory. Thus, the recency effect implies that the location of the most recently taught information on a test (whether sequentially ordered, reverse ordered, or randomly ordered) should not make any difference in the performance of the students; they should all do better on the last items taught in comparison to items taught earlier. For example, a prior study by Eakin and Reimers (1992) provides support for the recency effect by stating that individuals tend to put more weight on recent information and are therefore able to recall the recent information better than the earlier information. Using an earnings that the data were randomly arranged with respect to the dates, the recency effect was not eliminated.

According to Terry (2005) the serial position in recall of commercials viewed under naturalistic conditions has been examined in two studies: (1) Where commercials on certain public television stations occur in long blocks between programs (Pieters and Bijmolt, 1997); and (2) Where commercials were aired during Super Bowl football broadcasts in the United States (Zhao, 1997). Terry (2005) performed experiments to obtain converging validity for the naturalistic findings of Pieters and Bijmolt (1997) and Zhao (1997). Using procedures that parallel those used to study serial position effects in laboratory settings, Terry (2005) performed two experiments. He varied the sequence of commercials among participants so that recall for a specific commercial could be compared when the commercial occurs first, middle, or last in the list. In an immediate test, Terry (2005) found that college students recalled the first commercials

in a list (primacy effect) and the last items (a recency effect) better than the middle items. In an end of session test, he found that primacy effect persisted but the recency effect disappeared. His results support the results of Pieters and Bijmolt (1997) and Zhao (1997) as well as other prior studies (e.g., Singh, Rothschild, & Churchill, 1988; Brown & Rothschild, 1993; Singh, Mishra, Bendapudi, & Linville, 1994). To our knowledge, no other study has examined the recency or primacy effect in a classroom setting.

Serial Position Theory

Some theories have been used to explain the serial position phenomenon. For example, Ladd and Woodworth (1911) proposed a theory stating that items are associated with their position. Items at the beginning of a list have clearly defined positions (first, second, third) and items at the end of a list have clearly defined positions (last, next to last). Items in the middle of a list have less clearly defined positions, leading to weaker associations between the item and position. Therefore, the worst performance in an association recall test should be for the item in the middle. However, according to Slamecka (1985), this theory, as with other associationists' model theories attempting to explain this phenomenon, was incomplete and overly simplified.

Foucault (1928) proposed another theory based on two types of interference--proactive interference and retroactive interference. Proactive interference occurs when the first items in the list interfere with retention of the later items in the list; thus producing a primacy effect, or alternatively, the last items interfere with memory for preceding items; thus producing recency effect (Zhao, 1997). In other words, proactive intereference occurs when earlier learning interferes with subsequent learning and retroactive interference occurs when new learning However, proactive interference is immune to retroactive interferes with old learning. interference and retroactive interference is immune to proactive interference. While proactive interference and retroactive interference enhance earlier and recent learning, respectively, they render items in the middle of the list to be the most difficult to recall because the items in the middle are susceptible to both proactive and retroactive interferences (see Figure 1). The problem with this theory, according to Neath (1998, p. 20), is Foucault's simplistic view in regard to determining the contribution of each form of interference. Foucault's view is that the results of a serial recall test should produce a symmetrical U-shaped curve. This prediction is consistent with the association effect theory proposed by Ladd and Woodworth (1911) (i.e., the worst performance on the serial recall test would be for the items in the middle). However, according to Ward (1937), this curve is not symmetrical; the worst performance occurs closer to the end than to the beginning of the list.

Beginning with the cognitive movement of the mid-1950s, a new model of memory was beginning to take shape that used the computer as a metaphor for the memory process. It ultimately led to Atkinson and Shiffrin's (1968) dual-store model for memory. Although it is called dual-store, there are actually three stores: (1) sensory store, (2) short-term store, and (3)

long-term store. The flow of information through these stores is governed by a wide variety of control processes. Information from the environment first enters the sensory register where it remains for less than a second and is either coded or filtered out. Short-term store receives coded information from the sensory register and copies of information from the long-term store for use in the short term memory. Information in the short-term store is temporary and lasts only a few minutes but an individual may retain this information longer through studying, reflecting, and rehearsal. Short-term store is where we have working memory (immediate access memory) and this store governs response output. Information may be coded and transmitted to the long-term memory store through a consolidation process.





Figure 1. Information at the beginning is vulnerable to retroactive interference, information at the end is vulnerable to proactive interference, but information in the middle is vulnerable to both proactive and retroactive interference.

Atkinson and Shiffrin's model proposes a different explanation for the serial position effect, suggesting that the primacy effect would be stronger than the recency effect because items at the beginning of the list have more time to be rehearsed, coded, and consolidated, providing an opportunity to create a stronger stimulus-response bond for the earlier information. Thus, this theory predicts that earlier information has an increased probability of being consolidated through studying, reflecting, and rehearsing and sent to the long-term store, increasing the odds that subjects will recall earlier information (primacy effect) better than recent information (recency effect). In support of the superiority of the primacy effect over the recency effect, Rundus and Atkinson (1970) demonstrated that there was a positive correlation between the number of times information was studied, reflected upon, and rehearsed and test performance. This is also consistent with Ward's (1937) finding stating that the worst performance is closer to

the end than to the beginning of a list. Zhao (1997), looking at proactive and retroactive interferences in recalling commercials that appeared during a Super Bowl football game, found that subjects recalled the first commercial, in a string of commercials, better than the last commercial. Zhao also found that as the number of commercials preceding the last commercial (in a string) increased, the probability of recalling the last commercial decreased. However, according to Terry (2005), dual store theories have fallen out of favor as a result of alternative explanations for primacy effect provided by Zhao (1997) through his demonstration of proactive interference; and also by Greene, 1986, in his findings of long-term recency when certain experimental paradigms are used.

Crowder (1976) provided explanations for serial position by classifying it in two broad categories: the passive and active categories. The active theory posits that sequence effects will result from differential rehearsal and retrieval strategies. Using an example of the study by Glanzer & Cunitz (1966) to explain the active category, Terry (2005) stated that the first items in a list would receive more total rehearsals during presentation, whereas the last items would have a shorter amount of rehearsal; hence, a shorter retention interval, before memory testing occurs. An explanation for the passive theory is that serial position effects will result from processes inherent in the task (Terry, S. 2005). For instance, Zhao (1997), by comparing lists of different lengths, demonstrated that proactive interference accumulates across items and interferes with memory for the later items on a list.

We offer the following additional explanation for the superiority of the primacy effect. The earliest information was in the possession of the subjects longer than the middle information and the middle information was in the possession of the subjects longer than the recent information. Generally, recent information is delivered shortly before an examination is administered to students. Therefore, the earliest information has a longer time and more chances of being consolidated through studying, reflecting, and rehearsing than the middle information and the middle information has longer time and more chances of being consolidated than the recent information. Consequently, we expect students would perform better on recalling the earlier information than the middle information. Thus, rather than producing a symmetrically U-shaped curve, the results of a dual-store model for memory should produce a negatively shaped curve in a serial position test.

It is important to note that the model for storing information through sensory, short-term, and long-term memory and the process of creating the stimulus-response bond for the information stored are not limited to word lists; they also relate to all forms of information, large and small, that we process in memory. The present experiment was not designed to distinguish one theory from the other, although the results were consistent with several theories; rather, this experiment was to examine the serial position effect on the performance of students who have to learn, understand, acquire knowledge, comprehend, reflect, rehearse, and recall a larger amount of blocks of information than recalling a list of words or digits under laboratory conditions.

HYPOTHESES

Based upon our preceding discussion of order and recency effects and related research (Baldwin & Howard, 1983; Baldwin, Pattison, & Toolson, 1989; Gruber, 1987; Howe & Baldwin, 1983; Paretta & Chadwick, 1975; Stout & Battista, 1991; Stout & Wygal, 1989,1990) as they apply to teaching and question order and the influence of location on the recency effect, we hypothesized that:

- Hypothesis 1: There will be no difference in the performance of students due to the order (sequential or reverse-sequential) by which information is taught to them.
- Hypothesis 2: There will be no difference in the performance of students due to the order (sequential, reverse sequential or randomized) by which test items are presented to them.

As discussed earlier, using interference, and association theories to provide an explanation for the serial position effect, Foucault (1928), and Ladd and Woodworth (1911), proposed that faster learning and greater recall of items occur at the beginning (primacy effect) and end (recency effect) in comparison to the middle of a list in word recall tests. If this phenomenon is applicable to classroom situations where students are tested on larger amounts of blocked information, then it is expected that students will exhibit greater recall on the block of information taught to them at the beginning and end in comparison to the block of information taught to them in the middle. Therefore, regardless of the order (sequential, or reverse-sequential) by which the information is taught to them, it is hypothesized that:

Hypothesis 3: Subjects will perform better on the earlier and recent information than on the middle information taught to them.

Also as discussed earlier, an alternative explanation provided for the serial position effect by Atkinson and Shiffrin's (1968) dual-store model for memory is that earlier information has a greater chance of being consolidated than the middle information and the middle information has a greater chance of being consolidated than the recent information. As stated earlier, this model suggests that subjects would perform better on earlier information than on middle information and also would perform better on middle information than on recent information. Rundus and Atkinson (1970), Ward (1937), Glanzer & Cunitz (1966), Crowder (1976), Zhao (1997), and Terry (2005) provided support for this position. While the interference theory and the association theory do not predict the relative strengths of the primacy and recency effects, the dual-store model for memory predicts the results of a serial position effect test would show the primacy effect to be stronger than the recency effect. Accordingly, we hypothesized that:

Hypothesis 4: Students will perform better on the earlier information than on the middle information and will perform better on the middle information than on the recent information taught to them.

METHOD

Participants

The sample consists of 74 male students enrolled in a semester-long introductory managerial accounting course in their sophomore year. Of the 74 students, 36 were enrolled in one section of the managerial accounting course while the remaining 38 were enrolled in the second section of the course. Of the 74 students, only 72 participated in the first examination. All 74 students participated in the second examination; 70 students participated in examination 3 while only 66 students participated in the final, comprehensive examination. The same professor taught for 50 minutes in each of the two sections of the course on Monday, Wednesday, and Friday of each week. Participants provided demographic information on gender and age. We collected information on their GPAs from the Registrar's Office.

Procedure

All the students were taught the basic background information such as cost terminologies as well as cost behavior including how to separate fixed and variable costs when costs are mixed. The background information constitutes a common body of information for understanding all the chapters included in this investigation. For example, an understanding of the chapter on breakeven-analysis is not dependent on an understanding of the chapter on variance analysis or differential analysis or process costing or job order costing or capital budgeting, etc. However, these chapters are individually dependent on the understanding of the cost terminologies and cost behavior concepts that form the common body of the background information that we presented to the students earlier in the course. In addition, an understanding of any one of the chapters included in the investigation is not dependent on the specific scenarios or information contained in any one of the other chapters included in the investigation.

We chose managerial accounting for examining the serial position theories because each chapter or concept taught can be examined independently of the other concepts taught to the students and the performance of the students on one chapter or concept is not dependent on their performance on the prior information other than the common body of information discussed earlier. These characteristics enabled us to teach the chapters in any order. Being able to teach the chapters in any order also enabled us to compare the performances of different groups of students on the same chapter even though the chapter might have been taught to the two groups at different times during the information delivery period. An examination was given on the common background information to test the students' understanding of that information and to correct any deficiency prior to the presentation of the nine chapters that were included in the investigation.

The nine chapters included in the investigation were divided into blocks of three chapters after which an examination was given. Three examinations were given prior to a comprehensive final on all the information included in the study. While each cycle of the three chapters was taught to one of the two sections in sequential order (e.g., chapters 14, 15, and 16 respectively), the same three chapters were taught to the second section in reverse sequential order (that is, chapters 16, 15, and 14 respectively). Thus, while chapter 14 represents the earlier information presented to section one (sequential section), the same chapter 14 represents the recent information presented to section two (reverse sequential section) of the course. Further, while chapter 16 represents the recent information to the sequential order group, the same chapter 16 represents the earlier information to the reverse sequential group. Comparing the same information, that is, earlier chapter 14 vs. recent chapter 14 and earlier chapter 16 vs. recent chapter 16 enabled us to control for the relative difficulty of the information being compared. In both sequential and reverse-sequential orders of teaching, chapter 15 represents the middle information. Table 1 presents the sequence by which each block of three chapters was taught to the students prior to each examination administered to them (see Table 1 below).

	Table 1: Order of Teaching of all the Chapters during the Semester										
Order of Teaching	Examination 1 Chapters			Examination 2 Chapters			Examination 3 Chapters				
Sequential	14	15	16	17	18	21	19	20	22		
Reverse- Sequential	16	15	14	21	18	17	22	20	19		
Serial Position	Earlier	Middle	Recent	Earlier	Middle	Recent	Earlier	Middle	Recent		
Note: The chapters represent earlier information, middle information, or recent information depending on the section											
being taught (sequ	uential order	r class or rev	verse-sequer	itial order cl	ass section).						

The test items on each chapter were arranged in a different order: sequentially, reverse sequentially, and randomly. Test papers were distributed to students randomly. Of the seventytwo students who participated in examination 1, twenty students received test papers containing test items that were in sequential order, twenty-seven received those that were in reverse sequential order, and twenty-five received those that were in random order. Of the seventy-four who participated in examination 2, twenty-four received test items that were in sequential order, twenty-five received those in reverse sequential order, and twenty-five received those that were in random order. Twenty-three of the seventy students who took part in the third examination received test items that were sequentially ordered; twenty-five received those that were reverse sequentially ordered, and twenty-two received those that were randomly ordered. The three versions of the test items were administered to all the students regardless of the order by which they were taught the concepts. This procedure enabled us to test whether the order of sequencing the test items had any influence on the students' performance aside from the effect, if any, of the order by which the chapters were taught to them. Standardized test items with a medium level of difficulty were selected from the test bank that accompanied the textbook to control for the level of difficulty of the test items in the four examinations administered to the students during the semester.

Research Variables

There were two independent variables in this study: (a) the order of teaching the chapters in the course (i.e., sequential vs. reverse sequential--the position of the chapters in the sequential or reverse sequential order dictates the serial position of each chapter, whether it represents earlier or middle or recent information taught to the students) and (b) the order of sequencing the test items (i.e., sequential, reverse sequential and random order). The dependent variable was measured in two ways: (a) by the test scores earned on each of the three chapters contained in each examination and (b) by the average test scores of each block of three chapters contained in the final comprehensive examination. The latter was used for the analysis of the comprehensive final whereby all the contents of the nine chapters taught during the semester were tested at once. The students' scores on chapters 14, 15, and 16 contained in the comprehensive final were averaged as a data point and treated as the earlier information with respect to the comprehensive final examination. Similarly, each student's mean score on chapters 17, 18, and 21 was considered a data point and regarded as the student's performance on the middle information with respect to the comprehensive final examination, while each student's scores on the last three chapters (i.e., chapters 19, 20, and 22) contained in the final examination was also averaged, treated as a data point, and evaluated as recent information with respect to the comprehensive final examination.

RESULTS

Preliminary Analysis

A descriptive statistic was run to analyze the age distribution of the participants. The mean age is 19 years. Prior studies have shown that past academic performance is significantly related to future performance—i.e., current grades predict future grades (Astin, 1971; Lavin, 1965; and Odell, 1927). Therefore, an analysis of variance was performed on the GPA (a measure of ability) of the two groups of students (sequential and reverse-sequential groups) who participated in each examination. This was to compare the ability of each group of students taking each of the examinations. The results show that there is no significant difference in the GPA values between the two sections who participated in each of the four examinations including the final examination (Exam 1: (F(2,72) = 1.24, p < 0.268, see Table 2)); (Exam 2: (F(2,74) = 0.55, p < 0.461, see Table 2)); (Exam 3: (F(2,70) = 0.25, p < 0.650, see Table 2)); and (Comprehensive Final Exam: (F(2,66) = 0.07, p < 0.790, see Table 2)). The *t*-tests that we performed revealed similar results.

Table 2: Comparative GPAs of the Subjects in both Sequential and Reverse-sequential Groups Participating in Examinations 1, 2, 3 and Final										
and Final										
Examinations	Sequential	Reverse Sequential	E Volue, n volue, N							
Examinations	(Mean GPAs) (Mean GPAs)		r-value, p-value, N							
1	2.7183 (n = 36)	2.8553 (n = 36)	F=1.24, p=0.268, N=72							
2	2.8129 (n = 38)	2.7222 (n = 36)	F=0.55, p=0.461, N=74							
3	2.8175 (n = 36)	2.7606 (n = 34)	F=0.21, p=0.650, N=70							
Final Comprehensive	2.8150 (n = 34)	2.7812 (n = 32)	F=0.07, p=0.790, N=66							
No significant difference betw	een the ability of the	students who were taught in	sequential order and those who were							

No significant difference between the ability of the students who were taught in sequential order and those who were taught in reverse sequential order across all the examinations.

	Table 3:Level of Difficulty of Chapters												
Exam	Exam 1				Exam 2		Exam 3						
Chapter	14	15	16	17	18	21	19	20	22				
Mean	53.8	50.6	66.7	48.3	56.8	57.4	67.4	70.4	62.8				
Std. Deviation	18.4	22.4	18.8	20.3	23.0	21.5	19.1	21.5	19.0				
Ν	72	72	72	74	74	74	70	70	70				
Note: Compare	the mean s	cores in chap	oters 14, 15,	and 16 conta	ined in exam	nination 1;							
Compare	Compare the mean scores in chapters 16, 17, and 18 contained in examination 2; and												
Compare	the mean s	cores in chaj	pters 19, 20,	and 22 conta	ined in exam	nination 3.							

Since we planned to compare the students' performance on the earlier information with the middle information and also compare their performance on the middle information with the recent information while investigating the proposition of the dual store model as well as the interference and association effects theories, it was essential to test the level of difficulty of the earlier vs. middle vs. recent information. We, therefore, performed a test for the level of difficulty of each of the chapters included in each of the three examinations. Contrary to our expectation, we found the level of difficulty significantly different in each of the three exams: (Exam 1: (F(1,72) = 4.31, p < 0.04, see Tables 4a and 4b)); (Exam 2: (F(2,74) = 16.83, p < 0.001, see Tables 5a and 5b)); (Exam 3: (F(2,70) = 15.41, p < 0.001, see Tables 6a and 6b)). Therefore, in order to control for the level of difficulty, we entered the variable, level of difficulty (difficult , easy), as one of the independent variables for testing the effect of the way students were taught as well as the effect of the way the test items were presented to them in each of the examinations.

Test of Hypotheses

The first hypothesis relates to the teaching order effect. The hypothesis predicted that there would be no difference in the performance of students due to the order (sequential or reverse sequential) by which information was taught to them. After controlling for the level of difficulty, we did not find any significant teaching order effect (Exam 1: (F(2,72) = 0.50, p < 0

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0.48, see	Tables 4a	and 4b));	(Exam 2:	(F(2,74) =	2.81, p	< 0.098,	see Ta	bles 5a	and 5	5b)); a	and
(Exam 3:	(F(2,70) =	: 0.20, p < 0	0.655, see	Tables 6a	and 6b)).						

	Table 4a:Descriptive Statistics, 3-Way ANOVA for Exam I										
Degree of Difficulty	Taught	Tested	Mean	Std Deviation	N						
		Same way taught	44.65	13.68	10						
	Compared 1	Reverse of way taught	53.82	24.45	14						
	Sequentiai	Random	46.29	19.61	12						
		Total	48.76	20.20	36						
		Same way taught	53.90	14.48	10						
Difficult	Reverse	Reverse of way taught	55.77	16.49	13						
Difficult	Sequential	Random	56.88	11.25	13						
	²	Total	55.65	13.86	36						
		Same way taught	49.28	14.51	20						
	Total	Reverse of way taught	54.76	20.63	27						
	Totai	Random	51.80	16.39	25						
		Total	52.21	17.55	72						
		Same way taught	61.90	18.32	10						
	G 1	Reverse of way taught	65.71	24.07	14						
	Sequential	Random	57.58	21.21	12						
		Total	61.94	21.33	36						
		Same way taught	73.00	8.48	10						
F	Reverse	Reverse of way taught	72.23	17.54	13						
Lasy	Sequential	Random	69.38	16.12	13						
		Total	71.42	14.68	36						
		Same way taught	67.45	15.01	20						
	T (1	Reverse of way taught	68.85	21.04	27						
	lotal	Random	63.72	19.29	25						
		Total	66.68	18.80	72						
Difficult = (chapt	er 14 + Chapter 15)/2, Easy = chapter 16	1	1	1						

Table 4b Three-way ANOVA for Exam										
Source	SS	df	MS	F	Sig.					
Difficulty	751.01	1	751.01	4.31	.04*					
Difficulty * Way Taught	86.06	1	86.06	.50	.48					
Difficulty * Way Tested	235.54	2	117.77	.68	.51					
Difficulty *Way Taught *Way Tested	13.62	2	6.8116	.04	.96					
Error (Difficulty)	11302.04	65	173.88							
*significant at p < 0.05.										
Note: The level of difficulty was significant. No significant te	aching order effect w	as found af	ter controlling for th	ne level of di	fficulty					

Note: The level of difficulty was significant. No significant teaching order effect was found after controlling for the level of difficulty (Vertical Analysis—same chapter taught earlier or recently).1. No significant test item order effect was found after controlling for the level of difficulty. 2. No significant interaction effect between the order of teaching, the order test items were arranged, after controlling for the level of difficulty

The second hypothesis relates to the test item order effect, which predicted that there would be no difference in the performance of students due to the order by which the test items were presented to them. We controlled for the level of difficulty and compared the performance of students who were presented with test items in the order they were taught to the performance of the students who were presented with test items in the reverse order from the order they were taught and with the performance of the student who were presented test items in a random order,

and found no significant differences (Exam 1: (F(2,72) = 0.68, p < 0.51, see Tables 4a and 4b)); (Exam 2: (F2,74) = 2.62, p < 0.080, see Tables 5a and 5b)); (Exam 3: (F(2,70) = 0.90, p < 0.412, see Tables 6a and 6b)). We did not find any significant interaction effect between the order of teaching and the order of test items after controlling for the level of difficulty.

	Table 5a: Descriptive Statistics, 3-Way ANOVA for Exam II										
Degree of Difficulty	Taught	Tested	Mean	Std Deviation	N						
		Same way taught	48.62	19.56	13						
Difficult	Sequential	Reverse of way taught	53.50	17.53	12						
Difficult	Sequential	Random	54.46	15.11	13						
		Total	52.16	17.22	38						
		Same way taught	45.36	25.71	11						
	Reverse	Reverse of way taught	45.54	21.25	13						
	Sequential	Random	41.58	22.96	12						
		Total	44.17	22.64	36						
		Same way taught	47.13	22.13	24						
	Total	Reverse of way taught	49.36	19.57	25						
	Total	Random	48.28	19.97	25						
		Total	48.27	20.30	74						
		Same way taught	50.77	14.25	13						
Earr	Comparial	Reverse of way taught	64.42	16.16	12						
Easy	Sequential	Random	57.08	18.69	13						
		Total	57.24	16.98	38						
		Same way taught	54.95	19.70	11						
	Reverse	Reverse of way taught	66.15	24.90	13						
	Sequential	Random	48.75	20.79	12						
	1	Total	56.93	22.70	36						
		Same way taught	52.69	16.71	24						
	TT (1	Reverse of way taught	65.32	20.75	25						
	Iotal	Random	53.08	19.77	25						
		Total	57.09	19.83	74						
	Difficul	t = chapter 17 Fasy = (chapter 17)	ter 18 + Chanter	er 21)/ 2	1						

Difficult chapter 17, Easy = (chapter 18 + Chapter 21)/

Table 5b:Thre	e-way ANOVA for	Exam I	[
Source	SS	Df	MS	F	Sig.				
Difficulty	2882.43	1	2882.43	16.83	.001				
Difficulty * Way Taught	481.55	1	481.55	2.81	.098				
Difficulty * Way Tested	898.14	2	449.07	2.62	.080				
Difficulty *Way Taught *Way Tested	20.76	0.12	.886						
Error (Difficulty)	11643.92	68	171.23						
Significant at p<0.001									
Note: The level of difficulty was significant. No significant teaching order effect was found after controlling for the level of difficulty									
(Vertical Analysis-same chapter taught earlier or recently).	1. No significant tes	t item ord	er effect was found a	after controlli	ing for the				
Significant at p<0.001 Note: The level of difficulty was significant.No significant (Vertical Analysis—same chapter taught earlier or recently).	teaching order effect 1. No significant tes	was found t item ord	l after controlling for er effect was found a	r the level of after controlli	f difficulty ing for the				

level of difficulty. 2. No significant interaction effect between the order of teaching, the order test items were arranged, after controlling for the level of difficulty

The third and fourth hypotheses relate to the serial position effect. The third hypothesis predicted that students would perform better on the earlier and on the recent information than on the middle information taught to them. The fourth hypothesis predicted that students would perform better on the earlier information than on the middle information and would perform

better on the middle information than on the recent information taught to them. Using a one-way ANOVA with chapters as the independent variable, we looked at students' performance on each of the three exams, the contents of which were taught sequentially and reverse sequentially, as explained earlier. Four of the six tests revealed significant effects. Of the four tests showing significant effects, the students' performance on Exam I, sequential, was the only one where the recency effect was stronger than the primacy effect: ($F(2, 70) = 14.88, p < .001, \eta^2 = .30$, see figure 2a). The students received mean scores of 53.78, 43.75, and 61.90 showing an asymmetrical U-shaped curve on earlier, middle, and recent information respectively.

	Table 6a: Descriptive Statistics, 3-Way ANOVA for Exam III									
Degree of Difficulty	Taught	Tested	Mean	Std Deviation	Ν					
		Same way taught	69.69	14.12	13					
	Sequential	Reverse of way taught	66.83	21.47	12					
	Sequentiai	Random	79.23	8.14	11					
		Total	71.65	16.11	36					
		Same way taught	65.70	21.64	10					
Difficult	Reverse	Reverse of way taught	63.12	22.00	13					
Difficult	Sequential	Random	69.50	19.22	11					
		Total	65.94	20.57	34					
		Same way taught	67.96	17.45	23					
	Total	Reverse of way taught	64.90	21.37	25					
	Total	Random	74.36	15.24	22					
		Total	68.88	18.50	70					
		Same way taught	63.77	12.01	13					
	Convential	Reverse of way taught	60.83	21.80	12					
	Sequential	Random	70.00	19.49	11					
		Total	64.69	17.94	36					
		Same way taught	53.60	21.39	10					
P	Reverse	Reverse of way taught	61.54	21.23	13					
Easy	Sequential	Random	66.36	17.48	11					
	Ĩ	Total	60.76	20.18	34					
		Same way taught	59.35	17.10	23					
	T 1	Reverse of way taught	61.20	21.05	25					
	Total	Random	68.18	18.16	22					
		Total	62.79	19.02	70					
Difficult = char	pter 22. Easy = $(ch$	apter $19 + \text{Chapter } 20)/2$								

Table 6b:Three-way ANOVA for Exam III									
Source	SS	Df	MS	F	Sig.				
Difficulty	1388.48	1	1388.48	15.41	.001				
Difficulty * Way Taught	18.12	1	18.12	.20	.655				
Difficulty * Way Tested	161.88	2	80.94	.90	.412				
Difficulty *Way Taught *Way Tested	251.17	2	125.59	1.39	.255				
Error (Difficulty)	5764.99	64	90.08						

Significant at p < 0.001

Note: The level of difficulty was significant. 1. No significant teaching order effect was found after controlling for the level of difficulty (Vertical Analysis—same chapter taught earlier or recently). 2. No significant test item order effect was found after controlling for the level of difficulty. 3. No significant interaction effect between the order of teaching, the order test items were arranged, after controlling for the level of difficulty



Figure 2a: Serial Position Effect—Relative Performance In Sequential Class, Exam 1

Figure 2a. Relative performance in the sequential class (information presented chapters 14, 15 & 16 on Exam I (F(2, 70) = 14.88, p < .001).

For the remaining three of the four instances where we found significant differences in students' performance, primacy effect was stronger than recency effect: Exam I, reverse sequential, (F(2, 70) = 13.55, p < .001, $\eta^2 = .28$, see figure 2b); Exam II, reverse sequential, (F(2, 70) = 7.36, p = .001, $\eta^2 = .17$, see figure 3a); Exam III, sequential, (F(2, 70) = 5.26, p < .01, $\eta^2 = .08$, see figure 3b).

The results of the two where we did not find a significant effect in the performance of the students are: Exam II sequential, (F(2, 74) = 1.84, p = .16, see figure 4a), and Exam III reverse sequential, (F(2, 66)=2.68, p = .77, see figure 4b).

The use of standardized questions with a moderate level of difficulty from a test bank was designed to control for the level of difficulty across chapters. Based on the students' performance, however, this was not the case (see Table 3). Students, on Exam I, found chapters 14 and 15 significantly more difficult than chapter 16 based on a one-way ANOVA repeated measures analysis: F(2, 142) = 23.26, p < .001, $\eta^2 = .25$. On Exam II, students demonstrated, based on performance, that chapter 17 was significantly more difficult than chapters 18 and 21: F(2, 146) = 8.58, p < .001, $\eta^2 = .11$. On Exam III, students found that chapter 22 was significantly more difficult than chapters 19 and 20: F(2, 138) = 7.72, p = 001, $\eta^2 = .11$.

Figure 2b: Serial Position Effect—Relative Performance In Reverse Sequential Class, Exam



Figure 2b. Relative performance in the reverse sequential class (information presented chapters 16, 15 & 14) on Exam I (F(2, 70) = 13.55, p < .001).



Figure 3a. Performance in the reverse sequential class (information presented chapters 21, 18& 17) on Exam II (F(2, 70) = 7.36, p = .001).





Figure 3b. Performance in the sequential class (information presented chapters 19, 20 & 22) on Exam III (F(2, 70) = 5.26, p < .01).





Figure 4a. Performance in the sequential class (information presented chapters 17, 18, & 21) on Exam II (F(2, 74) = 1.84, p = .16).

Figure 4b: Serial Position Effect: Relative Performance In Reverse Sequential Class, Exam III



Figure 4b. Performance in the reverse sequential class (information presented chapters 22, 20, & 19) on Exam III (F(2, 66) = 2.68, p = .77).

Taking the level of difficulty into consideration, a three-way ANOVA mixed design with the two between factors -- how taught (sequential and reverse sequential) and order of test items (same way as taught, reverse of the way taught, and random order) -- was performed. The within factor was the difficulty of the chapter(s) (easy and difficult). We found that the level of difficulty was the only factor that had a significant difference in the performance of the students for all the three exams. The way taught (sequential or reverse sequential) and the order of the test items had no significant effect (see Tables 4 to 6). Additional evidence obtained in the final exam showed that were in the sequential class (F(2, 66) = 5.53, p < .01, $\eta^2 = .14$) or in the reverse sequential class (F(2, 62) = 3.65, p < .05, $\eta^2 = .11$), they performed significantly better on the test items on the final exam that were learned at the beginning of the semester than those learned in the middle or toward the end of the semester.

Thus, for five of the six instances, including the final exam, where there were significant effects on the students' performance, the primacy effect was stronger than the recency effect (see Figures 2b, 3a, 3b, 5a, and 5b). Although we did not observe a symmetrical U-shaped result, one of the six instances showed that students performed better on both the earlier and recent information than on the middle information taught to them (see figure 2a). This provides support for the third hypothesis. Also, in four of the six instances including the final exam, the students performed significantly better on earlier information than on the middle information taught to them (see figures 2a, 2b, 5a and 5b). In addition, the students performed better on the middle information taught to them (see Figures 2b, 3a, and 3b). These results provide support for the fourth hypothesis.



Figure 5a: Serial Position Effect: Relative Performance in Sequential Class, Final Exam

Figure 5a. Performance in the sequential class on the Final Exam (F(2, 66) = 5.53, p < .01).





Figure 5b. Performance in the reverse sequential class on the Final Exam (F(2, 62) = 3.65, p < .05).

DISCUSSION

Comparison with prior studies, strengths, the implications, and some limitations of the results of this study will be discussed here.

The strength of this study is that the experiment used a research design, which provided the high level of internal validity required to examine the theoretical issues that were considered. Prior studies that investigated the order effect focused on the effect of the order by which questions were presented to students. A group of the studies examined how the order of difficulty of test questions influenced the performance of students (Howe & Baldwin, 1983; Paretta & Chadwick, 1975) while another group of studies examined how ordering questions in the order by which the concepts were taught impacted the performance of students (Baldwin & Howard, 1983; Gruber, 1987). This study is different from the aforementioned studies. We examined the teaching order effect rather than the question order effect. Once the teaching order effect had been found not to have any significant effect on students' performance, we were no longer concerned about the potential covariance effect of teaching order while examining the test item order effect. Therefore, we proceeded to examine the test item order effect in the same manner that Gruber (1987) did.

Gruber suggested that there is a location effect on the performance of students on recent information. He found that when questions on the recent information taught to the students were presented to them first in the sequence of questions, the students performed better on those questions than when those questions were presented later in the sequence of questions. The implication of Gruber's (1987) results is that when questions on the recent information taught to students are presented first in the sequence of questions, the students should perform better than their peers who were similarly taught the recent information but received the questions on that recent information later in the sequence of questions. Another implication is that Gruber's results suggest that there is a question location effect. Gruber examined the effect of question order only on students that were taught in sequential order.

We believe that a more robust design is to examine the effect of question order on students who were taught in sequential order and those who were taught in reverse sequential order. This would enable us to ascertain whether or not the location of questions had any impact on students' performance regardless of the order by which the subjects were taught. As presented earlier, Eakin and Reimers (1992) had results that did not provide support for Gruber (1987). They found that the location of recent information in the sequence by which all information were presented to subjects did not eliminate the recency effect. Further, they stated that even when data were time-tagged, subjects inferred an ordering to the data. In the same manner, we believe that even when the questions on the recent information taught to the students are presented first or later in the sequence of questions, the students would infer an ordering in the information and will therefore appropriately weight the information regardless of the order of

presentation. As stated earlier, the recency effect occurs when individuals put more weight on recent information and are therefore able to recall the recent information faster than the earlier information (Eakin & Reimers, 1992).

In view of these conflicting findings as to whether or not location influences students' performance and can therefore be attributable to the recency effect, we tested for the question location effect by employing a more robust design than prior studies (e.g., Baldwin & Howard, 1983; Gruber, 1987; Howe & Baldwin, 1983; Paretta & Chadwick, 1975;). We gave questions arranged in sequential order, reverse sequential order, and random order to all the students regardless of whether they were taught in sequential order or in reverse sequential order. Contrary to Gruber's (1987) results, we found that question location did not have any effect on the students' ability to recall recent information. Also, we did not find any order (question or teaching order) effect on student performance. Thus, our results provided support for the first and the second hypothesis, which predicted that there would be no difference in the performance of students due to either the order by which information was taught to them or the order by which test items were presented to them.

Our results showing that there was no location effect are similar to those of Eakin and Reimers (1992) though they examined this issue in other task domains. Our results showing there was no order effect are also similar to those of Howe and Baldwin (1983). The results of this study did not provide support for the group of prior research that found order effects and the group that implied that location influenced the recency effect (e.g., Baldwin & Howard, 1983; Gruber, 1987; Paretta & Chadwick, 1975).

An implication of the results of this study is that the order by which the students are taught should not impact their performance inasmuch as an understanding of subsequent concepts are not dependent on prior concepts. In addition, the location of recent or earlier information in the order by which test questions are presented to students should not impact the performance of the students. Therefore, faculty should not hesitate to give different versions of exams to their students to control for irregularity since they would not have to be concerned about the ethical consideration of placing any of their students at a disadvantage because of the order of the questions they received.

Earlier, we stated that the majority of the research on serial position effects has been conducted under laboratory conditions in which subjects had to learn and recall words, nonsense syllables, or number sets. One of the objectives of this study is to investigate whether or not the serial position theory is also applicable to classroom settings involving larger blocks of information taught to students over a longer period of time (as is typical of college courses). The results of this study provide anecdotal evidence that the theory is applicable. Prior research that used the interference theory (proactive and retroactive interference) (Foucault, 1928) and other prior study that used association theory (Ladd and Woodworth's, 1911) to explain the serial position effect predicted the results would be symmetrically U-shaped. Terry (2005), Pieters and Bijmolt (1997), and Zhao (1997) as well as other prior studies (e.g., Glenberg, Bradley, Draus, & Renzaglia, 1983; Pinto & Baddeley, 1991; Thapar & Greene, 1993; Singh, Rothschild, &

Churchill, 1988; Brown & Rothschild, 1993; Singh, Mishra, Bendapudi, & Linville, 1994) provide support for primacy and recency effects. However, Ward (1937) argued that the results should not be symmetrical and that the worst performance should be closer to the end than the beginning of a list. Though one of our results supporting those prior researches produced a U-shaped curve, it was not symmetrical. The asymmetry of this result in this one occasion is consistent with Ward's (1937) prediction except that the worst performance is towards the beginning of the block of information as opposed to the end. Thus, given that only one of our results support that group of research, we could only state that our results provided mild support for the third hypothesis, which predicted that subjects would perform better on earlier and recent information than on the middle information taught to them (see figure 2a).

Our results provide evidence and stronger support for the fourth hypothesis than the third hypothesis. Using the dual-store model for memory, the third hypothesis predicted that students would perform better on earlier information than on middle information and would perform better on middle information than on recent information taught to them. For four of the five occasions, including the comprehensive final exam, where we found significant primacy effects (see Figures 2b, 3a, 5a, and 5b), the results show negatively sloped performance. Thus, in four of the four within-group tests where serial position effects on students' performance were significant, primacy effects were found to be stronger than recency effects. This suggests that earlier information was committed to the long-term memory store. Since information committed to the long-term memory has more opportunity to be consolidated through studying and rehearsing than recently acquired information, students have a higher probability of performing better on the recall of earlier information than on recent information. We therefore suggest that faculty design examinations that are continuously cumulative for their students. We expect this approach would encourage students to continuously revisit, study, and rehearse prior information taught to them to create a stronger stimulus-response bond for the information, which will lead to better performance, not only on the material presented to the students at the beginning of the course but also on all subsequent content.

One limitation is that the participants were not randomly selected from the overall population of students to which it might be desirable to generalize the results. We also selected a course in which the material could be taught out of sequence. While this particular kind of course gave us a higher degree of control, its structure is not typical of courses in general. For most courses, the material is presented in a predetermined sequence. For the majority of studies looking at the primacy, recency, and serial position effect, the material to be remembered across the series is assumed to be fairly equal in terms of difficulty. We originally felt that we had provided control for the relative level of difficulty of the questions that were presented to the students. While it was the intent of this study to choose questions for the exams that were similar in terms of difficulty, this turned out not to be the case. Also, only one accounting course was employed to gather the data. Further, all participants are African American male students. Accordingly, caution should be used in extending the study results to other groups and settings.

In summary, the purpose of this research was to: (1) determine the impact of the order effect on student performance in an accounting course and (2) examine the applicability of the

"serial position effect" (previously used to explain subjects' performance on word recall, nonsense syllables, or number sets tests under laboratory conditions) as a determinant of performance in a real world classroom setting where larger blocks of information are taught and tested over a longer period of time. Of the three theories (association, interference, and dual-store model for memory) that were used to explain the serial position effect, it appears that Atkinson and Shiffrin's dual-store model for memory explanation is more consistent with the results of this study.

In order to enhance comparability of concepts under investigation, we used concepts that could be learned without depending on prior knowledge of other concepts other than a common body of information that was taught to the students at the beginning of the course. While we realize that, in most courses, an understanding of subsequent information largely depends on an understanding of prior information, especially in financial accounting, the results reported here and the methodology used are a good starting point for evaluating the effectiveness of course content delivery and student evaluation methods in our profession. Ultimately, our goal is to enhance our students' learning and performance in the field of accounting.

Further research may be warranted for the following reasons: A student's performance may be a result of multiple causes. For example, we do not know the order by which students' study prior to an examination. Factors such as the frequency of study, the impact of extracurricular activities and/or work-related obligations may also impact classroom performance. While we are suggesting further studies to include those factors, the relevance of the findings in this study should also be examined in other disciplines.

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DEVELOPMENT OF STUDENTS' EMOTIONAL INTELLIGENCE: PARTICIPATIVE CLASSROOM ENVIRONMENTS IN HIGHER EDUCATION

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ABSTRACT

The purpose of this study was to explore the role participative college classroom environments play in the development of emotional intelligence, and whether emotional intelligence is related to academic achievement. Using the ability-based model of emotional intelligence and the MSCEIT instrument, we found that opportunities for participation was positively related to emotional intelligence of male students but unrelated to emotional intelligence of female students. We also found a supportive climate was positively related to emotional intelligence regardless of students' gender. We found no relationship between emotional intelligence and students' GPA. The implications of these findings are discussed.

INTRODUCTION

The purpose of the present study is to explore the role participative classroom environments play in the development of college student's emotional intelligence (EI), and whether EI is related to academic achievement. Emotional intelligence has become an increasingly popular topic in recent years in the management and behavioral science literature. Researchers now broadly acknowledge that emotions play a critical role in organizational life and performance (Ashforth and Humphrey, 1995; Ashkanasy, 2004; Ashkanasy and Daus, 2005; Härtel, Zerbe, and Ashkanasy, 2004). Emotional intelligence can be regarded as a central part of current zeitgeist (Mayer, Salovey and Caruso, 2000) or "affective revolution" (Barsade, Brief, and Spataro, 2003) which emerges as a result of discontent with previously adopted predominantly cognitive and rational paradigms. EI has also become a concern for companies that face a serious gap between required and actual level of their employees' emotional abilities. Although employers of new college graduates emphasize the importance of "soft skills," they are substantially less satisfied with graduates' interpersonal and emotional competencies than with their conceptual and analytical skills (Rynes, Trank, Lawson, and Ilies, 2003; Shivpuri and Kim, 2004; Whetten and Cameron, 2005). Acknowledgement of this discrepancy makes it essential for educators to address the issue of enhancing students' emotional intelligence in academic institutions.

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Some empirical findings suggest that emotional intelligence, unlike IQ, can be improved through learning and development opportunities.(Ashkanasy and Daus, 2005; Dulewicz and Higgs, 2004). Studies devoted to the development of emotional intelligence during the formal educational process suggest tackling the problem in a direct fashion, by including the topic in particular courses and activities. Tucker, Sojka, Barone, and McCarthy (2000) recommend incorporating the process for the development of emotional intelligence outlined by Cherniss and Goleman (1998) into the business school curriculum. According to these authors an overall program should entail self-assessment of emotional intelligence for freshmen as part of their orientation; integrating experiential exercises into specific courses, so that students can practice using emotional skills; and assessing EI of graduating seniors (Tucker et al., 2000). Liptak (2005) advocates teaching emotional intelligence during personal and career counseling of students. Brown (2003) describes interesting emotional skills-building exercises which can be incorporated into organizational behavior courses. Whetten and Cameron (2005) and Clark Callister, and Wallace (2003) make a similar suggestion regarding a management skills course. Ornstein and Nelson (2006) make a convincing argument for teaching emotional competencies to students preparing for a business class overseas, because experiencing a foreign culture imposes high emotional demands on both students and trip leaders. We fully accept the value of incorporating the topic of emotional intelligence in specific courses and activities. At the same time, this direct approach is limited to the portion of students who participate in these courses. It would be worthwhile to investigate if described practices can be complemented by other more indirect approaches which make development of emotional skills possible for a larger student population. Therefore the central research question of this study is whether participative class environments, in general, result in improvement of emotional intelligence. This has not been investigated in previous studies. At the same time, we want to examine whether increased emotional intelligence leads to better academic achievement. This would bolster the argument that it is important to develop emotional intelligence of college students.

WHAT IS EMOTIONAL INTELLIGENCE?

One of the problems in reviewing past research on emotional intelligence is the different incompatible definitions of what encompasses emotional intelligence. The two most prevalent frameworks are the ability and mixed or trait models (Petrides and Furnham, 2001). The ability model was developed by Mayer and Salovey (1990). They define emotional intelligence as "the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth" (Mayer and Salovey, 1997, p.10). The trait or mixed model approach, popularized by Goleman (1995, 1998) is a much broader conceptualization of EI and includes attributes such as stress

tolerance, adaptability and interpersonal skills (see Cartwright and Pappas, 2008 for a complete discussion of frameworks).

EI is measured quite differently depending on the framework utilized. The trait or mixed model approach "relies upon self report measures such as the BarOn EQ-i and assesses typical or preferred modes of behavior" (Lindbaum, 2009, p.226). The most commonly used measurement instrument for the ability framework is the MSCEIT developed by Mayer and Salovey (1997) and refers to maximum performance in processing emotional information (Lindebaum, 2009, p.226). Interestingly enough, both the EQ-i and MSCEIT are copyrighted and sold by Multi-Health Systems, and they claim that both measure emotional intelligence and have adequate reliability and validity.

In this study we use the ability framework developed by Mayer and Salovey (1997), which includes four dimensions: (1) accurately perceiving one's and others' emotions; (2) using emotions in facilitating thought; (3) understanding connections between different emotions; and (4) managing one's and others' emotions. We measure EI with the Mayer-Salovey-Caruso Emotional Intelligence Test. Although both the ability and mixed model frameworks and their measures have their supporters and detractors, the Mayer and Salovey (1997) model is the most widely endorsed among management scholars (Ashkanasy and Daus, 2005; McEnrue and Groves, 2006). Also, we agree with Lindebaum (2009) that this ability model, with its emphasis on growth and behavior change, has more promising implications for educational and organizational development.

EMOTIONAL INTELLIGENCE AND PARTICIPATIVE CLASS ENVIRONMENTS

Very few studies have empirically investigated how to increase EI. Even fewer studies have examined whether emotional intelligence can be developed in the classroom. Jaeger and Eagan (2007) investigated whether incorporating material on emotional intelligence into the curriculum of a graduate general management course can increase EI by the end of the semester. The great advantages of this study were that there were pre and post tests of EI and a control group. However, the trait definition of EI was used here, measured by EQ-I, a self-report instrument. EI did increase from the beginning to the end of the semester in the test classes, but as the author notes, what increased was knowledge of emotional intelligence and not actual emotional intelligence. McEnrue, Groves and Shen (2009), based on the ability framework, developed an intense program within an undergraduate business class where students had to create a plan for developing a couple of EI skills. Students also participated in a series of exercises enabling them to practice these skills. A comparison of pre and post tests showed that EI (measurement instrument was their own) did increase over the course of the semester.

In this study we examine whether participative class environments, in general, are related to emotional intelligence, rather than looking at whether learning about emotional intelligence can increase EI. During their four or more years of college, students have a variety of experiences beyond acquiring specific knowledge. They face the pressures of simultaneously preparing for different classes while they manage their lives outside of school, dealing with challenges preparing individual and group assignments, and interacting with peers from diverse In classes where professors encourage participation through teamwork, backgrounds. discussions, debates, simulations, and role playing, students are more likely to need to rely on their emotional competencies, than in traditional classroom settings where the "instructor is on stage." Interaction with the instructor and peers gives students the opportunity to read emotions, see how emotions might create intragroup problems, incorporate their emotions into thought, and control their emotions and the emotions of others. Through these experiences they may develop an increased understanding of when it is preferable to increase "emotional volume," and under which circumstances it would be more prudent to stay calm and be less emotional. For instance when a team uses brainstorming in creating new ideas for solving a problem, a high level of emotional arousal may be more effective. In contrast, when the same team needs to make a rational choice from a list of alternatives, or to find weaknesses in certain positions, a lower level of emotional arousal might be preferable. The more engaging and participative the educational experience of students, the more opportunity they should have to develop emotional flexibility and resiliency, learn to read the emotions of others, and use their knowledge of emotions to help guide their actions.

In order to have a participative class environment two conditions need to be met. As discussed above, faculty can provide students with opportunities to participate by encouraging discussion and other interactive activities, but students must also perceive the existence of a supportive climate. Students differ in their openness towards teamwork, discussion and other types of class interaction. Fear of social disapproval, ridicule, and appearing inadequate may seriously impede a student's active involvement (Weaver and Qi, 2005). Students are more likely to participate when a professor establishes a receptive and safe environment in which students feel comfortable expressing their views, asking questions and assessing contribution of others (Auster and Wylie, 2006; Bonwell and Eison, 1991). Such tactics as giving students sufficient time to articulate their thoughts without interrupting them; moving away from a student who is speaking to increase his/her space; ensuring that particular students do not dominate "air time"; and working with quieter students outside the class reduce students' anxiety and help to create a supportive emotional atmosphere (Auster and Wylie, 2006).

Weaver and Qi (2005) and Fassinger (1996) suggest that fear of peer disapproval and informal norms of participation among students can also have a significant impact on student participation. Weaver and Qi (2005) found that although most students believed that class participation significantly contributed to the learning process, there were clear norms regarding verbal contributions. Students often showed their exasperation with those who they thought spoke too much by rolling their eyes, "tapping pens and pencils, giggling, whispering to each other, coughing, shifting in their seats, and sighing loudly" (Weaver and Qi, p.252). Also,

students may be reluctant to participate if they fear their peers won't respect their opinion, or will view them as "teacher's pet". Based on these arguments we hypothesize that:

- H₁. Opportunities for participation will be positively associated with students' emotional intelligence.
- H_{2.} A supportive climate will be positively related to students' emotional intelligence.

In this study, we also examine whether gender might moderate the relationship between a participative classroom environment and emotional intelligence. We have two reasons for investigating a moderating effect. First, studies have been consistent in showing that females have higher emotional intelligence than males (Austin, Evans, Goldwater and Potter, 2005; Bay and McKeage, 2006; Day and Carroll, 2004). Therefore, there may be more of a limit as to how much their EI can increase during their college experience. Second, several studies have indicated that male students generally participate verbally more than female students (Caspi, Eran and Kelly, 2008: Haas and Brooks, 1982; McMullen, 1992). Krupnick (1985) found that male students dominated class discussions, particularly when the instructor was male and the majority of the students were male. They also discovered a tendency for women to speak more briefly. Fassinger (1995) observed that male students tended to participate more than females, and that the participation of female students in classes was influenced by the emotional climate of the classroom and their level of confidence. Crombie, Pyke, Silverthorn, Jones, and Piccinin, (2003) also found that among the active students there were significantly more males than females, and that males reported higher levels of participation and more and longer interactions with their instructors. Constantinople, Cornelius and Gray (1988) maintained that male students received more acknowledgment of their contributions to class discussion and more elaboration of their comments than did female students. Given the fact that male students tend to participate more than females, and females start out with higher EI to being with, we hypothesize:

H₃: The positive association between opportunities for participation and EI will be greater for men than for women.

The relationship between supportive participative climate and emotional intelligence may also be moderated by gender, but in this case, the relationship may be greater for women than for men. Past research has shown that women demonstrated lower self-confidence than men (Nieva and Gutek, 1981), and as mentioned earlier, Fassinger (1995) found that women's participation was affected by the level of their self-confidence. Female students might need more encouragement and support in order to be engaged than male students. Past research found that "a perceived chilly campus climate can, in fact, have negative implications for women's cognitive growth" (Pascarella, Whitt, Edison, Nora, Hagedorn, Yeager, and Terenzini, 1997). Such unfavorable climate might also limit their emotional growth. Therefore, we hypothesize: H₄: The positive association between supportive climate in the classroom and EI will be greater for women than for men.

EI AND ACADEMIC PERFORMANCE

Improvement of emotional intelligence can be regarded as an end in itself since the development of students' practical skills is one of the goals of higher education, (besides knowledge and ability to learn) (Astin 1985). At the same time EI may be related to other desirable outcomes such as academic performance. Several studies have looked at this relationship but the results have been quite mixed. Lam and Kirby (2002) using the MSCEIT instrument developed by Mayer, Salovey and Caruso (1997) found that students' emotional intelligence contributed positively to their individual cognitive-based performance over and above the level attributable to general intelligence. The authors pointed out that "the ability to guard against distracting emotions and to build on enhancing emotions facilitates individual task performance as well as team performance" (Lam and Kirby, 2002, p.140). Using the trait framework and the EQ-i measure, Parker et al. (2004) found a positive relationship between EI and academic performance measured by first year GPA, but only by comparing the high and low ends of the GPA distribution. Jaeger (2003) also found a positive relationship between the EQ-i measure and grade point average for first year students.

Ashkanasy and Dasborough (2003), using the ability framework, examined whether teaching about emotions in an undergraduate leadership course would increase individual and group performance. They found that EI, measured by the MSCEIT, was positively related to exam performance and class grades. On the other hand Newsome, Day, and Catano (2000), using the trait based definition of E, measured by the EQ-i found no relation between emotional intelligence and students' GPA. Results of a study by O'Connor and Little (2003) indicated that emotional intelligence did not predict students' academic achievement regardless of whether the type of instrument used to measure it was self-report EQ-i (Bar-On, 2000) or ability-based MSCEIT. One possible explanation for these inconsistent results is that there may be interaction or moderating effects (*Côté and Miners*, 2006; Barsade and Gibson, 2007). For example, Rode, Mooney, Arthaus-Day, and Near (2007), using the MSCEIT, found that EI was only related to GPA for those who were high in conscientiousness. Given the mixed results of previous research, we decided to examine this relationship again, and we hypothesize:

H5. Emotional intelligence will be positively related to GPA.

METHODS AND MEASUREMENT

Subjects and Procedure

The subjects for this study were undergraduate business school students at a state college in the Northeast. We selected classes for our study that were composed mostly of upperclassmen, so that students would have had experience in several classes. To reduce bias, we did not select our own classes. There were two parts to the study. For the first part, students were given a short pen and pencil survey to complete during class time. They were told that two professors were conducting a study on what factors might lead to academic success, and assured that their results would remain confidential. They were given a cover letter that explained that in addition to taking the online survey, students who wanted to participate (participation was completely voluntary), would also need to complete a 30-40 minute online survey that they would need to access with the login code and password that appeared in the letter. Students were asked to indicate their name and email address at the top of the in-class survey so that the researchers could match it to their online surveys and send them reminder emails with the login code and password. Two-hundred and sixty-five surveys were completed in-class, and of those 265, 137 students completed the online survey for a response rate of 51%. Fifty-nine percent of the sample was female, and 71% were upperclassmen. The average age was 22 with a range of 18 to 43. Students worked an average of 22 hours a week, and had an average of 2.5 years of full time work experience.

Measures

Individual characteristics: We asked respondents to indicate their gender and work experience, age and college status on the in-class paper and pencil survey. GPA: This was measured, with written permission from the students, using student records.

Emotional intelligence: This was measured by the 141 item on-line MSCEIT developed by Mayer, Salovey, and Caruso (2002). This is an ability based scale that measures how well people perform tasks and solve emotional problems, rather than relying on individuals' subjective assessments of perceived emotional skills. The MSCEIT provides total scores, two area scores and four branch scores. Although some studies have included branch scores, we only included the total score, because a couple of recent studies (Keele and Bell, 2008; Rossen, Kranzler, and Algina, 2008) have questioned the factorial structure of the branch scores.

The predictor variables, opportunities for participation, and a supportive climate, were measured by the in-class questionnaire. These items were included in a section interspersed with items for scales used in another study. Some of the items were adapted from Fassinger (1995), and others were created for this study. They were then analyzed using principal components analysis with varimax rotation. Items were chosen for the scales that loaded highly on one factor

and only one factor. The items for the opportunities for participation scale included: (1) My classes require a lot of participation; (2) Instructors here try to promote class discussion; (3) My classes are engaging; (4) Instructors encourage students to provide their inputs; (5) Instructors encourage students to ask questions; and (6) Instructors encourage students to share their opinions. Response alternatives ranged from (1) Strongly disagree to (5) Strongly agree. The six items were averaged, and the scale had a mean of 3.93, standard deviation of .46, and alpha coefficient of .76.

The items for the supportive climate scale included: (1) Instructors here respect the opinions of students; (2) My peers discourage others from appearing too confident; (3) Students do not respect each other's views; and (4) Students feel pressure from peers not to speak in class. The last three items were reverse scored and items were averaged. Response alternatives ranged from; (1) strongly disagree to; (5) strongly agree. The mean of the scale was 2.44, the standard deviation was .58 and the alpha coefficient was .60.

RESULTS

Table 1 shows the means, standard deviations, and the intercorrelations among the study variables. Results show that there was a significant positive zero-order correlation between emotional intelligence and supportive climate. None of the other variables were significantly related to emotional intelligence. Hypothesis 5, emotional intelligence will be positively related to GPA, was not supported.

Table 1: M	leans, Stan	dard D	eviation	ns and Inte	rcorrelati	on Matrix		
	Mean	SD	EI	Wk Exp	Exp Gender Opportunities		Supportive	GPA
						for participation	Climate	
EI	.43	.09	1.00	.15	.14	.16	34	.07
Work Exp.	2.54	4.07	.154	1.00	13	.16	11	.14
Gender1	.59	.49	.142	13	1.00	.03	06	.11
Opportunities for participation	3.93	.46	.158	.16	.03	1.00	09	14
Supportive Climate	2.44	.58	.34*	.110	.06	09	1.00	.16
GPA	3.00	.53	.07	.14	.11	14	.16	1.00
*p<.05 1 Men=0, Women=1								

We used regression analysis to test hypotheses 1 through 4. Table 2 shows the results. We entered the individual characteristics, years of full-time work experience and gender, first, to control for these variables (gender was dummy coded, men=0, women=1). We then entered the participative class environment variables, followed by the interaction terms in step 3 (Cohen and Cohen, 1983).

		TAB	BLE 2 – Hie	rarchical Regro	ession Anal	ysis			
Ма	dal	Unstan Coeff	dardized icients	Standardized Coefficients					
WIG	dei	В	Std Error	Beta	t	Sig	Change in R Sq	F	Sig
	(Constant)	.405	.013		31.991	.000			
1	Full-time work experience	.004	.002	.177	2.073	.040	.05	3.795	.025
	Gender	.031	.015	.176	2.062	.041			
	(Constant)	.434	.069		6.305	.000			
	Full	.003	.002	.120	1.456	.148			
2	Gender	.026	.014	.149	1.838	.068	.12	6.650	.000
	Opportunities	.023	.015	.121	1.491	.138			
	Supportive climate	046	.012	313	-3.869	.000			
	(Constant)	.164	.103		1.593	.114			
	Full	.002	.002	.112	1.396	.165			
	Gender	.480	.134	2.755	3.582	.000			
3	Opportunities	.084	.023	.448	3.693	.000	.17	6.886	.000
	Supportive climate	034	.017	229	-1.993	.048			
	Opportunities*Gender	103	.029	-2.365	-3.500	.001			
	Supportive climate*Gender	020	.023	299	876	.383			
De	pendent Variable: EI								

Model 1 shows that full-time work experience and gender explained five percent of the variance of EI (F=3.80, p<.05). Women and those with more full-time work experience were higher in emotional intelligence. In model two, the two participation variables, opportunities for participation and supportive climate, accounted for 12% of the variance in EI (F Δ in R², p<.001), attributable only to supportive climate. Hypothesis 2, supportive climate will be positively related to EI, was supported, while Hypothesis 1, opportunities for participation will be positively supported to EI, was not supported. With these variables entered, gender and full-time work experience were not related to EI.

In Model 3, the interaction terms were added, the cross products of gender and opportunities for participation, and gender and supportive climate. The interaction terms explained 17% of the variance (F Δ R²=6.65, p<.001), attributable to the cross product term of gender and opportunities for participation, supporting Hypothesis 3 but not Hypothesis 4. In order to interpret the interactions we split the sample according to gender and ran two separate equations, one for males (n=56) and one for females (n=81). The results are shown in Table 3. Although opportunities for participation were positively related to EI for men, it was not related to EI for women.

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Table 3: Equations for men vs. women								
Men (N=56)								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig		
		В	Std. Error	Beta	t 51	Sig		
1	(Constant)	.404	.014		29.113	.000		
	Full-time work experience	.005	.003	.218	1.643	.106		
2	(Constant)	.170	.092		1.844	.071		
	Full-time work experience	.004	.002	.173	1.527	.133		
	Opportunities for	.083	.020	.460	4.045	.000		
	participation							
	Supportive climate	035	.015	261	-2.314	.025		
Dependent Variable: EI								
Women (N=81)								
Model		Unstandardiz	ed Coefficients	Standardized Coefficients	t	Sig		
		В	Std. Error	Beta				
1	(Constant)	.436	.011		40.356	.000		
	Full-time work experience	.003	.002	.150	1.350	.181		
2	(Constant)	.656	.090		7.275	.000		
	Full-time work experience	.002	.002	.075	.677	.501		
	Opportunities for	021	.020	114	1.060	280		
	participation				-1.009	.289		
	Supportive climate	055	.017	354	-3.246	.002		
Dep	Dependent Variable: EI							

DISCUSSION

The primary purpose of this study was to examine the relationship between participative college class environments and development of students' emotional intelligence. We hypothesized that opportunities for participation and a supportive climate would be positively related to students' emotional intelligence. We also hypothesized that these relationships would be moderated by gender. Finally, we hypothesized that emotional intelligence would be positively related to GPA. Only a couple of our hypotheses were supported.

We did not find a positive relationship between opportunities for participation and EI for the sample, as a whole. However, we did find an interaction effect. Opportunities for participation were related to EI for men, but not for women. We suggest that this is because males tend to participate more in class discussions (Fassinger, 1995; Crombie at al., 2003; Krupnick, 1985) than women, but this needs to be examined more thoroughly in future studies. We did not measure actual participation rates, because we were investigating participation opportunities across a range of classes, and not just within one class.

As we predicted, supportive climate was positively related to emotional intelligence. This relationship was unaffected by gender. The supportive climate scale included items related to support by both faculty and peers. This supports the conclusions of Pascarella and Terenzini

(1998) that student development is facilitated by active interaction between students and both peers and faculty. Ethington (2000) found that it was not even "the involvement with faculty, per se that impacts their development, but rather the opportunities and requirements developed by faculty for their courses (p. 716). She suggested that when involvement is encouraged by faculty across classes, "the general environment of the institution is one of challenge and stimulation: the normative peer group environment becomes characterized as a body of students heavily engaged in the college experience" (p.716). Weaver and Qi (2005) and Fassinger (1996) found that the peer group environment was perhaps even more important than faculty encouragement of class interaction in terms of level of participation. None of these authors explored the development of EI, but our results do suggest that emotional competency may be facilitated through participative classroom environments. . In these environments students may learn to accurately read the emotions of others, regulate their emotion, and adapt their affective responses.

Our results also showed, in accordance with a couple of previous studies (*Newsome et al.*, 2000; O'Connor and Little, 2003), that emotional intelligence was not related to GPA. We suggest that GPA is more likely to be related to cognitive ability than emotional intelligence; however, we did not include a measure of cognitive ability in this study. We also agree with *Côté* and Miners (2006) and Barsade and Gibson (2007) that the lack of a linear relationship may be due to moderating or mediating effects of personality variables. Future research should consider how personality variables may interact with participation variables to influence GPA. Future studies could also consider whether EI might be related to important outcomes for college students other than EI, for example the ability to find a job.

Although results from this study seem to suggest that emotional intelligence can be developed through participative college class environments, causality can't really be determined since our study was cross-sectional. Another explanation, although less plausible, is that students with greater emotional intelligence perceive that faculty and peers are more supportive of participation. In future studies, emotional intelligence needs to be measured as students begin their college experience, and again at the end of their last semester. Also, in future studies, more specific aspects of participation such as the use of role plays, case studies, and team exercises could be investigated. Finally, although this study shows that a classroom climate supportive of participation is important, the factors that contribute to a supportive climate need to be examined.

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ACCOUNTING FOR A SIMULATED INVESTMENT PORTFOLIO: ACTIVE LEARNING PEDAGOGY IN INTERMEDIATE ACCOUNTING

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ABSTRACT

An Active Learning Project was assigned to students in an Intermediate Accounting class at a southeastern, regional university during the fall semesters of 2007 and 2008. The students were asked to simulate an investment of \$450,000 in three portfolios: stocks classified as "Available-for-Sale Securities", stocks classified as "Trading Securities", and bonds classified as "Available-for-Sale Securities". The investment was to be divided fairly equally, \$150,000, between the three portfolios. During the three month duration of the project, each student was required to document the simulated purchase and sales transactions for securities they selected as well as the subsequent accounting treatment of the transactions. The students were also required to document the accounting treatment for the adjustment of their portfolios to fair value at the end of month one and month two. Based on the projects submitted and student feedback, this project was determined to be a valuable learning activity. It provided the students practical experience in collecting and reporting relevant accounting transactions and in applying textbook material to real-world situations based on their simulated portfolios.

INTRODUCTION

Accounting for Investments is the focus of Chapter 17 in the 12th and 13th editions of the Kieso, Weygandt, and Warfield "Intermediate Accounting" textbook. In order to enhance student learning and to assess students understanding of the material, a three-month project was developed to assign to students in an Intermediate Accounting Class of a southeastern, regional university. The focus of the project is the accounting for investments in equity and debt securities issued by other companies. As part of the project assignment, each student is allocated a fictional amount of \$450,000. The students are instructed to investigate the stocks of companies of their choosing and then to simulate purchases of three to four stocks of different companies in each stock portfolio utilizing approximately \$150,000 of the fictional funds for each stock fund. The portfolios of the students must include both stock purchases and stock sales for investments classified as available-for-sale securities and trading securities. The remaining fictional funds of \$150,000 are to be used to simulate an investment in bonds of one

company. The students are required to document the accounting treatment for the purchase transactions, the sales transactions, and the adjustment to fair value for each portfolio at the end of each month during the period of the project. It is up to the individual student to develop their own system of documentation.

The purposes of the project are to enhance the students' understanding of the subject of investments and to give them hands-on experience in actually identifying and collecting documentation on stock and bond prices. An additional purpose is to provide an opportunity for the students to prepare work-papers to document the accounting treatment of the simulated transactions. The students are also instructed to incorporate the use of spreadsheets to document their transactions and to summarize their portfolios. The preparation of the work-papers and subsequent instructor comments provide the students with feedback they can utilize both in other school projects and in the work place. The reward for students participating in this active learning project is a grade of up to 35 points, which represents approximately 5% of their total course grade.

Through a review of the literature, this paper will discuss active learning in general, compare active learning for in-class assignments versus out-of-class assignments, and draw conclusions about which may be preferable for intermediate accounting courses. Following the Literature Review section, there is a section devoted to the detailed discussion of the project as well as the results section.

LITERATURE REVIEW

Active Learning

Active learning is defined as any strategy "that involves students in doing things and thinking about the things they are doing" (Bonwell and Eison, 1991, p. 2). It has attracted considerable attention in higher education in response to concerns about how and what students are learning (Bennis and O'Toole, 2005; Lyman, 1997). Among other things, Active Learning is also referred to as "Applied Learning," "Group Learning," "Collaborative Learning," or "Cooperative Learning". Each of these involves small groups of students working together to solve exercises and problems during a class period (Hermanson, 1994; Holt, 1995; Atkinson and Jones, 1997).

Active Learning In The Classroom

The evolvement of students in active learning has become increasingly important to schools and colleges of business as they respond to criticisms about the lack of relevancy of time spent in the classroom (Bennis and O'Toole, 2005; Porter and McKibben ,1988; Lyman, 1997). Fortunately, educators have begun to find evidence that their peers are responding to the

criticisms. Research published since 2000 shows that business and economics educators are more frequently using active learning techniques in the classroom than in years past (Zygmont, 2006; and Dallimore, Hertenstein and Platt, 2006) and although there are many different forms of active learning, most of them are classroom-based (Auster and Wylie, 2006).

Auster and Wylie, (2006) concerned with criticisms of classroom relevancy, presented their version of in-classroom learning assignments, and in doing so, validated the value to their students. Bonwell & Eison, 1991, argue that active learning can have a high impact on what students are able to learn. They propose a systematic approach to creating active learning *in the classroom*. Schee (2007) agrees with this philosophy and proffers that it may not be necessary to leave the classroom to have an excellent Active Learning experience. He suggests an in-class, interactive activity for Principles of Marketing classes as a possible solution. The activity is called The Exchange Game. He implements the game in his classes on the first day of class, and involves the entire class. The outcomes from his active learning experiment were: 1) increased class participation, 2) engagement with the instructor and other students, 3) enthusiasm for the course, and 4) increased knowledge of principles of marketing.

Auster and Wylie (2005) point out that active learning emphasizes the application of theory and concepts by involving students in the learning process. A variety of methods exemplifies active learning, such as, but not limited to, "problem-solving exercises, informal small groups, simulations, case studies, role-playing, and other activities" (Meyers & Jones 1993, p. xi). Tushman, et. al. (2007) find that their executive education students who are involved in "action-learning" programs out-perform the students in their traditional executive education program. It is for reasons such as these that this project is presented.

Active Learning Projects Away From Class

Recently, Martin Ince (2007) published an article about Professor Michael Eraut of the UK's University of Sussex who headed a teaching and learning research project called LINEA (Learning in Nursing, Engineering and Accountancy). Eraut and his colleague, Judith Furner, found that accountants just may be in the profession that is getting early learning right. Among other things, they found that learning something and using it almost simultaneously was one of the most stimulating aspects of becoming an accountant. They set forth in their findings that accountants are involved in a basic activity of asking questions to collect information, and then immediately applying that information to do their jobs. Eraut and Furner use the field of auditing as an example of this and find that question-asking skills are the key to a job well-done. They also find that question-asking skills are of two sorts: 1) those where new auditors continually ask questions of the client about their business in order to process the client's information to complete the audit. The art of question-asking for auditors takes place on the job which, of course, is an Active Learning environment.

Authors of the current research believe that the assignment of a project to be completed outside of the classroom, but which is also supported by in-class reinforcement, accomplishes learning at its highest level as noted in Blooms' Taxonomy. This approach to learning is also supported by the Cone of Experience, (Table 1) developed by Edgar Dale in 1960, which holds that students generally remember about 90% of what they say as they do a thing. This is the ultimate way for students to learn and retain information. Fortunately, projects of this type are especially well-suited to accounting classes. Based on Table 1, in-class lectures, compared with active learning projects, result in decreased retention of the material covered, and thus, Active Learning projects such as the one involved in this research are important.

TABLE 1 RETENTION OF INFORMATION STUDIED		
Based on Dale's CONE OF EXPERIENCE		
10 %	of what they read	
20 %	of what they hear	
30 %	of what they see	
50 %	of what they see and hear	
70 %	of what they say as they talk	
90 %	of what they say as they do a thing	
Edgar Dale, 1960, v	ia Cooper and Krinsky, 1991	

THE PROJECT

Pilot Project

The initial pilot project was assigned to students enrolled in an Intermediate Accounting class in the spring semester of 2007. The students were instructed to simulate an investment of \$300,000 in "Available for Sale" and "Trading Securities" stock portfolios. The assigned project included instructions for dividing the simulated investment between the two portfolios with stocks purchased from three to four different companies for each portfolio over a three-month period. During the period of the project, each student was also required to sell one company's stock in each portfolio and purchase a different company's stock. It was the student's responsibility to determine their stock selection as well as the exact dates of the purchases and sales transactions. Students were required to document and record all transactions of purchases and sales, along with the adjusting entries to fair value at the end of each of the first two months. The project was completed by 33 students. The average grade on the project was 29.76 out of a possible 35 points, and twelve students scored a perfect grade on the project.

The Revised Project

Based on feedback from the initial project assignment, the project instructions were revised to provide better clarification to the students and to include a step related to the simulated purchase of approximately \$150,000 in bonds classified as trading securities. A grading rubric was also developed to aid in the consistent grading of the projects. An analysis of the results is important in the continuous improvement of the instructor's delivery of the material in the classroom. It provides additional information on the areas where the students struggle with mastering certain learning objectives.

The project is designed to assign to students after they study the topic investments as typically taught during an intermediate accounting class. The Kieso, Weygandt, and Warfield Intermediate Accounting textbook covers the material on investments in Chapter 17. The material covered encompasses the accounting for the investments in debt securities (primarily corporate bonds) and the accounting for the investment in equity securities (primarily corporate stocks). The accounting for investments in equity securities is further divided into holdings of less than 20% of a company's stock, holdings between 20% and 50% of a company's stock , and holdings more than 50% of a company's stock. While the accounting for holdings between 20% and 50% is covered (the equity method), most of the focus of the textbook and the classroom discussion is concentrated on the holdings of less than 20% of a company's stock (fair value method). The accounting for holdings of a company's stock of more than 50% is not covered as it is the focus of more advanced accounting classes.

As noted, the material covered in the textbook and subsequently in class primarily focuses on the coverage of the "Fair Value" method of accounting for holdings of less than 20% of a purchased company's stock. Individual companies further divide stock purchases either into an "Available for Sale" portfolio or a "Trading" portfolio. In reality, a company classifies stocks in one of the two categories based on how long they intend to hold the stocks. If they intend to hold them for a short period of time (frequent buying and selling), they classify them in the trading securities portfolio. If the company does not intend to sell the securities in the short-term, they are classified as available for sale. The difference between the two categories is the resulting accounting treatment for the adjustment to fair value at the end of an accounting period. While the adjustment for trading securities to the market value is made directly to equity. A general ledger account entitled "Unrealized holding Gain or Loss – Equity" is used to record the difference between cost and market value and is reported directly in stockholder's equity in the balance sheet. With stocks classified as available for sale, an adjustment to income is only made for this category of securities once the actual stock is sold and a realized gain or loss results.

The course material on investments also includes coverage of investments in debt securities. While there are three separate categories of investments in debt securities for accounting and reporting purposes, the project only includes the accounting for "Available for

Sale" debt securities. The other two options for accounting for debt securities are "Held to Maturity" and "Trading" and are not covered in the project due to the fact it is more difficult to locate bond pricing. As with stocks, the investment in bonds is classified into one of the categories based on how long the company intends to hold the investment.

Due to the nature of the information utilized in the assignments in this chapter, it was determined the material lends itself to coverage in an active learning project. Textbook exercises and problems include information on stock purchase price; number of shares purchased, and related market values. Students are required in the textbook problems to prepare journal entries from the information given. Because stock and bond prices are readily available for publicly traded companies, the project was developed to have students apply the concepts and accounting principles related to investments to their own stock purchases. Utilizing the information they have developed from real companies' stock and bond prices should enhance the students' understanding and comprehension of the investment material.

Project Assignment

At the completion of the lecture on equity and debt investments, students are given instructions on how to divide up a simulated investment portfolio and then are instructed briefly on what is required for each (Appendix A) part of the assignment. It is intentional on the instructor's part not to provide detailed instructions as part of the purpose of the project is for the student to develop their own formats for documentation. However, the students are instructed that the project is to be prepared utilizing a spreadsheet program and should be well organized. A portion of the grade is based on appropriate documentation and professional presentation.

The project covers a three-month period. The purpose is to allow the students to make journal entries to the fair value for the equity securities at the end of month one and month two. The second month of the journal entry is more difficult because in the calculation of the adjustment amount, consideration has to be given to the previous balance in the "Securities Fair Value Adjustment" general ledger account. The three-month time period also gives the students the opportunity to follow the market prices of the stocks purchased. While the students are not graded on stock performance, it is interesting to them to follow how well their portfolios perform and provides lively classroom discussion.

THE RESULTS

In the fall semester of 2007, forty-three projects were completed from forty-five students. The two students who did not turn in the assignment earned a grade of zero for that 35-point portion of their total grade for the semester. The average on all the projects was 30.4 points. The highest grade was a 35 and 17 was the lowest grade. Nine students earned a grade of 35. In the fall semester of 2008, all thirty five students that were assigned the project completed it. Six

students earned a 35 on the project and the average of all students was 30.74. The lowest grade was a 25.

A grading rubric was developed to grade the projects. The rubric was broken down into ten categories. The first nine were directly related to the steps in the project and the last category directly related to project presentation. The ten categories were then subdivided into poor, fair and good with possible points assigned for each.

The first category in the project related to the students following the directions for the simulated purchase of three to four trading securities. The students could select as many shares of stock of any companies they chose as long as they allocated approximately \$150,000 of their total investment amount to the purchase of the stocks in this portfolio. The students were instructed to prepare journal entries to record the purchase, to show the calculation of the total purchase price (i.e. number of shares purchased x market price on the date of purchase), and to provide documentation of the purchase price. In all of the steps in the project, it was left up to the student to develop their own format for the calculations, the subsequent journal entries, and the documentation of the market prices of the stocks. The total possible points on this area were 3.0 and the average for all students was 2.8 for both semesters. The most common reason for point deduction in this area was the students did not show the calculation of number of shares purchased at the applicable price. The students primarily documented the purchase with a printout of the stock prices from an online source such as Yahoo Finance or AOL Finance. Time was spent in class showing the students sources to locate stock prices online. It was up to the students to pick the actual companies and the dates of the sale and purchase transactions.

The second category was very similar to the first category but was related to the students' simulated purchase and the resulting documentation for three to four stocks in the category of available for sale securities. The students were instructed to allocate approximately \$150,000 for this portfolio. It was up the students which stocks to classify as trading securities and which stocks to classify as available for sale securities. The instructions to the students were the same as for the trading securities. The grading was also the same and the resulting average in this category was also a 2.8 average (both semesters) out of a possible of 3 points.

Accounting for the purchase and related documentation of approximately \$150,000 in bonds, including the accrued interest, was the third category in the project. Discussion was spent in class on how to find bond prices since they are harder to locate than stock prices. Students primarily used the website http://investinginbonds.com/corporatebonds. The total possible points in this category was also 3.0 points. Students were graded on the preparation of the correct journal entry for the purchase price and the documentation. The average student grade in this area was 2.7 for fall semester 2007 and 2.9 for fall semester 2009. The average was lower in the fall of 2007 because two students did not attempt this step in the project. The other reason for students losing points in this category was primarily due to the students not properly including the accrued interest on the bonds in the purchase price and the resulting journal entry.

The fourth category in the project instructed the students to document the adjustment of the trading securities portfolio to the market price at the end of the first month of the project. The students were graded on the documentation of the calculation of the amount for the adjustment, including cost and market value, as well as the documentation of the market price used in the adjustment amount. The average was 2.4 out of a possible 3.0 points for both semesters. Students primarily lost points in this category for not properly showing the calculation of the adjustment amount. Several students also lost points for preparing an adjustment entry for each company in each portfolio instead of one single adjustment amount for the entire portfolio.

The fifth category requirements were similar to the fourth category but related to the adjustments to fair value for the available for sale portfolio. Similar results were obtained for this category, as compared to the fourth category, as the only difference in the journal entry is the actual general ledger account titles utilized in the adjustment process. The calculations and documentation requirements were the same as for the fourth category. The average points achieved were 2.4 out of 3.0 (both semesters) and the results were similar as those obtained in the fourth category. Students lost points for primarily the same reasons.

The next step in the project was for the students to select one of the stocks in the trading security portfolio and one in the available for sale portfolio for a simulated sale. The date of the sale was also selected by the students in order to record a journal entry for the simulated sale. To receive all 3.0 possible points in this area, the students had to properly record the journal entry for the sale, including the documentation of the calculation of the gain or loss on the sale. Documentation was also required for the sales price. The average on this was a 2.4 in fall of 2007 and 2.8 in the fall of 2008. Students primarily lost points in this category for failing to properly compute the realized accounting gain or loss on the sale or for not providing documentation on the calculation.

The students were then instructed to provide documentation on the purchase of a replacement stock for the stock sold in the previous step. The possible points in this category were a 2.0 and all the students turning in projects for both semesters earned a 2.0 on this step.

The next two categories relate to the adjustment of the trading securities and available for sale portfolios to their relative fair value at the end of month two of the project period. The average on these areas dropped to the lowest of all the categories with a 2.2 average for the fall of 2007 and a 2.3 average for the fall of 2008 out of a possible 3 points. This step was more difficult because in the adjustment to the market value at the end of month two, the student has to consider the balance in the "Securities Fair Value Adjustment – Trading Securities or Available for Sale Securities" account from the previous month. Students lost points if they ignored the previous adjustment or the balance in this account in their calculations. Again, the results of the project provide valuable information to the instructor on the comprehension of the course material on investments.

The final nine points of the project related to overall presentation. The students were given very little instruction on this step other than it should be well organized and documented. This was intentional as part of the focus of the project was for the student to determine their own format and flow of the documentation. For example, some students prepared one journal entry for the purchase of the entire trading security portfolio but provided a backup spread sheet detailing the number of shares and stock price for the related securities in the portfolio. Other students prepared a journal entry for each purchase of a company's stock and documented the calculation on the face of the journal entry worksheet. Both were acceptable as long as the documentation was organized and easy to follow. The students earned an average of 8.3 in the fall of 2007 and 8.0 in the fall of 2008 out of the 9.0 possible points. Points were primarily lost due to mistakes in the typing, confusion in the flow of the information provided, or if the project appeared to be hastily thrown together. Overall, the students demonstrated their ability to develop professional projects that were well documented.

Comparative Results

In addition to analyzing the results as noted above, the students' exam grades on the related material were compared to a control group of students in another class that did not complete the learning project. The control group consisted of students taking the same intermediate accounting class at the same university in the fall of 2009. The instructors were different but the control group instructor covered the same material with the exception of the learning project. In order to make the comparison, the multiple choice exam questions (from each instructor's individual exam on the investments material) were categorized based on the first three learning objectives of the chapter related to Investments. The percentage correct were averaged based on the learning objective and the number of questions asked. The results are shown below in Table 2.

Table Two Comparative Results of Exam Questions Grouped by Learning Objective				
Learning Objectives as outlined in Intermediate Accounting,	Learning Project Group	Control Group		
Kieso, Weygandt, and Warfield, 12 th Edition.	Percentage Correct	Percentage Correct		
Identify the three categories of debt securities and describe the accounting and reporting treatment for each.	84.2%	67.6%		
Understand the procedures for discount and premium amortization of debt securities.	87.25%	76.4%		
Identify the categories of equity securities and describe the accounting and reporting treatment for each category.	e categories of equity securities and describe the and reporting treatment for each category. 74.5%			
Additional questions on exam not related to the learning project	69.7%	69.9%		
Number of students completing the exams	38	17		
Average GPAs of students completing the exam	3.06	3.01		

Although there are not enough observations to perform statistical analysis, the results do provide anecdotal evidence the learning project provides a valuable learning experience for the student. The results of the first three categories in Table Two indicate the group that completed the learning project scored higher on questions on the exam (related to the items included in the learning project) as opposed to the control group. In order to strengthen the argument that the learning project contributed to the students' understanding of the material, the results from the remaining questions on the exam (those that were not related to the learning project) were compared and were noted to be similar, as shown also in Table Two. Additionally, to determine whether the differences in the two groups were due to the learning project or the fact the students from the learning project group were just better students, the GPAs were compared as noted in the table above. The results of the GPA comparison indicate the two groups are similar in terms of their learning output as well.

While the value of the learning project is noted in exam results, an additional aspect of the project is that it provides the students with an opportunity for developing professional work papers. In accounting, it is essential to create an "audit trail" for accounting transactions, journal entries, etc... This project both enhances student learning based on exam results and enhances their professional technical communication skills.

COSTS OF USING ACTIVE LEARNING PROJECTS

The use of active learning projects is not without costs. To the instructor one such cost is the significant amount of time and effort in developing the assignment and presenting it to the class. Additional time is spent in class on follow-up Q & A sessions and outside the class in grading the work submitted and subsequently providing the students with feedback. The extra time it takes for each of these activities is sizeable and must be a consideration for the instructor. While the rubric assists in the grading process, it also presents a time consideration in its development. The time spent discussing the projects in class also takes some time away from in classroom instruction and learning. Questions are welcomed from the class throughout the assignment period in order to clarify any points that are misunderstood in the assignment.

Obvious costs to the students are the time and energy expended determining the stocks and bonds to purchase, locating the stock and bond prices, and then preparing the required documentation. Although the material is covered in class, the student also has to spend time reviewing the textbook related to the proper journal entries to make for each step in the project. However, it is the conclusion of the instructor that the costs of the project are outweighed by the benefits received by the students.

SUMMARY AND CONCLUSIONS

In conclusion, the overall feedback from the students was positive. The project allowed the students to select their own stocks and to develop their own format for documenting the simulated investment transactions. While the students were not graded on the performance of their portfolios, it did provide real-world data for the simulated purchase of the stocks and bonds and the related subsequent accounting journal entries. In-class and homework assignments from the textbook provide the information to the student. In this project, the student is required to determine the information to utilize for making the initial journal entries and the subsequent adjusting entries. The project is an out of class assignment but is reinforced by classroom discussion. Overall, the project is designed to aid in the students' comprehensive understanding and retention of the course material as it relates to investments.

While students were not graded on stock performance, students enjoyed the competition that naturally resulted from sharing in class how their portfolios were "performing". Open discussions on the project increased students' interest in the subject matter and in turn provided them with a more engaging learning experience. The project meets the criteria for active learning as defined by Bondwell & Eison, 1991, as anything that "involves students in doing things and thinking about what they are doing". It allows the students to learn while they simultaneously use the information in a practical application.

In addition, the project provides feedback to the instructor as to the extent of the students' understanding of the subject matter. Analysis of the results of the project allows the instructor to continuously improve the project as well as the classroom presentation of the material to enhance the students' learning. An additional consideration is the results from the project can be utilized for documentation of the assessment of the learning objectives for the material the project covers as well as the use of technology in the assignment. The use of a grading rubric assists both in feedback to the instructor and the documentation of the assessment of learning.

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APPENDIX A INTERMEDIATE ACCOUNTING INVESTMENT PROJECT

In this project you are allocated \$450,000 (fictional money of course) to invest in stocks and bonds of your choice. You can find market values on companies' stock prices from several different sources including www.yahoo.finance, http://money.aol.com, and http://moneycentral.msn.com/detail/stock_quote. You are to follow the instructions below in allocating and accounting for your investments. You are to use spreadsheet software for the documentation of calculations and journal entries.

In the first month, purchase 3-4 stocks that you will classify as trading securities. Prepare journal entries to record the stock purchases. Provide documentation to support the amounts in the journal entries and the stock prices. Also, purchase 3-4 stocks that you will classify as available for sale securities and follow the same instructions.

Purchase approximately \$150,000 in bonds to be classified as available for sale. Prepare the appropriate journal entry to record the purchase price along with any accrued interest. You will find information on bond prices at www.investinginbonds.com.

At the end of month one, prepare the adjusting journal entries to adjust both the trading securities portfolio and the available for sale securities portfolio to their fair market value. Provide documentation for your adjustments including calculations, cost, fair market value and the resulting journal entry.

During month two, sell at least one of the trading securities and one of the available for sale securities. Prepare journal entries to record the sale. Document the calculation of the gain or loss on the sales and the price of the stock on the date of sale.

Purchase at least one stock in each portfolio to replace the stock sold in #4. Record the appropriate journal entries and provide documentation on the purchase prices.

At the end of month two and three, prepare the adjusting journal entries to adjust the trading securities portfolio and the available for sale securities portfolio to fair market value. Provide documentation for your adjustment.

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THE IMPACT OF VOLUNTARY ACCOUNTABILITY ON THE DESIGN OF HIGHER EDUCATION ASSESSMENT

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ABSTRACT

This study examines the implications of the transparency requirement for business administration programs accredited by the International Assembly of Collegiate Business Education (IACBE), which has recently strengthened the public disclosure requirement of its accreditation process. Web based survey data represented responses from 74 colleges and universities. The population surveyed was comprised of 164 institutions based in the United States. The survey revealed that over 80% of the respondents felt that assessment was an integral part of their daily work, that assessments were driving change within their business units, and that assessment was a means for continuous improvement. In spite of these results, under 40% are making their assessments available to the general public. Overall, the study indicated that, at this point, IACBE schools remain strongly committed to assessment and do not see any conflict between assessing for self-improvement and assessing for accountability.

INTRODUCTION

Few institutions of higher education today question the merit of careful and consistent assessment of student learning. The assessment movement, which started in earnest in the late 1980s, is now well entrenched in higher education accreditation and expected by education's diverse stakeholders. Although some faculty members may still resent the need for assessment, the majority of academics now accept the culture of assessment as a condition of doing business, and most have bought into the goal of using assessment data to drive improvements in student learning (Ewell, 2009).

Countless assessment workshops are held annually to encourage colleges and universities to ask the tough questions of themselves, and to use the answers to these questions to propel continuous improvement (Angelo, 1999). Honesty and critical self-analysis are touted as the linchpins of great assessment, since "slam dunk" self-promoting activities waste time and do nothing to improve the learning process.

The transparency and accountability movement followed quickly on the heels of the assessment campaign, and has gained steam with the Spellings Report and its aftermath. The

intent was good: Colleges and university would provide their stakeholders consumer-friendly information about (among other things) student learning, and this information could then be used to assist students in making good educational choices.

The contradiction between the two assessment purposes is obvious and has been the topic of much research. Is the primary role of assessment self-improvement or accountability? Ewell (2009) claimed that this tension has dogged assessment for the past 25 years. If the driving function of assessment is self-improvement, it *must* uncover information that is less than stellar. If, instead, the primary function of assessment is accountability, the measurements chosen will be designed to produce data that are attractive to potential students and the general public.

Until recently, colleges and universities were able to construct two separate sets of assessment data – one for internal use and the other for public consumption. Since what was disclosed was voluntary, institutions could easily measure important learning outcomes for self-improvement and compile more palatable data for disclosure. Typically, learning outcomes were used internally for curricular improvement, and information such as graduation rates and scholarship awards were posted publicly. The call for transparency is becoming louder, though, and some accrediting agencies are now requiring institutions to post the results of their voluntary outcomes assessment activities on their websites.

The purpose of this paper is to examine the implication of this transparency requirement among business administration programs accredited by the International Assembly of Collegiate Business Education (IACBE), which has recently strengthened the public disclosure requirement of its accreditation process. In January 2010, a survey was sent to all U.S. IACBE accredited or candidate schools to determine how individual institutions are dealing with the new reporting requirement. Are colleges changing what they measure because they are required to make the results of their assessments public? An analysis of the results of these surveys was conducted to determine whether the call for public accountability in any way undermines the selfimprovement focus of outcomes assessment.

BACKGROUND

To be "accountable" an institution must accept responsibility for its actions. According to Kai (2009), "Highlighting efficiency and effectiveness and emphasizing results and outcomes are the basic characteristics of accountability in higher education (p. 39)." Although the accountability movement in higher education is often associated with the 2006 Spellings Commission and its famous report, the roots of accountability in academia reach back to the early 1980s when colleges and universities, for the first time, were compelled to compete with other public entities for diminishing public funds (Hamilton & Banta, 2008, p. 25). Initially, colleges and universities disclosed data to provide evidence of their efficiency and eligibility for funding.

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The early accountability movement went beyond ensuring compliance with federal funding requirements, though. Birnbaum (2000) noted that management fads in the business world often filter down into education, and perhaps some of the focus on accountability in higher education was the result of the Total Quality Management frenzy which firmly took hold in the for-profit business sector by the late 1980s and early 1990s. Before long, the quality process was applied to academic settings, where "quality" referred to giving the student customer a desired product at a reasonable cost (Grant, Mergen, & Widrick, 2002). Assessment, informed decision-making, and continuous improvements became buzzwords in academia as well as the business world, and soon educational accrediting bodies began to insist that colleges and universities demonstrate accountability in their self-studies.

The Spellings Report, however, might be cited as the force that truly set higher education on the road to reform. To a large degree, the work of Secretary Margaret Spellings and the Commission on the Future of Higher Education attempted to fully impart TOM into higher education; to reorient U.S. colleges to providing the highest possible quality of education at the lowest possible cost (Basken, 2007). Included among the commission's recommendations, however, was for colleges and universities to address the "inadequate transparency and accountability for measuring institutional performance" (Spellings Commission, 2006, p. 13). It was this principle, not the quest for high quality, that was deemed contentious by many faculty members and administrators in higher education. By the time the Spellings Commission began deliberations, most colleges and universities had already adopted cultures of assessment, and were using the results of their assessments to improve student learning. The Spellings commission went one step further in its recommendations, though, and called for accountability measures that allow comparisons of student performance. This recommendation, naturally, was interpreted by many groups in higher education, including the American Council on Education, as a mandate for standardized testing (Basken, 2007). Standardized testing and accountability templates have always been resisted by American colleges and universities because they do not account for the plurality of institutional missions and appear to shift the purpose of assessment from self-improvement to reporting.

Standardized accountability requirements, besides ignoring the complexity of the education that takes place in colleges and universities, could also have an impact on the very process of higher education. Recently, the efforts of U.S. policy makers regarding accountability in higher education have been negatively compared to the No Child Left Behind Act, which, in many educators' opinions, led to the dismal consequence of "teaching to the test" (Cohen, 2009). If the imposition of standardized testing in higher education led to the same results, the impact on higher learning would be dire. Long before the threat of standardized testing in colleges and universities became an issue, Banta (1996) claimed that the accountability requirements themselves "seem to chafe at the very soul of the academic enterprise (p. 57)." The source of what Kuh (2007) referred to as "higher education's aversion to transparency and accountability

(p. 32)" may, in fact, be the concern that the need to report outcomes might undermine the primary purpose of assessment – that of improving student learning.

Assessment for Continuous Improvement

According to Suskie (2004), the primary purpose of assessment in higher education is to help faculty improve their teaching. Banta et al (1996) urged academic faculty and administration to "measure what matters" and emphasized, "Assessment is not an end in itself but a vehicle for educational improvement" (p. 3). Accrediting agencies look for evidence among their candidate schools that the institutions are using their outcomes results to improve student learning and the phrase "closing the assessment loop" (i.e., using the results of data to inform change) has become commonplace in educational circuits.

To effectively use assessment to drive improvements, though, colleges and universities cannot be afraid of discovering problems through their assessment tools. In fact, good assessment should actively seek "bad news" so that the institution can continuously improve. Clearly, an assessment program that only reveals what is already working well within the institution is not very useful toward this end. Colleges and universities have been encouraged to design and implement good assessment plans that enable them to use data to make changes that improve student learning outcomes, and most have risen to this challenge.

However, colleges and universities that have accepted the role of assessment in driving institutional and curricular improvement may be less likely to seek bad news if they are compelled to publicly reveal the full results of their assessments. Good assessment may look for problems that need to be corrected, but is the information gathered what the college would like to use in its promotional literature? Ewell (2009) concluded

Accountability requires the entity held accountable to demonstrate, with evidence, conformity with an established standard of process or outcome. The associated incentive for that entity is to look as good as possible, regardless of underlying performance. Improvement, in turn, entails an opposite set of incentives. Deficiencies in performance must be faithfully detected and reported so that they can be acted upon. Indeed, discovering deficiencies is one of the major objectives of assessment for improvement. (p. 7)

Few college administrators would be happy posting less-than-complimentary data on their websites and, if compelled to be completely transparent with all of their assessments, may choose to gather only information that is self-promoting. It is possible that the cry for full accountability might undermine the culture of data-driven self-improvement that the proponents of outcomes assessment in higher education intended.

Assessment for Accountability

Of course, an additional purpose of assessment is to provide the public with information they need to make informed choices. The pressures to report are not new to higher education. When the federal government began awarding financial aid through the Higher Education Action in the mid-1960s, it also began requiring colleges and universities receiving such aid to report information about their activities to the Department of Education (Bennett, 2008). These initial reports grew into the current IPED (Integrated Postsecondary Education) system. The IPEDS data were never intended to be used to help students decide among institutions, but the free information within them contributed to the rise of highly profitable college guidebooks that do provide college rankings. Since 1983, the controversial U.S News and World Report college ranking has been using some of the IPEDS data to provide comparable information about institutions and other college guides, such as the Fiske Guide to College and the Princeton *Review*, are used extensively by prospective college students and their families, despite the fact that they provide no data on student learning, performance, or satisfaction (Scanlon, 2005). Few higher education administrators claim that these commercial rankings are valid means of comparisons, but the popularity of these college guides reveals the interest the public has in this type of information. Since this demand for information exists, if colleges and universities do not believe in the merit of commercial rankings they have little choice but to provide it themselves. This responsibility provides an incentive for institutions of higher education to provide the public clear information about their own performance and outcomes.

Although the Spellings Report implied a lack of transparency in higher education, many colleges and universities are offended by the criticism that they are failing to disclose data to the public. In addition to the IPEDS, many colleges cooperate with the 27-page 1995 Common Data Set sponsored by the publishers of commercial guides and rankings. Further, over 650 colleges and universities voluntarily report data using templates distributed by National Association of College and Universities (NAICU) or the University and College Accountability Network (U-CAN). In addition, about half of the 270 members of the National Association of State Universities and Land Grant Colleges participate in the Voluntary System of Accountability (VSA) (Bennett, 2008, p. 39).

Despite these efforts of many colleges and universities to prove user-friendly public information, further pressure continues to mount from accrediting agencies for clearer disclosure of student learning outcomes. The initial source of this pressure comes from members of Congress, who are urging all accreditors to fully address issues of public information (Eaton, 2005). In response, the Council for Higher Education Accreditation (CHEA) charged accrediting agencies in 2001 with establishing policies and processes that clearly hold accredited programs accountable for disclosure of student learning outcomes (CHEA, 2001). However, to date, the choice of what to reveal publicly has remained with the institution. Colleges and universities – and their accreditors—have argued that institutions with widely differing missions cannot and

should not be measured according to an outside, arbitrary yardstick and CHEA still believes that "it is imperative to avoid orthodoxy" (Ewell, 2001, p. 2). Instead, accreditors insist that each institution should hold itself accountable for achieving its own mission-driven outcomes, and provide information relevant to this to the public. As Ewell (2009) wrote:

After a few rough bouts with standardized testing, state leaders were persuaded that assessment approaches allowing institutions to set their own goals for student learning and to develop institution-specific (therefore non-comparable) methods for gathering evidence of their achievement could both aid improvement and should be sufficient to discharge accountability – so long as institutions acted in good faith to collect the evidence and actually use it. (p. 6)

The voluntary nature of outcomes reporting has preserved the independence of colleges and universities, but has not yielded information that can easily be compared by consumers of higher education. In fact, colleges and universities, predictably, have tended to disclose only those outcomes most favorable to them (Bennett, 2008). Because of this, there has been further outcry for standardized reporting. Kuh (2007), Bennett (2008), and Eaton (2005) have all called out for the use of standardized templates or profiles to enable the public to make the desired comparisons among institutions and experiments such as the *Voluntary System of Accountability*, the *University College Accountability Network*, the *College Consumer Profile*, and *Transparency by Design* have escalated the collection and dissemination of common data (Kuh and Ikenberry, 2009). Of course, other researchers have staunchly protested the use of common reporting standards (Banta, 1996; Shulman, 2007), and the choice of what to measure and report still largely remains with the institutions.

The goal of transparency and accountability is to enable stakeholders to obtain clear and relevant information about college and university performance. McPherson and Shellenburger (2006) warned, however, about the misuse of assessment data. They urged that "accountability data be used only to compare specific universities with their own past performances and with the performance of comparable universities" (p. 3). To compare vastly different institutions would do far more harm than good, and potentially punish less-elite colleges and universities.

Assessment and the Fear of Punishment

In 1996, Banta claimed that "the accountability train is leaving the station; we can either jump aboard and attempt to steer it, or stand on the tracks and be run over by it" (p. 57). Today, U.S. higher education generally has moved beyond unproductive dualistic debates over whether assessment should focus on accountability or improvement and most faculty and academic administrators have finally, if reluctantly, come to accept that dealing with both is a political and economic inevitability. Nonetheless, most educators think assessment should be first and foremost about improving student learning and secondarily about determining accountability for the quality of learning produced. In short: Though accountability matters, learning still matters most (Kuh, 2007).

The ideal solution, obviously, is for higher education institutions to develop separate internal and external assessment processes - one for improvement and the other for documentation of results to external stakeholders. The stakes are high, and it is therefore likely that progress in higher education assessment is moving in this direction (Shulman, 2007). Moreover, the competing purposes of assessment tend to generate different styles of assessment. To assess for improvement, faculty generally gather evidence of student learning through specially designed exams, portfolios, capstone projects, and other demonstrations built into the curriculum. Multiple instruments are used and the results may be both quantitative and qualitative. Since the objective is improvement, data are generally analyzed over time as well as across different groups of students. In contrast, to assess for accountability, institutions generally rely upon standardized assessments yielding only quantitative evidence. The comparisons are rarely done over time, and most typically are conducted against a fixed standard (Ewell, 2009, p. 8). The fundamental goals of each type of assessment process is different: Assessing for improvement uses information internally to advance *future* learning outcomes while assessment for information uses data to prove the quality of *current* learning outcomes to outside stakeholders.

Accrediting agencies are making it more and more difficult to maintain the distinction between the two types of assessments, though. Both regional and the specialized accrediting agencies, including the International Assembly for Collegiate Business Education (the accreditors associated with this study) require public disclosure of how their candidate schools "close the loop" and use the results of outcomes to enhance student learning. Specialized accreditors such as the IACBE tend to be far more specific than the regional's in articulating desired learning outcomes and mandating evidence of their achievement (Ewell, 2001). For its accreditation of college business programs, for example, IACBE requires the entire business unit outcomes assessment plan- and its results-be posted on the institution's website. (It is important to note that the IACBE is in the process of seeking CHEA recognition, and the stringency with which they enforce transparency has been recommended by their CHEA liaison.) The requirement for full disclosure is a difficult one -- and the subject of this study. Fyshman (2005) summarized the dilemma: "Schools willingly lay themselves open for ... criticism, sometimes costly recommendations for improvement, and more oversight in the future... But they are not prepared for public disclosure that could threaten their survival" (p. 45). Public accountability, of course, might potentially be accompanied by punishment. Once an institution discloses its results, what is to be done with them? First, there are the potential legislative consequences: Derthick and Dunn (2009) traced the source of college and university fears of accountability to the cascade of sanctions subjected to K-12 schools not living up to the standards set by No Child Left Behind. Second, Kuh (2007) and Fryshman (2005) warned of unacceptable uses of information by consumers of education and focused on the harm the release of information could do some institutions. Assessments designed to generate self-improvements rarely lend themselves to flattering comparisons, but once data is public how is its use constrained? Even if sanctions are not placed on the college or university by the government, there is obviously nothing to prevent a potential applicant from choosing one institution over another on the basis of a few insignificant numbers. What college or university would willingly provide data showing areas that need improvement – even if it were these very areas where assessment results would glean the most meaningful improvements? The best solution, for the institution, is to tightly control what is measured so that any less-than-ideal data are not available and do not need to be disclosed. The clever institution will begin to stop assessing for improvement and focus solely on assessing for accountability and self-promotion. The purpose of assessment will move away from a focus on evidence-based continuous improvement to a focus on compliance.

THE STUDY

Permission was granted by the International Assembly of Collegiate Business Education (IACBE) to conduct this study using their list of primary college contacts. This list is comprised of 164 U.S. institutions that are current members of IACBE. The primary contacts who responded were predominantly deans or program directors within their college business units. Of the member colleges participating in this research, 87% were already accredited by IACBE; the balance were candidates for accreditation. A total of 74 schools returned surveys, representing a 45% response rate.

The survey was comprised of 20 questions regarding current assessment practices and attitudes toward assessment. A 5-point Likert scale was used, with a 1 representing "strongly disagree" and a 5 representing "strongly agree." The survey was administered electronically using SurveyShare, and the responses were completely anonymous; see Table 1 for results. The use of IACBE institutions for this study was strategic. This accrediting agency is in the process of seeking CHEA recognition, and its recognition efforts have compelled IACBE to

tighten its transparency requirements.

The current IACBE principle regarding external accountability reads:

Excellence in business education requires institutions and their academic business units to be accountable to the public for the quality of their degree programs. Therefore, the academic business unit must have processes for consistent, reliable public disclosure of information pertaining to student learning outcomes in its business programs.

This principle came into effect in 2007 following a recommendation from CHEA. IACBE was informed, however, that addition of this principle was not enough to comply with CHEA's external accountability requirements. The simple inclusion of a new accreditation principle would only guarantee the compliance of new schools seeking IACBE accreditation; previously accredited institutions would not need to alter their practices until they came up for reaccreditation. Therefore, CHEA found this change insufficient. To conform fully with CHEA

requirements, in September 2009 IACBE leadership sent out a series of notices to all IACBE schools – accredited and candidate – informing them of the need to immediately post their learning outcomes on their institutions' websites. Since all accredited institutions must report learning outcomes annually to IACBE, it was recommended that this component of their annual report be posted to satisfy their external accountability requirement.

Table 1			
Descriptive Statistics			
Survey Question			S.D.
At my institution, assessment is an integral part of daily practice.			1.120
In the business unit at my institution, assessment is an integral part of daily practice.	74	4.11	0.945
In my business unit, a considerable amount of time is dedicated to assessment.	74	4.14	0.881
In my business unit, there is a shared commitment to assessment.	74	3.88	1.072
Leadership within my business unit continually communicates the purpose of assessment.	74	4.19	1.002
In my business unit, assessment results discussed regularly.	74	3.89	0.915
In my business unit, processes are in place to utilize the assessment results as part of a continuous improvement program.			0.965
In my business unit, assessments are developed to meet the needs of our program accreditation	74	4.20	0.993
Based on the results of the assessment, changes within my business unit occur.			0.783
Many members of the business faculty do not see the value of assessment.			1.248
Many members of my college administration do not see the value of assessment.			1.201
Assessment is valued as a means of continuous improvement in my business unit.			1.004
Because of the need to report outcomes to the public, my business unit often avoids uncovering "bad news" when assessing.		2.24	1.108
In my business unit, the driving force of assessment is self-improvement.			1.089
In my business unit, the driving force of assessment is accountability.	74	3.30	0.947
Business unit assessment results are made available to the general public.			1.227
For reporting purposes, my business unit would like to use a standardized assessment template that would require all colleges to report comparable information.		3.01	1.211
In my business unit, faculty and administration are concerned that reporting full assessment results publicly might negatively impact student applications.			1.169
In my business unit, faculty and administration believe that reporting full assessment results publicly might positively impact student applications.			1.012
My business unit would continue assessment activities even if they were not required for accreditation (regional or specialized)			0.987

THE RESULTS

Assessment for Continuous Improvement

The schools responding share a commitment to assessment, with 89% agreeing or strongly agreeing that they spend a considerable amount of time on assessment in their business

units. The survey revealed a disconnect between the perceived dedication of the business units and that of their total institutions, though: while 85% of respondents stated that assessment was an integral part of their daily work within their business unit, only 74% thought believed this was true for their institutions as a whole. Regardless of the level of institutional support, 89% of the respondents claimed to be using the results of their assessments to drive changes within their business units and 82% saw assessment as a means of continuous improvement.

What is the driving force behind the assessment efforts of academic business units? 68% of respondents claimed that the primary purpose of assessment is self-improvement; 50% believed the driving force is (also) accountability. IACBE membership was also cited as an important factor in the assessment activities of the respondents: 85% developed their assessment plans to meet IACBE requirements. IACBE demands may have driven the development of the business units' assessment plans, but, once they were established, it appears that participants recognized their value. 78% of survey respondents claimed that they would continue their assessment activities even if they were no longer required by any accrediting agencies. At least within IACBE member business programs, it appears that the commitment to outcomes assessment as a means of continual improvement is well entrenched.

Assessment for Accountability

The surveys showed that perceptions were mixed regarding the importance of assessment for accountability. Although 50% of the respondent schools acknowledged that accountability was a driving force of assessment, only 36% claimed to be making the business unit assessment results available to the general public. Despite the extensive outreach efforts by the IACBE, a large majority of respondents admittedly were not in compliance with the accrediting agency's relatively new accountability principle.

Assessment and the Fear of Punishment

Only 15% of the business units participating in the study admitted to avoiding bad news when assessing. This may be, at least in part, a result of the fact that many of the IACBE member schools are not yet in compliance with the tighter reporting requirements, so they are still simply assessing for self-improvement. To test this theory, additional analysis was conducted by segregating the schools in compliance with reporting requirements and examining their responses to questions regarding fears of reprisals. Still, no significant concerns about the conflict between assessing for self-improvement and assessing for accountability were uncovered.

LIMITATIONS AND FURTHER RESEARCH

One major limitation of this study was its timing. Only 36% of the responding schools were already in compliance with the IACBE reporting requirement at the time of the survey, but all will need to begin publishing their assessment outcomes within the next year. A repeat survey, administered after one year, may uncover some significant attitudinal changes when the business units become more aware of exactly what needs to be reported publicly. In addition, this study only examined IACBE schools. IACBE, since its inception, has focused on outcomes assessment, so it is probable that the colleges and universities that seek accreditation from them share their commitment to data-informed continuous improvement. Expanded research into non-IACBE schools may find vastly different levels of assessment commitment and should be conducted.

An additional limitation may have been the use of web-based survey. This may have possibly introduced bias into the study since only those individuals comfortable with this type of survey would have responded.

Finally, it cannot be overlooked that the researchers' relationships with the IACBE (as Commissioner and Regional President) may also have had an impact on the results. The IACBE has been proactive in reminding members about CHEA's transparency requirement, so it is possible that, to a degree, only schools already in compliance were willing to participate in this research. Other schools which were not yet complying with this IACBE (and CHEA) principle may have been reluctant to reveal their shortcomings, even anonymously. If the study were replicated at a later date the level of participation, and perhaps the results, might be different. Overall, the study indicated that, at this point, IACBE schools remain strongly committed to assessment and do not see any conflict between assessing for self-improvement and assessing for

accountability.

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WIKIS AND PODCASTS: AN APPLICATION IN UNDERGRADUATE MANAGEMENT EDUCATION

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ABSTRACT

Organizations in the past quarter century have been changed by the integration of desktop computing and communication technologies. The resultant changes have included an entire generation (Digital Natives, Net Generation) raised in the digital world. Web applications such as blogs, wikis, and podcasts have enabled individuals to produce and distribute digital content worldwide. Business educators are faced with the challenges of developing the pedagogical tools for a generation steeped in customization and sharing. This paper discusses the inclusion of wikis and podcasts as part of the instructional design for a five-week summer undergraduate management course.

INTRODUCTION

Organizations have been profoundly changed in the past quarter century by rapid innovation in desktop computing and communication technologies. Commercialization of the Internet through the World Wide Web (WWW) has allowed organizations and individuals to create and publish vast amounts of digital information (Friedman, 2006; Richardson, 2009; Tapscott & Williams, 2008). Initially the web applications were designed to search for static pages of information (Tapscott & Williams, 2008). Today, these web applications (i.e., blogs, wikis, podcasts, RSS feeds, social networking) allow for an open, collaborative production of information (Beldarrain, 2006; O'Reilly, 2005; Richardson, 2009; Sendall, Ceccucci, & Pesalk, 2008; Tapscott & Williams, 2008). These web applications, generically called Web 2.0, permit 44% of Internet users to produce and share digital content online (Lenhart, Horrigan, & Fallows, 2004). This openness for sharing is apparent in the popularity of web sites such as Facebook, Flickr, MySpace, YouTube, and Wikipedia (Bisoux, 2009; Madden & Fox, 2006; Sendall et al., 2008; Tapscott & Williams, 2008).

Wikipedia is an example of a wiki with over 75,000 contributors (Wikipedia, 2009). Wikis are web pages that allow multiple users to create and edit web pages (Alexander, 2006; Baldarrain, 2006; Bisoux, 2008, Duffy & Bruns, 2006; Frydenberg, 2008; Parker & Chao, 2007; Richardson, 2009; Tapscott & Williams, 2008). Richardson (2009) reports organizations such as Disney, McDonalds, MIT, and the city of Calgary are using wikis. As wikis become prominent in the business community, business educators will need to consider their value as a pedagogical

tool. For instance, wikis allow students to interact with digital content over time thus providing the educational benefit of creative, critical thinking (Duffy & Bruns, 2006; Richardson, 2009; Safran, Helic, and Gütl, 2007). Educators are using wikis within the classroom as a simple webpage, collaborative analysis, sharing class notes, project management, and course material distribution (Frydenberg, 2008; Parker and Chao, 2007; Richardson, 2009).

Podcasts are digital audio or video files broadcast (i.e., distributed) over the Internet for download to a computer or to a personal player (Beldarrain, 2006; Richardson, 2009; Robinson & Ritzko, 2009; Warlick, 2005). Distribution of podcasts may be through a subscription or stand alone files. Podcast subscriptions use a Real Simple Syndication (RSS) feed to automatically send the digital files to the subscriber (Safran et al., 2007). The files are sent to a RSS aggregator such as iTunes[®] for download to a computer or a MP3 player such as the Apple iPod[®]. For example, Business Week produces weekly podcasts that are available for subscription through iTunes^{®.} As the new podcast becomes available from Business Week the file is automatically transmitted to iTunes[®] for retrieval by the subscriber. Additionally. distributes these podcasts as standalone files on their website Business Week (http://www.businessweek.com/search/podcasting.htm) on a case-by-case basis. Robinson and Ritzko (2006) describe educational podcasts as either instructor produced as needed for class or student produced to demonstrate learning. The challenge for educators is to incorporate podcasts as a supplement to the learning not as a replacement for class attendance (Robinson & Ritzko, 2006).

The proliferation of digital content provides numerous challenges for post-secondary educators. Traditional students (i.e., 18-25 years old) currently entering higher education have only lived in a digital world of computers, Internet, and iPods[®] (Oblinger, 2003; Palfrey & Gasser, 2008; Pleka, 2007; Robinson & Ritzko, 2009; Tapscott, 2009; Tapscott & Williams, 2008). The norms for this generation include multitasking, customization, collaboration, and speed (Oblinger, 2003; Tapscott, 2009; Tapscott & Williams, 2008). Pletka (2007) observed in the K-12 environment this generation "often recoil from isolated, lecture-based, information-dated, responsive-deficient silos of learning comprised of outdated technologies from the mid-20th century" (p. 13). Students today expect a flexible learning environment that takes "place where and when they want it" (Tapscott, 2009, p. 77). The current generation of students is pragmatic and attends college not for intellectual knowledge, but employable skills for the current workforce such as communication skills, desktop computer applications, and Web 2.0 tools (Sendall et al., 2008). Today's corporations expect business educators to incorporate Web 2.0 applications in their teaching (Bisoux, 2009).

This paper describes the application of wikis and podcasts in an undergraduate Principles of Management class at a Northeastern regional comprehensive university during a five-week summer session. The course was designed as a face-to-face class using the Blackboard[®] course management system for the delivery of course materials (i.e., syllabus, handouts, quizzes, and exams). The instructor supplemented the course with a wiki and podcasts to support two

learning objectives - communicate effectively and application of management techniques to solve organizational issues.

APPLICATION

As an initial foray into wikis, the course would be designed as a private site open only to Two wiki platforms, Google Sites[™] and PBWorks[™], were the instructor and students. considered for their ease of use and the free pricing to educators. Google Sites[™] is a part of the Google web applications including Google Reader[™], Google Docs[™], and Blogger[™]. Individuals using the Google web applications must create an account using an email account and password. PBWorks^M, on the other hand, requires only the creator of the wiki site (i.e., instructor) to create an account with an email address and password. During a two-week design period available to the instructor course content (i.e., syllabus, presentations, handouts) was easily loaded to both platforms. Both sites allowed easy design of the course wiki Front Page. The instructor experienced some difficulty in adding a RSS reader to the PBWorks[™] Front Page during the design phase. Since the RSS reader would be important to the lessons about podcasts, the difficulty with adding the reader was a negative for the PBWorks[™] site. One difference between the two platforms focuses on the method used for inviting individuals to share, or collaborate, on the site. Google Sites[™] requires the owner (i.e., instructor) to enter an email address for the individual sharing the site. Google Sites[™] sends an email to those individuals announcing an invitation to join the course site (http://sites.google.com/site/kumgm210). The individual confirms the email and must create, if necessary, a Google account to gain access to the specific site. PBWorks[™] requires the instructor to provide students with the URL of the PBWorks[™] course site (http://mgm210su09.pbworks.com). When the student enters the PBWorks[™] site they request permission to join the site. The instructor receives the email request for confirmation. The PBWorks[™] process allows students to use an existing email account and not create another logon account. With only 14 registered students for the summer course, the method for sharing the site was deemed equivalent for both platforms. After considering the pros and cons of each platform, the instructor chose Google SitesTM for this specific course wiki.

The course wiki was introduced at the beginning of week 2 of the five-week summer session. On the last day of week 1, students were asked to answer two questions.

1. What did you learn this week about the environment in which managers operate?

2. Identify one item that is still unclear to you about the environment in which managers operate.

The instructor compiled the items identified in question 2 and created *The Environment* page of the course wiki (Figure 1). On day 1, week 2, the instructor introduced the concepts of wikis and RSS readers by showing the course wiki site. After a brief discussion, the site was shared with the students. The students were given a few minutes in class to explore the wiki by

finding various course documents (i.e., syllabus, handouts, assignments). Students were asked to compare and contrast the course wiki with the course Blackboard[®] site. The instructor had designed the course wiki to parallel the Blackboard[®] site in all aspects except for the delivery of quizzes and exams. The instructor wanted to retain the automatic grading and feedback feature of the Blackboard[®] system. Through this parallel structure students could maintain a frame of reference (i.e., Blackboard[®]) as they learned about wikis. After a few minutes of exploration, the instructor guided the students to *The Environment* page (Figure 1). This page introduced the concept of how wikis provide an *Edit Page* feature for individuals to add content to the page. After demonstrating how to create a new page and the associated hyperlink to the page, students practiced this activity by adding content to *The Environment* page (Figure 1). The instructor then added content asking students to view a video posted on the PBS website and post their comments on *The Environment* page (Figure 1). Throughout the remaining weeks of the semester the course wiki was used to post student project assignments. These assignments involved a mixture of creating new content for the course wiki pages, adding comments to a wiki page, or uploading attachments.

Figure 1: The Environment wiki page (kumgm210).

	The Environment (Kunginizio)
< > + Chttp:	//sites.google.com/site/kumgm210/the-environment
MSN.com A	Apple: Yahoo! Google Maps: News * Popular * Kutztown University * P8works: Facebook
kumgm210	Search
Navigation	The Environment
Course Documents Class Announcements	This page will be used to explore the issues affecting the environment in which management operates.
The Environment Planning	At the end of week 1 you identified items that needed some clarification concerning the environmental issues. The following list is compliation of those items provided on May 22, 200
Organizing Directing Controlling Peanut Valley Cafe Starbucks Organizing Sitemap	1. Some ethical issues 2. Some ethical issues 2. Something I am unclear about is how to environmentally scan. 3. I'm still not sure what Mintzberg is associated with and need to figure out what he did. 4. Why is it that when a person does the right thing they end up getting punished for it? 5. I am still a little unclear about the definition of skills managers are expected to have and why I understand <u>human skills</u> , but in terms of <u>conceptual</u> and <u>technical</u> , I wouldn't be able to provide specific examples of this. 6. I have a question concerning with business matter is that why should United States is importing more than they are exporting?
Recent site activity Benchmarking of Best Practices artified by chand 383	 <u>Middle managers</u>: We covered them in the small business area, but what type of things do they do in large corporations? How do they implement the large scale ideas of top managers and assign smaller jobs to have the same results? I'm still unclear on the General Administrative Theory wimanagement. Something that I am still a little unsure about is the background information with chapter 2 and the different approaches.
Information Controls edited by chand383 Balanced Scorecard edited by chand383	Environmental scanning is on one level see the trends that may affect the management of your business. The following PBS video is from the December 14, 2006 broadcast of The News Hour with Jim Lehrer. The clip is part of a series by Judy Woodruff, PBS, entitled <u>Generation Next</u> Changes the Face of the Workplace. After reviewing the clip please comment on the video below.
Financial Controls	Subpages (4): Conceptual Skills Human Skills Middle Managers Technical Skills
edited by chand383 Benchmarking of Best Practicor	C Attachments (0)
edited by chand383	Comments (4)
View All Edit sidebar	dbotr176@live.kutztown.edu - May 26, 2009 6:00 AM - Remove http://horizon.unc.edu/courses/papers/enviroscan/
	chand383@live.kutztown.edu - May 26, 2009 6:39 AM - <u>Remove</u> Concerning middle managers, suestion #7

As the semester progressed, the course wiki was used as a course management portal. The *Front Page* (Figure 2) contained a *Recent Announcements* area that showed the 5 most current class announcements. The *Front Page* also contained a RSS reader set to receive CNN News (Figure 3). This element was added to the page to teach the concept of RSS and to reinforce the concept of environmental scanning. For example, each class period started with a

review of the CNN News feed. This allowed students to integrate their previous learning in business courses to discuss current issues affecting managers. Recent edits to a page by the instructor or student was highlighted in the *Recent Activities* area of the left sidebar. Finally, the *Front Page* provides the ability to track page revision history. Through *More Actions* in the upper right hand corner, then choosing *Revision History* (Figure 4), the instructor was able to determine the level of student participation in course wiki. This information formed the basis for a portion of the student's class participation grade.

000	Home (kumgm2	10)	
< > + http:/	/sites.google.com/site/kumgm210/	C Q+ Google	
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Mail Calendar Docume	ants Photos Reader Sites Web more ▼	weyant@kutztown.edu My sites Help Sign out /	
Google sites Home Updated Jun 1, 2009 7:30 AM		🛉 Create page 🥜 Edit page More actions 🗸	
kumgm210		Search Site	
Navigation Home Course Documents	Home		
Class Announcements	<u>j</u>	Recent Announcements	
The Environment Planning Organizing Directing	KUTZTOWN	Carreers For those looking for a job, the following Business Week article offers some strategies, "Gen Y: How to get a job now". Posted Jun 13, 2009 11:13 AM by weyant@kutztown.edu	
Controlling Peanut Valley Cafe Starbucks Organizing Sitemap	MGM 210: Principles of Management	Jack Weich June 14, 2009. Jack Weich, former CEO of General Electric, writes a column for Business Week. In the current issue, Jack writes about leadership in a column tiled "The difference	
Recent site activity	Dr. Lee E. Weyant	Starbucks Organizing, June 2, 2009. Remember the Starbucks Organizing case is due Eriday	
Benchmarking of Best Practices edited by chand383	Associate Professor of Management Kutztown University wevant@kutztown.edu	June 5, 2009 at 11AM. The details are available at the course Blackboard site under Assignments.	
Information Controls		Beanit Valley Cate May 29 2009 As you review my comments (which means I have graded	
Balanced Scorecard edited by chand363	2 2 2	the posting) you should also feel free to add comments about the recommendations of your colleagues. Likewise	
Financial Controls	Course Documents	Posted May 29, 2009 7:33 AM by weyant@kutztown.edu	
Benchmarking of Best Practices	The Environment	Strategic Management Podcast Under the Course Documents, I have uploaded a podcast covering Strategic Management. This is about 20 minutes in length. I would be interested in your comments.	
edited by chand383	Planning	Posted May 27, 2009 6:08 PM by weyant@kutztown.edu	
VIEW AII	Organizing	Showing posts 1 - 5 of 7. View more »	

Figure 2: Front Page – kumgm210

Figure 3: CNN News Feed - kumgm210



		Pages – List (kumgm210)		
◄ ► + http://	//sites.google.com/site/kumgm210/system/app/p	ages/admin/pagelisting	C Q- Google	
ISTE MSN.c	om Apple News+ Popular+ Kutztown Univers	ity PBworks Facebook Twitter		
Mail Calendar Docume	ents Photos Reader Sites Web more V		weyant@kutztown.edu My sites	Help Sign out
Google sites M	lanage kumgm210			
Return to site	ListTree		«Prev 1	-39 of 39 Next>
Site content	Item	Created by	Last updated by	Revisions
Recent site activity	Balanced Scorecard	chand383@live.kutztown.edu (Jun 17, 2009 8:07 PM)	chand383@live.kutztown.edu (Jun 17, 2009 9:26 PM)	3
Pages	Balanced Scorecard	chand383@live.kutztown.edu (Jun 17, 2009 8:04 PM)	chand383@live.kutztown.edu (Jun 17, 2009 8:04 PM)	1
Attachments	Benchmarking of Best Practices	chand383@live.kutztown.edu (Jun 17, 2009 8:08 PM)	chand383@live.kutztown.edu (Jun 17, 2009 9:27 PM)	3
Site settings General Sharing Monetize Web Address	Careers	weyant@kutztown.edu (Jun 13, 2009 11:11 AM)	weyant@kutztown.edu (Jun 13, 2009 11:13 AM)	2
	Class Announcements	weyant@kutztown.edu (May 22, 2009 6:16 PM)	weyant@kutztown.edu (May 22, 2009 6:16 PM)	1
	Conceptual Skills	htizi087@live.kutztown.edu (May 26, 2009 6:21 AM)	htizi087@live.kutztown.edu (May 26, 2009 6:40 AM)	5
	Concurrent Control	dbrow814@live.kutztown.edu (Jun 15, 2009 7:27 AM)	dbrow814@live.kutztown.edu (Jun 15, 2009 7:39 AM)	2
	Controlling	weyant@kutztown.edu (Jun 1, 2009 7:06 AM)	chand383@live.kutztown.edu (Jun 17, 2009 8:57 PM)	6
Site appearance	Course Documents	weyant@kutztown.edu (May 22, 2009 6:30 PM)	david fazzari (May 28, 2009 5:06 AM)	12
Site layout	Customer Departmentalization	dbrow814@live.kutztown.edu (Jun 1, 2009 6:28 AM)	dbrow814@live.kutztown.edu (Jun 1, 2009 6:34 AM)	2
Colors and Fonts	Directing	weyant@kutztown.edu (Jun 1, 2009 7:01 AM)	weyant@kutztown.edu (Jun 13, 2009 11:24 AM)	9
Themes	Feedback Control	dbrow814@live.kutztown.edu (Jun 15, 2009 7:27 AM)	dbrow814@live.kutztown.edu (Jun 15, 2009 7:43 AM)	2
	Feedforward/Concurrent/Feedback Controls	chand383@live.kutztown.edu (Jun 17, 2009 8:03 PM)	chand383@live.kutztown.edu (Jun 17, 2009 8:03 PM)	1
	Feedforward Control	dbrow614@live.kutztown.edu (Jun 15, 2009 7:26 AM)	dbrow814@live.kutztown.edu (Jun 15, 2009 7:34 AM)	2
	Financial Controls	chand383@live.kutztown.edu (Jun 17, 2009 8:04 PM)	chand383@live.kutztown.edu (Jun 17, 2009 9:25 PM)	3
	Functional Departmentalization	dbrow814@live.kutztown.edu (Jun 1, 2009 6:16 AM)	dbrow814@live.kutztown.edu (Jun 1, 2009 6:23 AM)	3
	Geographical Departmentalization	dbrow814@live.kutztown.edu (Jun 1, 2009 6:28 AM)	dbrow814@live.kutztown.edu (Jun 1, 2009 6:31 AM)	2
	Home	weyant@kutztown.edu (May 22, 2009 5:15 PM)	weyant@kutztown.edu (Jun 1, 2009 7:30 AM)	34
	Human Skills	htizi087@live.kutztown.edu (May 26, 2009 6:42 AM)	weyant@kutztown.edu (May 26, 2009 11:31 AM)	5
	Information Controls	chand383@live.kutztown.edu (Jun 17, 2009 8:05 PM)	chand383@live.kutztown.edu (Jun 17, 2009 9:26 PM)	3

Figure 4: Revision History – kumgm210

This course used commercially produced and instructor created podcasts as supplemental material. For example, students were assigned to listen to several podcasts produced by BusinessWeek (http://www.businessweek.com/search/podcasting.htm) in preparation for class discussion. Students were assigned to watch a video podcast (vodcast) about Generation Next produced for *The NewsHour with Jim Lehrer* (http://www.pbs.org/newshour) and to write their comments about the vodcast on the course wiki. The instructor produced six podcasts using Apple's GarageBand[®] software on an Apple MacBook[®]. These lecture supplements ranged in length from 5 to 19 minutes and covered various course topics (i.e, Human Resource Management, Motivation, Leadership). The podcasts resembled radio news broadcast with a music soundtrack before and after the topic script. The file was saved in MP3 format and compressed to reduce the size of the file for uploading. While GarageBand[®] prepares the MP3 file for public distribution through iTunes[®], the instructor chose to distribute the files only through the course Blackboard[®] site and the course wiki.

The course wiki achieved one element of the course design – supplement course content delivery. Another element of the course design centered on the wiki and podcasts as a means to support the communication and application learning objectives. While student produced podcasts were conceptualized in the course design, these were eliminated due to the time constraints of the semester (i.e., 5 weeks). The course wiki continued to play a role in supporting the two learning objectives. Students had several individual and group assignments where they had to apply the principles of management to solve a problem, then post their solution to the course wiki. These assignments were designed similar to Blackboard threaded discussions. For
example, the Motivation exercise was part of a concluding activity on the topic of workplace motivation. This activity incorporated the "communicate effectively" learning objective as shown in the following instructions.

Working individually, or in groups of 2 to 3, review the various motivational theories discussed in chapter 16. Choose a theory and write a paragraph on why you think this theory is advantageous for a manager.

Your response should be posted on the course wiki under Directing by 11AM, Friday, June 12, 2009. This assignment is worth 20 points.

Figure 5 is an example of initial postings by two students and Figure 6 shows a response by a student to several individual postings. (*Note the names of the students have been removed to protect their identity*).

Google sites M	Motivation Assignment Updated Jun 12, 2009 9:16 AM	page More actions -
kumgm210		Search this site
Navigation Home Course Documents Class Announcements The Environment Planning Organizing Directing Controlling Peanut Valley Cafe Starbucks Organizing Sitemap	Directing > Motivation Assignment • If I had to pick a behavioral theory to use as a manger, I would choose the Goal-Setting Theory. The reason I would because the goals that I would set for the employees and organization would be accepted, specific, and challenging. This 'my employees to have a higher performance because they would work harder to get the job completed. This theory also has such as; increasing the acceptance of goals (which will then allow me to keep using goals), shows commitment in difficult and also provides self feedback. When the employee completes such a difficult goal they will feel confident in finishing oth higher internal locus of control which will eventually help themselves as well as the organization. Having goals for the employees and beyond their ability. This theory makes them and beyond their ability and makes them feel good about themselves. They will be coff the goal especially if the This goal will be theirs to meet and they would want the self-efficacy when the goal is met. I think this is a great theory and use it and maybe even combine it with other theories if I was a manager.	vuld do this is will then motivate as many benefits and public goals, her goals and have a loyees will give them employees go up goal is made public. d I would definitely
Recent site activity Benchmarking of Best Practices edited by chand383 Information Controls edited by chand383	As a manager, I would use the reinforcement theory. I chose this theory because I feel it is the best way to get the out of your employees. It does not set goals, but it rewards good behavior to keep an employee motivated. Rewards do no lavish- something as simple as a day off or awarding gold star stickers will be enough to motivate someone. Moreover, rew immediately follow the desired behavior. On the other hand, when negative behavior occurs, it should be acknowledged but Punishment may eliminate undesirable behavior in the short run, but in the long run is more likely to cause dysfunctional be conflicts, absenteeism, and turnover. If I become a manager I would be sure to use the reinforcement theory including usin sticker method technique.	ne behavior you want I even have to be vards should t not punished. Jehavior such as ng a simple gold star

Figure 5: Motivation Exercise Initial Posting

Figure 6: Motivation Exercise Response Posting

-I agree with that the reinforcement theory is the best motivation technique. I know that when I am doing something, and I do a good job, I like to be rewarded. The reward does not need to be something expensive at all. It could be something little to show workers that they are noticed and are doing a good job. Also, the reinforcement theory is a good way to show workers that are not doing a good job that they need to start doing a better job; if they see other workers getting little incentives it should make them work harder.

The application-learning objective was accomplished by using the case - Peanut Valley Café: What to do next ? (Weyant & Steslow, in press, 2008). This case involved the strategic

management issues of a small restaurant and served as a culminating activity for the Planning unit of instruction. This was a group assignment with the following instructions:

Students will organize into groups of 2 or 3 individuals. After reading the Peanut Valley Café case, the groups will develop a recommended plan for the Peanut Valley Café owner. The recommendation will be posted on the class Google site (kumgm210) under the Peanut Valley Café page.

Figures 7 and 8 illustrate how the student's used the wiki to post their recommendations and how they used the comment section of the wiki to provide feedback to their colleagues. (*Note student names have been removed from these figures to protect their identity.*)

Google sites F	Peanut Valley Cafe Cancel
Insert Format Table	Layout
🖍 😭 Normal/serif	
kumgm210	Search this sit
Navigation Home Course Documents Class Announcements The Environment Planning Organizing Directing Controlling Peanut Valley Cafe Starbucks Organizing Starbucks Organizing Stemap Recent site activity Benchmarking of Best Practices edited by chand383 Information Controls Stemation Controls	Peanut Valley Cafe The is an individual recommendation The is an individual recommendation The is an individual recommendation When reviewing the case study for Peanut Valley Café, I found that all of issues facing the two restaurants are pinpointed; the competition is identified, the goals are listed, and staff roles are labeled. I feel the best direction that Sam can take to address as many of his goals with the least amount of investment, would be to put in place an email marketing strategy as well as create a website to reinforce the effectiveness of the plan to increase his market share and make a larger profit. E-mail marketing is a form of direct marketing which uses electronic mail as a means of communicating commercial messages to an audience for the purpose of enhancing the relationship of a merchant with its current or previous customers and to encourage customer loyalty and repeat business, and/or acquiring new customers. Internet technology has changed the way in which companies must do business. With the development of smart phones and like technologies, a company must be able to keep up with the new fast-paced life style of today's society. Thus creating a medium that the customer and organization may use at anytime from anyplace to keep in contact with each other, hopefully allowing the company to gain a competitive advantage over its competition. The most important part of developing a email marketing campaign is creating your contact email list. Sam must focus on getting emails for the following in order to be successful: current customers, current employees, local business emails(banks, hospitals, etc.), department emails for military base/ university, athletic teams, anybody and everybody interested. It is also important to only send emails to those who willine eive address. in order to avoid appearine like internet SPAM messages. This process may take
	Figure 8: Peanut Valley Café Comments
Lee Weyant - May 29), 2009 7:25 AM - <u>Remove</u>
. What specif	ic training needs do you recommend?
	- May 29, 2009 7:41 AM - <u>Remove</u>
http://restaurantinno this site has a lot of further explain if ne	ovation.com/News-Tips-and-Tricks-For-Restaurant-Internet-Marketing.php the information i was trying to explain, email marketing ideas are shown on the bottom of this page, i can gather some more sites to eded

Figure 7: Peanut Valley Cafe

- May 29, 2009 7:47 AM - <u>Remove</u>

http://www.patronpath.com/Email-Marketing_da7c7d4ba99d7c58.html

this site is another example of a firm that uses this sort of technique, however i feel that outsourcing marketing for a small resturant chain isn't required and could be handled within

- May 29, 2009 8:20 AM - <u>Remove</u> I really like Jacquis idea of giving discounts to students and senior citizens. The cafe would attract a lot more students that way!

- May 29, 2009 8:43 AM - Remove

Fast food training, making food in a line set up to save time, something similar to mcdonalds and burger king, maybe the cafe could have special nights like a open mic night

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From the instructor's perspective, the wiki and podcasts meet the instructional design. The question is whether the students viewed these elements as useful to their learning. Using a qualitative approach, students were asked at the end of the semester to assess the course wiki and podcasts. The students felt the course wiki was user friendly and helped to organize their learning. They recommended more time be devoted to discussing the rules for editing pages. For example, some students did not understand that during the *Edit Page* process the page is locked to prevent simultaneous editing but the lock can be disrupted through a *Break Link* request. The students recommended the course wiki as a standard item to future course design. The students further recommend that course wiki remain closed only to the students enrolled in class or to invited individuals.

Student assessment was mixed concerning the use of the podcasts. One student stated that when listening to the podcast if they felt comfortable with the topic they either stopped the podcast or fast-forwarded to another section. On the other hand another student did not like the podcasts. This student thought they were boring because "I'm a visual learner". Similarly, the vodcasts and other YouTubeTM clips used during the course received a mixed reaction from the students.

SUMMARY AND CONCLUSION

As the Internet matured an entire generation has emerged in the shadow of this digital world. This generation, today's traditional college students, was "born digital" and perceives, interacts, and learns differently than the analog generations. Today's Internet has allowed individuals, with great ease, to become producers and distributors of digital content. These social and technological changes are a challenge to collegiate business educators. In order to stay competitive, as educators, we need to develop pedagogical approaches that address the learning style of a generation steeped in customization and sharing. Wikis and podcasts provide an additional element of educational interaction whether in a face-to-face or online environment.

Our initial experience with using wikis and podcasts in course design leads us to conclude with these suggestions for faculty contemplating using these techniques:

Start small. We suggest instructors find one or two activities within their course where student collaboration is a major element of the learning experience. Then pilot test that concept with a course wiki.

Support. Students entering the class may have a wide disparity of computer skills. We assumed a certain level of computer skills based upon a common computer course that is completed prior to this Principles of Management course. What we discovered was the students had a baseline of skills in word processing, spreadsheets, databases, and presentation but had widely different skills on the Internet beyond social media tools such as Facebook and MySpace. We recommend a common activity to create a baseline of knowledge for the class. For example,

instructors should create a "Student Intro" page on the course wiki and have students post a brief biography, or profile, on this page during first week of class.

"We'll learn together". We found by confronting the fact that we did not have all the answers on the specific technology students saw us a partner in their learning. This student-faculty learning interaction made the discussion of managing change a real experience.

A quarter century ago business educators immersed themselves in teaching the latest computer application skills (i.e., word processing, spreadsheets, presentations) and infusing those skills within assignments. However, many of the basic suite of "office" software simply digitized and made more efficient what we could achieve in a previous analog world. We now face a more complicated challenge to not only learn the mechanics of Web 2.0 applications; but also, develope the pedagogical tools for a collaborative, student-centered learning.

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AUTHENTIC LEADERSHIP AND BUDGET-BUILDING: SUPERINTENDENTS REVEAL ORIGINS, STRATEGIES, AND CONNECTIONS

James J. Bird, University of North Carolina at Charlotte Chuang Wang, University of North Carolina at Charlotte

ABSTRACT

Superintendent leadership style and budget-building practices were studied in six southern states. Analyses reveal that leadership authenticity is positively and significantly correlated with budget-building transparency and information management. Fast-rising career patterns and superintendent self-described leadership styles were not found to be correlated with their budget-building practices. Several demographic factors were examined but only superintendent educational background, size of school district, and school district socioeconomic status were associated with budget-building transparency. Finally, superintendents in fiscally dependent school districts. Implications of these findings and recommendations for future inquiry are discussed.

INTRODUCTION

The intersection of leadership style and organizational practices reveals a great deal about how school superintendents attempt to influence their district's progress. The purpose of this paper is to explore the relationships among superintendent leadership authenticity and the transparency, information processing, and staffing dynamics involved in budget-building processes. We surveyed public school district superintendents in six southeastern states concerning their leadership styles and the budget-building processes they employ in their administrations. While the literature surrounding leadership is voluminous, research about how school leaders create and implement processes leading to annual budget adoption is much more limited. Understanding the antecedents and consequences of these basic components of school operations is important because it will inform university preparation programs, practicing superintendents, school district professional development programs, and school board executive selection and evaluation practices.

Leadership

Practicing school executives can turn to a vast amount of both scholarly and popular literature about the study of leadership. Private sector business literature in general and more specifically, positive organizational scholarship (Cameron, Dutton, & Quinn, 2003a, b; Spreitzer,

2006; Verbos, Gerard, Forshey, Harding, & Miller, 2007), point to the importance of the leader's talent in an organization's success (Kahn, 1990; Marzano, Waters, & McNulty, 2005; Ostrem & Wheeler, 2006). While leadership style literature ranges far and wide, recently the concept of authentic leadership has received attention (Avolio, 2007; Avolio & Gardner, 2005; Avolio, Gardner, Walumbwa, Luthans, & May, 2004; Begley, 2001; Blausten, 2009; Champy, 2009; Endrissat, Muller, & Kaudela-Baum, 2007; Gardner & Schermerhorn, 2004; George, Sims, McLean, & Mayer, 2007; Goffe & Jones, 2005; Goffe & Jones, 2007; Ilies, Morgeson, & Nahrgang, 2005; Jensen & Luthans, 2006; Kellett, Humphrey, & Sleeth, 2006; Luthans & Avolio, 2003; Marshall & Heffes, 2004; Masarech, 2001; May, Chan, Hodges, & Avolio, 2003; Michie & Gooty, 2005; Palmer & Fleig-Palmer, 2006; Price, 2003; Shamir & Eilam, 2005; Sparrowe, 2005; Tate, 2008; Toor & Ofori, 2008; Yammarino, Dionne, Schriesheim, & Dansereau, 2008). Salient characteristics of authentic leaders include self-awareness, confidence, resiliency, and optimism. Authentic leaders are future oriented and have a proclivity for action. They establish long-term, meaningful, and transparent relationships with followers. Authentic leaders have a passion for their purpose and practice their moral/ethical values consistently. They have the ability to empathize with different types of people and situations and they build on the strengths of followers. Walumbwa, Avolio, Gardner, Wernsing, & Peterson (2008) operationalized authentic leadership for study by developing a questionnaire containing four fundamental elements: self-awareness, relational transparency, balanced processing, and moral integrity.

Authentic leadership studies in education are appearing with some regularity (Begley, 2001; Begley, 2006; Branson, 2007; Walker & Shuangye, 2007). Nascent school setting studies by Bird, Chuang, Watson, & Murray, 2009b nested these business concepts within the principal-teacher-student-school relationships and found that school principals who are perceived as being authentic by their teaching staffs are more likely to have faculties that are more trusting and engaged.

Missing from the leadership literature are scholarly inquiries concerning the authenticity of school district superintendents. Does this leadership style exist at the superintendent executive level? Can it be measured? If present, what effect does it have on the practices employed and what effect does it have on the subordinates who carry out those practices?

Budget-building Practices

As chronicled by Bird, Chuang, & Murray 2009a, if a practicing superintendent were to venture into the literature of school finance he or she would find traditional treatments of legislative revenue/expenditure structures (e.g., Brimley and Garfield 2008; Cubberley 1906; King, Swanson, and Sweetland 2003); evolving court cases (King, Swanson, and Sweetland 2003); and, treatises concerning the parameters of adequacy, equity, and the pursuit of excellence (King, Swanson, and Sweetland 2003; Reyes and Rodriguez 2004). The process functions of budgeting, planning, and accounting would receive attention (Brimley and Garfield 2008; Fullerton 2004; Goertz and Hess 1998; Gonzales and Bogotch 1999; Miles and Roza 2006; Reyes and Rodriguez 2004; Slosson 2000; Stiefel, Schwartz, Portas, and Kim 2003). The extant

literature also contains many studies of school effectiveness which purport to measure student performance gains (King, Swanson, and Sweetwater 2003).

While this body of knowledge provides some basic fundamental guidelines for the practicing superintendent, it does not inform the school executive on structural or functional aspects of how a school district should be organized to ensure student success or how to interface with the political context of the community with its scarce resources, competing interests, and high expectations. Initial attempts to study superintendent practices reveal connections between the transparency of budget-building processes and information management procedures. Surveyed superintendents were eclectic in their practices and depended more on their on-the-job training and experience than their university professional preparation programs (Bird, et al., 2009a; Bird, Chuang, & Murray, 2010).

Missing from the budget-building literature are scholarly inquiries concerning the relationships among school district superintendents' leadership style and the budget-building practices they use in their organizations. Are some leadership styles linked to certain operational practices? Are patterns discernable or is the craft eclectic in nature? Are there demographic factors involved and what might they be in terms of influencing what superintendents do and how they interact with their subordinates and community? The linking of process (leadership) and content (school finance) serves as a basic structure to this proposed study.

The review of literature reveals some interesting parallels between leadership style behavioral characteristics and effective operational practices. Leaders who are steadfast, unbiased, goal-focused, and develop deep and open relationships with their subordinates, seem particularly well matched for complex organizational operations that require vision, data driven decision-making, honesty, and teamwork. We, therefore, chose variables that reflect this parallelism between leadership style and operational practice. Our conceptual framework posits authentic leadership variables (self-awareness, balanced processing, moral integrity, and relational transparency) with operational practice variables (budget-building transparency, information processing) and the control variables (staff cohesiveness, and district demographics). We expect to find a positive correlation between superintendent authenticity levels and budgetbuilding levels of transparency, and information processing. If that is the case, then we can add to the understanding of antecedents and consequences surrounding the complex issues challenging organizations. Such understanding can inform and add value to university preparation programs, professional development efforts, practicing superintendents, and governing board selection and evaluation procedures.

Research Questions

Based upon the review of related literature outlined above, we formulated the following research questions:

1. Is there a significant positive relationship between school district superintendent leadership authenticity and the transparency of their district's budget-building practices?

- 2. Is there a significant positive relationship between school district superintendent leadership authenticity and the information processing practices of their budget-building processes?
- 3. Is there a significant positive relationship between school district superintendent leadership authenticity and the fast-rising career pattern of superintendents?
- 4. Is there a significant difference between superintendents' self-described leadership styles and their budget-building practices?
- 5. Is there a significant positive relationship between school district superintendent leadership authenticity and other demographic measures employed in this study?
- 6. Is there a significant difference between superintendents in fiscally dependent school districts and their counterparts in fiscally independent school districts with respect to authenticity, transparency, and information processing?

METHODS

Participants

We chose six southern states because of geographical closeness and a mix of fiscally dependent and independent school districts. After removing three participants due to missing data on at least three items of the constructs measured, we had 224 superintendents in six southeastern states: Alabama (n = 22), Arkansas (n = 59), Georgia (n = 56), South Carolina (n = 23), Tennessee (n = 31), and Virginia (n = 33). Among them, 160 (71%) were male and 64 (29%) were female. The participants were predominantly Caucasian (92%) with 16 (7%) African American and three people (1%) identified with none of the major ethnic groups in the United States. As for their education background, 128 (57%) held doctorate degrees, 50 (22%) held specialist degrees, and 46 (21%) held master's degrees.

Procedures

All superintendents in six southeastern states were sent electronic message alerts inviting them to participate in a study concerning their leadership styles and budget-building practices. A few days later, the actual questionnaire was sent to them electronically. A one-time follow-up opportunity to participate was sent within a week to 10 days later. Response rates varied across the six states from a low of 17% to a high of 31% with an overall return of 227 superintendents from 988 districts, or, 23%. The superintendents participated anonymously and without any monetary incentive. Each was promised an executive summary of the study and a full manuscript if so desired. All participants completed the survey on-line. Their responses were tabulated into SPSS (version 16) for statistical analyses. The relationships among transparency, information management strategies, and cohesiveness of staff were examined with Pearson correlation coefficients. One-way multivariate analysis of variance (MANOVA) was employed to examine possible differences between fast-rising superintendents and non fast-rising superintendents on the outcome measures. Median ages of the first principalship and first

superintendency (32 and 47.50, respectively) were used as cut-off criteria to separate participants into fast-rising superintendents and non-fast-rising superintendents. One-way MANOVA was also employed to examine possible differences on the outcome measures between superintendents' self-described leadership styles. A 2 X 3 MANOVA was also used to examine differences on the authenticity, transparency, and information processing practices in the budget building processes for superintendents' gender (male and female) and highest educational degrees earned (doctorate, specialist, and masters). A 3 X 3 X 4 MANOVA was used to examine differences on the authenticity, transparency, and information processing practices among districts classified by size (small, medium, large), socioeconomic level (poor, middle, and rich), and type (rural, suburban, urban, and small town). School district socioeconomic level was measured by the percentage of students eligible for free- or reduced-price lunch program. Finally, a 3 X 3 MANOVA was used to examine differences on the authenticity, transparency, and information processing practices among districts classified by student academic achievement (below state average, at state average, and above state average) and per pupil expenditure (below state average, at state average, and above state average). Instrumentation

Participants responded to an 87-question survey (see Appendix). The survey combined questions about authentic leadership (Items 4-19), respondent demographics (Items 1-2), respondent budget-building practices (Items 48-83), respondent self-described leadership style (Item 20), respondent school district characteristics (Items 21-23, 46-47), respondent career patterns (Items 3, 24-41), staff cohesiveness (Items 42-45), and the source of respondent budget-building practices (Items 84-87).

Authentic Leadership Questionnaire. Walumbwa, Avolio, Gardner, Wernsing, & Peterson (2008) developed a 16-item questionnaire to measure authentic leadership style. There are four subscales designed to reveal the components of authentic leadership: (1) self-awareness refers to the extent to which leaders are aware of their strengths and limitations and how others perceive them; (2) relational transparency refers to the extent to which leaders reinforce a level of openness with others; (3) internalized moral reasoning refers to the extent to which leaders set high standards for moral and ethical conduct; and, (4) balanced processing refers to the extent to which leaders set of others solicit sufficient opinions and viewpoints of others prior to making important decisions. There are two versions of this questionnaire: one for the leader to self-report and one for raters to assess their leaders. In this study we used the leader self-report form. The internal reliability for each sub-scale is as follows: self-awareness, .73; relational transparency, .77; internalized moral perspective, .73; and, balanced processing, .70 (Walumbwa et al., 2008). Participants were asked to rate the frequency of each statement that fits the leadership style using a 5-point scale ranging from 1 (not at all) to 5 (frequently, if not always).

Budget-building Practices Questionnaire. Previous research (Bird, et al., 2009a; Bird, et al., 2010) utilized a set of questions which was designed to measure the constructs raised in this study: transparency of the budget building process (Items 48, 50-56, 63-67, 72, 74-76, 78-79, 81); information management strategy (Items 49, 57-62, 68-69, 73, 77, 80); cohesiveness of staff (Items 42-45); career development path (Items 29-38); administration experience (Items 39-41); student performance in comparison to the state average (Item 46); per pupil expenditure (Item 47); source of practices (Items 84-87); as well as, to collect participants' demographic

information and educational background (Items 1-11). For participants' career development path (Items 29-38), participants were asked to report the number of years they worked at each position (teacher, principal, superintendent) and at each school level (elementary, middle, and high). Item 38 asked the participants to identify one of the career paths (teacher – department head – assistant principal – principal – central staff – superintendent; teacher – administrator – superintendent; private sector – education; other). For administration experience (Items 39-41), participants were asked to report their age (at their first administrative position, first principalship, and first superintendency). For cohesiveness (Items 42-45), participants were asked to report the number of years they worked with current principals and business managers under their current superintendency. For both student performance (Item 46) and expenditure (Item 47), participants were asked to rate at three levels (above, at, or below state average). The rest of items (Items 48-87) were statements of which participants were asked to indicate their degree of agreement (1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, and 5 = strongly agree). Because of the wording of the questions and the choices available for answers, Items 48, 50, and 72 were reverse-scored.

The reliabilities of the three key constructs measured were satisfactory: .80 for leadership authenticity, .77 for transparency of budget building process and .71 for information processing practices. The concept of reliability for the construct of cohesiveness does not apply here because each question asked the number of years the superintendent worked with staffs of different levels. The answers to these questions are not expected to be consistent.

RESULTS

Descriptive statistics of superintendents' authenticity measures; their districts' budgetbuilding transparency and information processing practices; their demographic and educational background information; and, their career path information were presented in Table 1. The Pearson correlation coefficients between school district superintendent leadership authenticity and the transparency of their district's budget-building practices was statistically significantly different from zero, r = .32, p < .001. Similarly, a statistically significant positive correlation was noticed between school district superintendent leadership authenticity and the information processing practices of their budget-building practices, r = .24, p < .001. The transparency of their district's budget-building practices, r = .66, p < .001.

There was no significant differences between fast-rising and non fast-rising superintendents with respect to the authenticity, transparency, or information processing practices, F(3, 220) = 0.64, p = .59, partial $\eta^2 = .01$. Specifically, fast-rising superintendents were not found to be statistically significantly different from non fast-rising superintendents with respect to leadership authenticity, t(222) = -0.35, p = .72. These two groups of superintendents were not statistically significantly different from each other on the transparency, t(222) = -1.05, p = .30, or the information processing practices, t(222) = -1.13, p = .26.

With the use of Wilks' Lambda criterion, the combined dependent variables (transparency and the information processing practices) were not significantly affected by the superintendents' self-described leadership styles, F(6, 416) = 1.51, p = .17, partial $\eta^2 = .02$.

Table 1 Descriptive Statistics for Dependent Variables by Superintendents' Characteristics								
		Authenticity		Transparency		Information		
		M	SD	M	SD	M	SD	
Gender	Male $(n = 160)$	4.39	0.33	3.71	0.40	3.85	0.45	
	Female $(n = 64)$	4.49	0.25	3.76	0.33	3.88	0.39	
Education Background	Doctorate ($n = 128$)	4.45	0.30	3.82	0.35	3.90	0.46	
	Specialist $(n = 50)$	4.46	0.27	3.67	0.43	3.89	0.39	
	Masters $(n = 46)$	4.25	0.36	3.52	0.32	3.70	0.36	
Career Path	Fast-rising $(n = 58)$	4.40	0.29	3.68	0.34	3.79	0.36	
	Non fast-rising $(n = 166)$	4.42	0.32	3.74	0.39	3.88	0.45	
Leadership Style	Democratic $(n = 36)$	4.36	0.33	3.61	0.42	3.85	0.39	
	Situational $(n = 60)$	4.36	0.34	3.74	0.40	3.87	0.38	
	Servant $(n = 46)$	4.42	0.32	3.78	0.36	3.83	0.40	
	Transformational $(n = 71)$	4.49	0.29	3.76	0.36	3.89	0.50	

No significant interaction effects were noticed between the superintendents' gender and educational background, F(6, 432) = 0.38, p = .89, partial $\eta^2 = .01$. Therefore, we proceeded to examine the main effects. There is no statistically significant differences between male and female superintendents on the combined dependent variables (authenticity, transparency, and information processing practices), F(3, 216) = 1.36, p = .26, partial $\eta^2 = .02$. However, significant differences were noticed for superintendents' educational background, F(6, 432) = 3.14, p = .005, partial $\eta^2 = .04$. Tests of between-subjects effects revealed that the participants were different on transparency, F(2, 218) = 7.26, p = .001, partial $\eta^2 = .06$. Post-hoc tests using Scheffe's method of multiple comparisons suggested that superintendents with doctorate degrees were more transparent than their counterparts with master's degrees. Superintendents with doctorate degrees were not statistically significantly different from those with doctorate degrees were more transparent set of the transparency during their budget-building processes.

Descriptive statistics of superintendents' authenticity, transparency, and information processing practices of their budget-building processes by school district information were presented in Table 2.

No statistically significant two-way or three-way interaction effects were noticed for the combined dependent variables (authenticity, transparency, and information processing practices) with school district size, type, and socioeconomic status levels. School district size did not affect the superintendents' authenticity, transparency, and information processing practices, F (6, 390) = 1.12, p = .35, partial η^2 = .02. School district's socioeconomic status was not affecting the superintendents' authenticity, transparency, and information processing practices either, F (6, 390) = 0.35, p = .91, partial η^2 = .01. Type of school district did not affect the superintendents' authenticity, transparency, and information processing practices either, F (6, and processing practices, F (9, 475) = 1.09, p = .37, partial η^2 = .02. Post-hoc tests using Scheffe's method of multiple comparisons suggested large school districts were more transparent than small school districts and medium school districts with respect to transparency. No significant differences were noticed between small, medium, and large school districts with respect to authenticity and information processing practices. Similarly, rich school districts were more transparent than poor school districts and middle school districts were not

statistically significantly different from poor or rich school districts. No significant differences were noticed between poor, middle, and rich school districts with respect to authenticity and information processing practices. No significant differences were noticed between urban, suburban, rural, and small town school districts with respect to authenticity, transparency, and information processing practices.

Table 2								
Descriptive Statistics for Dependent Variables by School District Characteristics								
		Authe	Authenticity		Transparency		Information	
		M	SD	M	SD	M	SD	
	Urban $(n = 20)$	4.48	0.30	3.87	0.30	3.93	0.31	
Тура	Suburban ($n = 27$)	4.44	0.30	3.82	0.41	3.89	0.37	
Type	Rural ($n = 136$)	4.41	0.32	3.70	0.39	3.87	0.46	
	Small Town ($n = 38$)	4.37	0.32	3.64	0.33	3.77	0.42	
Fiscally	Independent $(n = 59)$	4.32	0.04	3.57	0.05	3.81	0.05	
	Dependent ($n = 86$)	4.39	0.04	3.75	0.04	3.85	0.04	
	Poor $(n = 93)$	4.42	0.33	3.69	0.37	3.88	0.38	
Socioeconomic Level	Middle $(n = 114)$	4.41	0.32	3.72	0.39	3.83	0.48	
	Rich (n = 14)	4.42	0.27	3.96	0.34	3.97	0.37	
	Small $(n = 58)$	4.32	0.35	3.59	0.36	3.82	0.36	
Size	Middle (<i>n</i> = 137)	4.44	0.31	3.74	0.39	3.86	0.47	
	Large $(n = 26)$	4.49	0.23	3.90	0.29	3.96	0.35	
	Below Average $(n = 64)$	4.38	0.32	3.67	0.33	3.76	0.38	
Student Performance	At Average $(n = 40)$	4.42	0.33	3.73	0.38	3.88	0.46	
	Above Average $(n = 118)$	4.43	0.31	3.73	0.40	3.88	0.43	
	Below Average $(n = 75)$	4.41	0.30	3.73	0.38	3.83	0.50	
Per Pupil Expenditure	At Average $(n = 74)$	4.42	0.34	3.67	0.38	3.86	0.39	
	Above Average $(n = 73)$	4.42	0.31	3.76	0.38	3.87	0.39	

No statistically significant interaction effects were noticed for the combined dependent variables (authenticity, transparency, and information processing practices) for student performance level and per pupil expenditure level, F(12, 558) = 0.58, p = .86, partial $\eta^2 = .01$. Student performance level did not affect the superintendents' authenticity, transparency, and information processing practices, F(6, 422) = 0.46, p = .84, partial $\eta^2 = .01$. Per pupil expenditure was not affecting the superintendents' authenticity, transparency, and information processing practices either, F(6, 422) = 0.45, p = .84, partial $\eta^2 = .01$.

Finally, superintendents were put into two groups based upon the type of their school districts: (a) fiscally dependent school districts and (b) fiscally independent school districts. Superintendents whose type of school districts could not be identified were removed for this last step of analysis. Fiscally dependent school districts are defined as school districts where the Board adopted school budgets and then the budgets need to be approved by county commissioners. MANOVA revealed statistically significant differences on the combination of authenticity, transparency, and information processing, F(3, 141) = 3.57, p = .02, partial $\eta^2 = .07$. Tests of between-subjects effects suggested that superintendents in fiscally dependent school districts (n = 86, M = 3.75, SD = 0.38) were more transparent than their counterparts in fiscally independent school districts (n = 59, M = 3.57, SD = 0.36), F(1, 143) = 8.47, p = .004, partial $\eta^2 = .06$. The superintendents were not significantly different from each other with respect to authenticity and information processing.

DISCUSSION

The first research question dealt with leader authenticity and the level of transparency in school district budget-building practices. One of the four fundamental components of leader authenticity in the literature is relational transparency. It follows then that we looked for a positive correlation between superintendent authenticity and their budget-building practices. A positive correlation was found between school district superintendent leadership authenticity and the transparency of their district's budget-building practices. The more authentic the superintendents self-reported their leadership style, the more they reported that their budget-building practices were inclusive of others, both inside and outside of the school organization. In the districts of this study reporting high levels of superintendent leadership authenticity, people were invited into the decision-making processes and there were communication systems established to inform interested employees and citizens throughout the budget-building practices.

The second research question dealt with leader authenticity and the degree to which information processing practices were used during budget-building. Another fundamental component of leader authenticity in the literature is balanced processing. Authentic leaders are unbiased, data-driven, and systematic in their decision-making processes. Similarly, we found a positive correlation between school district superintendent leadership authenticity and the information processing practices of their budget-building practices. Again, the more authentic the superintendents self-reported their leadership style in this study, the more they reported using established written procedures, systematic data gathering, and methodical decision-making.

The conceptual framework of this study posited leader authenticity with budget-building practices of transparency, information management, and demographic variables. Two of these constructs were found to be associated. The transparency of a district's budget-building practices was strongly correlated with the information processing practices of the district's budget-building practices. In other words, the more superintendents reported their budget-building practices were open and transparent, the more they reported that their practices included established and known procedures as well.

The third research question sought explanation concerning the origins of variances across superintendent budget-building practices. In an attempt to find patterns among why some superintendents presided over more open or systematic budget-building practices than other superintendents, we examined their career paths and focused on their age when they attained their first principalship and their first superintendency. There were no significant differences between fast-rising and non fast-rising superintendents with respect to their authenticity, transparency, or information processing practices and the effect size was small. Thus, we did not find that school leaders who were picked earlier in their careers for principalships and superintendencies displayed measurably different budget-building practices from colleagues who rose more slowly through administrative ranks. Faster ascension might indicate accumulation of accomplishments and demonstrative competencies but we found no linkage to budget-building practices. This is consistent with our previous study (Bird, et al., 2009a; Bird, et al., 2010).

The next research question attempted to discern a pattern across our sample by looking at how superintendents self-describe their leadership styles. The combined dependent variables (transparency and the information processing practices) were not significantly affected by the superintendents' self-described leadership styles and the effect size was small. When asked to self-describe their leadership style, responding superintendents were given the choices of autocratic, laissez-faire, democratic, situational, servant, or transformational leadership style. The vast majority of our participating superintendents (> 90%) chose from the last four leadership styles but chose quite equitably across those four styles: democratic (16%), situational (27%), servant (21%), and transformational (32%) respectively. Thus, how they self-described their leadership style had very little linkage to how they presided over their budget-building practices. At the same time, their responses revealed a discernable pattern aligning authenticity to both transparency and information management processes as noted previously. One explanation for this apparent contradiction lies in the lack of definitional discreetness. Another possibility is that the construct of authenticity can be demonstrated across all traditionally defined leadership styles. This quandary certainly provides impetus for further study.

The fifth research question delved into leadership authenticity and other demographic measures. There were no statistically significant differences between male and female superintendents on the combined dependent variables (authenticity, transparency, and information processing practices) and the effect size was small. However, significant differences were noticed for superintendents' educational background with medium effect size. The participants were different on transparency. Superintendents with doctorate degrees were more transparent than their counterparts with master's degrees. Superintendents with education specialist degrees were not statistically significantly different from those with doctorate degrees or master's degrees with respect to the transparency during their budget-building processes. Thus, acquisition of a doctoral degree seems to be associated with a level of sophistication that sparks transparency in budget-building practices. This is tempered by participating superintendents' responses to questions regarding from where they learned their budget-building practices. Very few (9%) credit their university's professional preparation programs. Most (93%) credit on-the-job training for their strategies. These findings are consistent with previous studies (Bird, et al., 2009a; Bird, et al., 2010).

Our data revealed large school districts were more transparent than small school districts and medium school districts were not statistically significantly different from either small or large school districts with respect to transparency. Similarly, rich school districts were more transparent than poor school districts and middle wealth school districts were not statistically significantly different from either poor or rich school districts. Perhaps the large school districts inherently have a level of complexity which lends itself more to having more people involved in budget-building practices than that which occurs in smaller districts. Larger, richer school districts generally have more staff which also raises the possibility of greater involvement of folks in district operations.

Our level of data gathering on student performance level and per pupil expenditure level is a serious limitation to this study. Essentially, our student performance measure and per pupil expenditure measure were too gross (at, above, or below state average) and self-reported anonymously by the participating superintendents for us to have any confidence in drawing conclusions from them.

Finally, the last research question dealt with the difference between fiscally dependent school districts and fiscally independent school districts. The rationale for the finding of fiscally

dependent school district states being more transparent than fiscally independent school districts could reside in the context that fiscally dependent districts are required to prepare their budgets for "outsider" consumption. As such, they know from the start that they need to be inclusive of opinions beyond the table of organization of the school district. They need to gain the approval of another governance body like a Board of County Commissioners, for example. Thus, the involvement of others in budget-building practices is a given from the start.

Implications for Practice

Our conceptual framework sought relationships between leader authenticity and budgetbuilding practices. Our data suggest that those superintendents scoring high on the authenticity measure also presided over district financial practices that were more transparent and systematic. The acquisition and use of taxpayer supported resources are constantly under heavy scrutiny. Therefore, school leaders would be well-advised to examine their patterns of behavior and operational procedures to ensure alignment with community expectations.

Because authentic leadership has its roots in the business literature and is just starting to emerge in education literature, university graduate programs in educational leadership should examine its merits for inclusion in principal and superintendent preparation programs. Hiring boards would do well to include authenticity in their list of desirable characteristics in screening and selecting candidates for executive positions. Governing boards could add assessment items calling for evidence of authentic leadership into their executive evaluation performance review processes.

In all likelihood, educational resources will remain scarce and highly competitive relative to other social goods and services in the public sector. Understanding the antecedents and consequences of leader behavior and their operational practices is very important. Our study contributes to and supports the growing stature of leader authenticity and its relationship to positive organizational practices.

Implications for Future Research

The study provides direction for future research. First, its limitations need to be addressed. Single source data at one point in time is a serious limitation of this study. In gathering data about authenticity, self-reports come with a host of problems, not the least of which is objectivity. Asking others (building principals, central staff members, Board of Education officers) to gauge their superintendents' authenticity would generate meaningful data and concordance between leader and subordinates could be explored. Use of archival data concerning school district demographics and student performance would add validity and objectivity as well as more discrete data rather than relying on the self-reports of the superintendents involved. The representativeness of responding superintendents in this study to other superintendents in the respective states is not evident. While 224 superintendents provide a great deal of interesting data, generalizations can not be drawn to others beyond this study and is a serious limitation of the study. Superintendents are very busy folks and creating incentives for their participation in future studies might increase response rates.

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Future research efforts should be structured so as to focus on the relationship between leader behavior and organizational performance. How does superintendent authenticity affect building principals? Does authenticity affect student learning? Are administrative practices related to student test scores? Do relational factors between leader and subordinates influence student performance? Nesting data collection by pairing superintendents with their principals and their students within their districts and then comparing districts could generate salient information in real-world settings.

Finally, in an attempt to reveal real consequential impact of leader authenticity and transparent operational practices, future research could compare selected school districts scoring high on these matters with school districts scoring low on such variables for differences in per pupil expenditures, scope of curricular offerings, or other educational outcomes. In other words, is there a link between leader behavior and community support as measured by resource allocation decisions? Answers to these questions would be valuable for practicing school executives, university preparation programs, and district governing bodies.

The provision of educational services requires resources. For the most part, these resources come from the public sector through taxation. It is hard to imagine our citizens granting approbation for funding if they do not trust that their tax dollars are being appropriately used by school leaders. This study explored the relationships between leader behavior and administrative governance procedures. Leader authenticity and its association with budget-building transparency and information processing inform practitioners and those responsible for their development. If tax payers are to be won over, it will be on the playing fields of integrity, openness, and efficacy.

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Appendix: Questionnaire

1) Gender

2) Ethnicity

3) Highest Education Level Achieved

4) As a leader, I say exactly what I mean.

5) I admit mistakes when they are made.

6) I encourage everyone to speak their mind.

7) I tell you the hard truth.

8) As a leader, I display emotions exactly in line with feelings.

9) I demonstrate beliefs that are consistent with actions.

10) I make decisions based on my core values.

11) I ask you to take positions that support your core values.

12) As a leader, I make difficult decisions based on high standards of ethical conduct.

13) I solicit views that challenge my deeply held positions.

14) I analyze relevant data before coming to a decision.

15) I listen carefully to different points of view before coming to conclusions.

16) As a leader, I seek feedback to improve interactions with others.

17) I accurately describe how others view my capabilities.

18) I know when it is time to reevaluate my positions on important issues.

19) I show I understand how specific actions impact others.

20) I would classify my overall leadership style as:

21) Number of students in current school district:

22) Approximate percentage of free and reduced lunch students:

23) Type of school district:

24) Name of undergraduate institution attended:

- 25) Name of graduate institution attended:
- 26) If you completed a Master's degree did you attend part-time or full-time:
- 27) If you completed a Specialist degree did you attend part-time or full-time:
- 28) If you completed Doctoral level degree did you attend part-time or full-time:
- 29) Number of years in teaching:
- 30) Number of years as a building principal:
- 31) Number of years in a central staff position:
- 32) Number of years as an administrator:
- 33) Number of years in current superintendency:
- 34) Total number of years as a superintendent:
- 35) Number of years at elementary school work level:
- 36) Number of years at middle school work level:
- 37) Number of years at high school work level:
- 38) Please indicate the career path that most resembles your work history:
- 39) Age at first administrative position:
- 40) Age at first principalship:
- 41) Age at first superintendency:
- 42) Number of years, as a superintendent, that you have worked with (most senior) current high school principal:
- 43) Number of years, as a superintendent, that you have worked with (most senior) current middle school principal:
- 44) Number of years, as a superintendent, that you have worked with (most senior) current elementary school principal:
- 45) Number of years, as a superintendent, that you have worked with current business manager:
- 46) For the most part, would you say your students score:
- 47) For the most part, would you say your per pupil expenditure levels are:
- 48) The budget-building process should be largely delegated to the business manager.
- 49) The budget-adoption process should be a matter of adopting a set of ideas rather than adopting a set of numbers.
- 50) The budget-building process should be totally within the purview of the administration and community input is not needed.
- 51) The budget-building process should create a forum through which ideas can be converted into reality.
- 52) Community involvement in the budget-building process should be formalized with written procedures adopted by the Board of Education.
- 53) Input from non-administrative sources should weigh heavily in eventual budget adoption decisions.
- 54) Access to the budget-building process should be extended to all interested parties.
- 55) Non-employee participants in the budget-building process should represent the diversity of the community.
- 56) Participation and deliberations during the budget-building process should be archived through the recording of meeting minutes.
- 57) Data from the district's student assessment system should be used extensively in deliberations during the budget-building process.
- 58) The curriculum revision process calendar should be aligned with the budget adoption calendar.
- 59) Data from the human resources office concerning staffing needs should be considered in the budgetbuilding process.
- 60) The adopted budget document should include the district's philosophy, vision statement, mission statement, and annual goal statements.
- 61) The adopted budget document should include language linking programs to dollars.
- 62) The adopted budget document should outline the connection between district needs and resource distribution.

- 63) Communication channel and chain of command organization charts should be available to employees and community members.
- 64) Roles and responsibilities of administrators, staff, and Board of Education members in the budgetbuilding and budget-adoption processes should be reduced to writing and published for staff and community.
- 65) The adopted budget document should be available to any interested citizen.
- 66) There should be an appeal process established to provide stakeholders access to inquiry concerning budget matters.
- 67) There should be a "frequently asked questions" log for the budget-building process which is published for stakeholders.
- 68) Questions and suggestions concerning the budget should be analyzed and archived for possible inclusion in future budgets.
- 69) There should be written guidelines describing how disputes will be settled during the budget-building process.
- 70) There should be horizontal equity across buildings and vertical equity among levels in resource distribution.
- 71) The superintendent should be the arbiter in areas of competing values such as instruction non-instruction; classrooms extra-curriculars; and, building level central staff needs.
- 72) When someone has a request to add something to the budget, they should be required to present a concomitant revenue enhancement or expenditure reduction to fund their idea.
- 73) There should be a published timeline established for the introduction of new ideas during the budgetbuilding process.
- 74) A draft of the proposed budget should be placed on public display for a specified number of days prior to final adoption by the Board of Education.
- 75) Principals should be required to periodically discuss budgetary matters with their staffs.
- 76) There should be incentives in place to reward innovative suggestions which enhance resource management.
- 77) There should be a systemic assessment program applied to the budget-building and budgetimplementation processes to spur continuous improvement.
- 78) Directives given to external auditors should be published and available to staff and community.
- 79) Cash-handling directives should be reduced to writing and disseminated to staff throughout the district.
- 80) The financial operating topics covered by the chief business officer during in-service sessions with building principals should be adopted by the Board of Education.
- 81) A budget adoption calendar listing the sequence of decision-making dates should be published and distributed to staff and community.
- 82) The Board of Education should establish a fund equity target early in the budget-building process.
- 83) If the superintendent's administrative budget recommendation is not adopted in total, there should be a written policy guiding how amendments from the Board of Education will be made.
- 84) There is no difference in your current set of budget-building strategies from what you used in your first year as superintendent.
- 85) You learned your current set of budget-building strategies in your university graduate preparation program.
- 86) You learned your current set of budget-building strategies from on-the-job training.
- 87) You learned your current set of budget-building strategies from a combination of your university graduate preparation program and on-the-job training.

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