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Michael Shurden
Editor
Lander University

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LETTER FROM THE EDITORS

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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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Michael Shurden
Editor
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ETHICS AND MUSIC: A COMPARISON OF STUDENTS AT PREDOMINANTLY WHITE AND BLACK COLLEGES, AND THEIR ATTITUDES TOWARD FILE SHARING

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Nancy Turner, West Texas A&M University
Suresh Gopalan, Winston Salem State University

ABSTRACT

The relationship between race and ethics has been explored in recent years, but to date only limited mixed empirical results have been recorded. Still, the notion of examining a race/ethics relationship has relevance because of the variance in culture by race.

In the last few years, the RIAA (Recording Industry Association of America) has launched thousands of lawsuits aimed at students in the university community. These lawsuits are aimed at people engaged in allegedly illegal music file sharing. While some progress has been made recently in assessing students' ethical beliefs about illegal music downloading, as well as differences based on student age, no information exists regarding racial and cultural differences in attitudes toward illegally downloading music.

This study examined student beliefs at two institutions, one a historically white university, the other a historically black university. The results showed that while there were some price sensitivity differences between blacks and whites regarding the prices of CDs and music downloads, there were no significant differences in their ethical views toward music downloading and file sharing. Both groups demonstrated generally equally favorable views toward illegal music downloading.

INTRODUCTION

Electronic music downloads (EMDs) continue to generate controversy in the recorded music industry. In the first years of the 21st century, sales of pre-recorded CDs plummeted, and were blamed in part on peer-to-peer (P2P) file sharing of songs by individuals. The Recording Industry Association of America (RIAA) has filed suit against thousands of persons engaged in allegedly illegal file-sharing. In the past three years, numerous pay-per-song sites have emerged, offering people a legal way to acquire recorded music. Portable digital music devices such as the iPod

interface easily with computers as well as download sites, making digital music a powerful force in the market. The ubiquity of devices such as the iPod stresses the importance of music portability, and thus legal and illegal music download sites both have thrived.

In spite of lawsuits by the RIAA to counteract the number of songs illegally downloaded via the internet, the practice of P2P file sharing continues practically unabated. Although the sale of legal music downloads is up significantly, the number of music files on file sharing networks has continued to rise as well.

Sales of recorded music on CD have plummeted in recent years. While unit sales were 722.9 million in 1995 and 942.5 million in 2000, they fell to 766.9 million in 2004 (Information Please 2005). During that same time, electronic music downloads (EMDs) soared. Although illegal downloads have flattened out somewhat in recent months, the number of online music files at file-sharing sites rose three-percent in the first one-half of 2005, from 870 million files to 900 million files (IFPI 2005).

The RIAA continues to pursue offenders with clockwork regularity. On October 26, 2005, another 745 persons on 17 college campuses were sued individually for illegal file sharing by the RIAA. This followed similar size batches on September 29 and August 31. (RIAA 2004 & 2005, EFF 2003-2005, Aughton 2005) These "John Doe" suits are in addition to the thousands of such suits filed since Spring 2003, and monthly since February 2004, and exclusive of hundreds of additional "named defendant" suits. (RIAA 2004)

Over 300 legal music download sites now exist, including the likes of Napster, Rhapsody, iTunes, and Wal-Mart. Sales at these online vendors have grown dramatically since their inception. The majority of this trend is accounted for by Apple's iPod portable music device, which accounts for as much as two-thirds of all legal music downloads.

By early 2006, Apple reported it had sold over 1 billion songs through its iTunes service (Apple 2006), this coming only one year after reaching sales of 250 million songs (CNET 2005). By March 2006, Apple had sold over 42 million iPod units since 2001 (Benderhoff 2006). In October 2005, Apple reported it had sold over 6.1 million iPod players in its third quarter of 2005 alone (Ecker 2005), and had also sold over 1 million videos at iTunes in the first 19 days of its market rollout (MacRumors 2005).

Music download sales in 2004 were triple what they were in 2003. Furthermore, there were 180 million single track downloads in the first six months of 2005, compared to 157 million in all of 2004, and only 57 million in the first six months of 2004 (IFPI 2005). For the entire year, there were 352.7 million legal music downloads in 2005 (Barnes 2006).

Still, a late-2004 CAIDA study shows that, while the industry is enjoying rising legal music download sales, illegal P2P file sharing has not declined (Karagiannis 2004). College students are assumed to be a primary group of offenders (RIAA), as evidenced by the number of campuses targeted with lawsuits. But no distinction has been made by the RIAA regarding the racial compositions at these colleges. Are all college students as likely to engage in illegal music sharing

and copying? Or is there a higher likelihood that one racial group may engage in this activity over another?

Gerlich, et al (2005) and Gerlich and Turner (2006) have examined the ethical values of college students regarding legal and illegal music download activities. As a whole, they found that college students demonstrate favorable views toward illegally downloading music, with little or no fear of prosecution. They also found numerous significant differences in ethical values based on the age groups of students (tradition 18-24 year olds vs. older students), with older students showing less favorable views toward illegal downloading activities. Gerlich and Turner call for more analysis of the subject based on gender, socio-economic class, and race to determine if and where important differences may exist. In so doing, the RIAA may be better able to target its lawsuits in the future.

The need thus exists to further study this phenomenon and determine current attitudes toward the practice, identifying those most likely to participate in such illegal activities and why. This will allow the industry to more effectively determine the best approach for deterring continued offenses.

THE STUDY

A survey that measured music downloading activity was developed and administered to students at two regional universities in their respective Colleges of Business. Participation was not mandatory, thus rendering this a volunteer sample. One school is a historically white college (HWC), while the other is a historically black college (HBC). Technically, the HWC is a public university, but its enrollment has always been predominantly white. Both schools have an 80% or greater majority of the predominant group. A total of 254 usable surveys were collected at the HWC school, while 71 were collected at the HBC school.

The practice of using historically white or black colleges for studies of this purpose is established in McCuddy and Peery (1996), as well as Gerlich and Gopalan (1993a, 1993b). Colleges such as these, while not 100% homogeneous, tend to exhibit the dominant cultural traits and values of the largest racial/ethnic group on campus.

A variety of demographic variables were measured, including gender, age, class rank, computer ownership, and internet usage. Respondents were then asked to rate their level of agreement/disagreement with 14 attitudinal statements that measured their views on both illegal and legal music downloading, industry pricing, music sharing, and the threat of being sued. For the purposes of this study, only the mean responses to the attitudinal questions were studied and compared between the two groups of respondents.

RACE AS A FACTOR

As noted by McCuddy and Peery (1996), the relationship between race and ethics is a relatively underexplored topic, and thus ripe for further exploration. Thus far results in the field have

been mixed. Stead, et al (1987), using scenarios, found no relationship between race and unethical decisions. Tsalikis and Nwachukuru (1988) exposed black and white students to different ethical scenarios, and found the two groups to share ethical beliefs in one instance, but not share them in another. McCuddy and Peery found significant correlational differences in four of five of their hypotheses, but correlations do not allow for causal inferences.

The connection between race and culture, though, is more firmly established. England (1975) and Hofstede (1980) contend that people raised in different cultures have different values and ethical belief systems. McClelland (1961) and Prasad and Rao (1982) argue that different countries and cultures have different effects on business ethics and practices. Norms and standards that exist across cultures and civilizations (e.g., honesty, integrity, etc.) may very well have different levels of adherence across those cultures.

Tat (1981) explored the ethical values of black and white students, and concluded that subculture membership is a determinant of ethical beliefs. Specifically, he found that black and white subjects differed in their ethical perceptions. This may be partially explained by the fact that a sizeable number of minority students are raised in an economically disadvantaged environment. Limitations and experiences imposed by such socio-economic constraints may cause them to have deep-seated views toward business practices that may substantially differ from those of other more economically advantaged groups.

Gerlich and Gopalan (1993a, 1993b) explored how strongly white and black students identified with celebrity endorsers of different races. They found that whites identified nearly equally strongly with white and black celebrities, while blacks identified most strongly with black celebrities, and very poorly with white celebrities. These differences were attributed in large part to differences in culture.

Lee (1981), however, showed that culture did not affect ethical beliefs. His study of Chinese and British managers demonstrated no significant effect due to culture, nor the interaction of culture and level of management. These findings contradict the generally accepted view that different cultures produce different ethical beliefs.

Given the disparities noted above, as well as the magnitude of ethical issues pertaining to illegal music downloads, the primary purpose of this paper is to compare the ethical beliefs of students attending a mainstream campus (that is predominantly White) with those attending a historically Black campus. With respect to sampling, our method is potentially the best possible proxy for studying respondents embedded in mostly homogeneous but relatively different racial backgrounds. The amount of publicity surrounding the RIAA lawsuits has made illegal music downloading one of the most hotly contested ethical subjects of our time. The shotgun method of the RIAA to sue college students without regard or attention to demographic variables or propensities begs the question of whether there are differences between different groups in their ethical views on this activity. In determining if differences exist, the RIAA might be better able to target their lawsuits at the appropriate parties.

HYPOTHESES

Given that the RIAA has primarily targeted university network users in its lawsuits (RIAA 2004), it follows that the primary alleged offenders are typical college students. There is definitely an argument that the RIAA has turned to targeting college students because such suits will generate less bad PR for the industry than suits against young children and grandparents. (Dean 2003 & 2004; Mello 2003; Sullivan 2003; Coleman 2003; Mook 2005) Nonetheless, college campuses are considered a hot bed of illegal download activity with newer high-speed university computer networks adding fuel to the fire, and the issue has become one that college administrators have had to address. This is true not only because of ethical issues, but also system overload. (RIAA 2004) Thus, a survey of college students and their downloading habits is a valid audience.

There has been no apparent attempt by the RIAA to distinguish between the race of college students at the campuses selected for legal scrutiny. We thus can make no *a priori* assumptions about race-related differences. Thus, for the purposes of this study, it is hypothesized there will be no significant differences in the mean scores between college students at HWC and HBC institutions.

Specifically, we propose 14 hypotheses (as listed below in Table 1 with results), each stemming from a Likert-type statement in the survey.

TABLE 1
Summary of attitudinal measures. (Strongly Disagree =1 to Strongly Agree =5). (*) significant at 0.05 level

Hypothesis & Survey Statement		Mean Score HWC	Mean Score HBC	t	p
H1:	It is morally wrong to copy CDs for friends	2.355	2.436	-0.498	0.619
H2:	It is morally wrong to download unauthorized music from the internet.	2.984	2.915	0.398	0.691
H3:	The record industry should prosecute those who have downloaded songs illegally from the internet.	2.330	2.285	0.283	0.778
H4:	Prices ranging from 88 cents to 99 cents per song download are fair for consumers.	3.248	2.774	2.769	0.007*
H5:	The retail price of CDs is about right.	2.375	2.788	-2.494	0.014*
H6:	File-sharing sites emerged because the perceived value of CDs was too low in relation to the number of good songs on each CD.	3.377	3.295	0.550	0.583

TABLE 1
Summary of attitudinal measures. (Strongly Disagree =1 to Strongly Agree =5). (*) significant at 0.05 level

Hypothesis & Survey Statement		Mean Score HWC	Mean Score HBC	t	p
H7:	The government will eventually be able to put an end to illegal file sharing on the internet.	2.265	2.385	-0.763	0.447
H8:	The threat of being sued will keep me from illegally sharing files on the internet in the future.	3.234	3.100	0.764	0.447
H9:	It is wrong for the record industry to make such a big deal about music piracy.	2.796	2.728	0.434	0.665
H10:	The relative ease of downloading and/or burning CDs makes it too tempting for me to swap music illegally.	2.928	3.228	-1.885	0.062
H11:	Other people in my household/dorm have engaged in unauthorized file sharing and/or CD burning.	3.181	3.314	-0.710	0.479
H12:	People would burn fewer CDs and share fewer files if the retail price of CDs were not so high.	3.815	3.328	2.674	0.009*
H13:	It is OK to burn a "mix CD" of your favorite tunes to give to a friend.	3.762	3.642	0.782	0.436
H14:	I resent the anti-copying features some record labels have started putting on their CDs.	3.070	2.869	1.334	0.185

RESULTS

Respondents were grouped according to their college, with Group 1 consisting of those students at the HWC, and the remainder at the HBC. The mean scores of their responses to the 14 Likert-type questions were calculated and appear below in Table 1. Individual t-statistics and probability values were also calculated and appear in the Table.

The results show that no significant differences exist between the two groups with regard to the ethics of downloading musically illegally and file sharing. There were three significant differences noted (H4, H5, H12); each of these pertained to price sensitivities between the groups.

For example, in H5 the black respondents responded more favorably that the price of CDs is about right. In H12, blacks responded less favorably that "people would burn fewer CDs and share fewer files if the retail price of CDs were not so high."

Conversely, in H4 whites were less price-sensitive to the price per song of legal music downloads (88 – 99 cents). These findings are interesting because of their apparent contradictions. Black respondents in the study were more accepting of the price of CDs than were whites, but whites were more accepting of the price of per-song downloads. Price sensitivity to the cheaper of two options is perplexing, especially when one considers that a standard CD contains about 12 songs. Purchased separately, these 12 songs would be less than the price of the tangible CD that these respondents were less averse to buying than whites.

More importantly, there were no significant differences reported in hypotheses that examined ethical views regarding music downloading (H1, H2, H3, H8, H10, H13). The similar findings across groups for these statements reflects an overall attitude in favor of illegally downloading and/or sharing music files. In other words, the two groups were similar in their disregard for the intellectual property rights afforded the copyright holders of songs.

DISCUSSION

One possible explanation that might explain H4, may be that black and white respondents may view a CD and a song download as *two different products*, thereby having different levels of price sensitivity. In a study by Gardyn and Fetto (2003), black consumers were 32% more likely to purchase CDs/taples/records by direct mail advertising than other racial/ethnic segments. It is possible, that this purchasing difference in consumer behavior may account for the perception among black consumers that CDs are priced about right. While our study did not examine the issue of age per se, it is possible, that black and white consumers may exhibit significant differences by age than race.

Although legal music download sales continue to increase rapidly, more work must be done to determine if race-related differences exist among these customers. The fact that the number of online music files rose three percent in the first one-half of 2005 suggests that illegal downloading has not been stunted. The findings discussed above, coupled with 2005 trends, hint that the problem is not going away, and instead may be holding its own or even growing.

It is significant to attempt to understand the reasons for this behavioral difference because, while the RIAA continues its lawsuit bombardment, the effect is questionable at best. The RIAA clearly believes that its strategy of individual lawsuits puts a damper on illegal activity. The pure impracticality of continuing to file suit, 750 or so people at a time when downloads are in the hundreds of millions, does not seem to have deterred the industry (Levin 2003). In fact, the random nature of the lawsuits against individuals seems to be an actual strategy. The President of the RIAA, Cary Sherman, has been quoted as saying "Lawsuits are an important part of the larger strategy to

educate file sharers about the law, protect the rights of copyright owners and encourage music fans to turn to these legitimate services." (Martin 2004)

A September 30, 2004 press release found on the RIAA website again emphasizes the organization's position that the lawsuits against university network users are designed to "drive the message to students that unauthorized downloading has consequences" and to make students aware of legal alternatives. (RIAA 2004) The industry seems to be relying still on initial studies from the end of 2003 indicating that use of particular downloading software was down. (Cox 2004; St. Louis 2004) The studies have been somewhat preempted by more recent statistics demonstrating that any effect from the lawsuits would be temporary and that illegal downloads continue to grow. (EFF 2005; Moreno 2003) Still, the industry continues with a new round of suits filed monthly, with accompanying press release. (RIAA 2004) There is a possibility that the suits are doing nothing but raising the ire of consumers, or, worse yet, becoming "old news" to a young generation, if the releases even make it into a bored media. Perhaps there is a better use of the advertising dollar to be determined by looking into what strategies influence different racial groups.

LIMITATIONS

This study is limited in that it uses volunteer student samples that are assumed to represent the larger white and black cultures in the US. Furthermore, business students were recruited into the samples, and these may not be representative of the larger student or overall population in their views regarding music downloading activities.

Further research is needed with larger samples that will allow for more conclusions to be drawn, as well as analysis of other demographic variables such as gender and age, and possible differences between these two groups. Finally, it would be prudent to broaden the scope of future studies to include Asian, Hispanic, and other racial/ethnic groups to determine the degree of similarities/differences across the various racial/ethnic groups.

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STUDENT PERCEPTIONS AND OPINIONS TOWARD E-LEARNING IN THE COLLEGE ENVIRONMENT

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ABSTRACT

Distance or electronic learning (E-learning) has become very popular on university and other academic campuses. Various distance learning technologies are being utilized for the delivery of courses and entire degree programs. With the advancement of instructional technology in education, both the courses and the duties of instructors are changing. Researchers have called for more attention to end-users' perceptions and satisfaction with online courses and the effectiveness of such offerings. This research surveys 113 business students in regards to perceptions concerning and satisfaction with distance education. The survey showed 88% reporting a positive E-learning experience and 79% would recommend E-learning courses to others. Eighty-eight percent would participate in E-learning courses in the future. Concerns were expressed over lack of communication with the instructor and other students. Younger students desired more contact with other students. Females desired better communication with instructors and clearer instructions.

INTRODUCTION

During the last few decades, the world has undergone significant changes in terms of technological advancements and the exchange of information. Advancements in information and communication technology led to distance learning becoming a focus of global attention (Pye, 1999). As a result of an increasingly competitive environment due to tightening budgets and lower enrollments, universities must continually review their curriculum and the methods by which instruction is delivered to students. Universities have tried to increase enrollment numbers, decrease the number of extra-hire teachers and offer a more flexible schedule to people seeking education and training (Zapalska, Shao, & Shao, 2003). This trend has resulted in educational institutions reaching students in remote locations and allocating the costs and expertise across multiple locations. The growth of part-time, non-residential, non-traditional students has fueled the demand for distance options. Due to these developments being fairly recent phenomena, little research exists investigating the effectiveness of, and student reaction to, distance education.

With changes in the economy, many college students have been forced to complete their degrees by non-traditional methods. One method of obtaining the required courses for a college degree is by participating in a distance learning environment. Many non-traditional students work

full-time in addition to having to juggle the demands of family, find time to attend class, and prepare assignments. Distance learning is education that is accessible at a time, place, location, and pace that is convenient to the user. The most commonly used distance education tool would be e-learning (online) courses. "E-learning", in simple terms, is Electronic Learning or any learning facilitated by electronic means which would include computer-based training (CBT) with modules, CD-ROM training, web-enabled, and Internet learning (Thomas & Cunningham, 2002). E-learning courses provide the student with an opportunity to continue their education or pursue personal and career development without a rigid schedule of assignments and class meetings. The online format offers the student a great deal of flexibility in terms of when they study, how they study, and how quickly they cover and master the material.

LITERATURE REVIEW

Because e-learning can be cost effective when compared to the traditional learning methods, more businesses and universities are using e-learning courses to teach their employees and students anything from company policies to new skills necessary for professional development. They are reducing expenditures by not having to distribute the course by paper or CD-ROM to all of the employees and by not having to send their employees to training centers, which automatically reduces or eliminates food, lodging, and travel expenses (Pallatto, 2002).

ADVANTAGES TO E-LEARNING

Web-based training can be applied in university settings in order to deliver instruction to students who are physically unable to attend class, or live in remote locations, or are located internationally (Boose, 2001). When compared to traditional instructor-led training, e-learning offers several advantages to students interested in pursuing personal development. Some of those advantages include: consistency, accessibility, adaptability, affordability, flexibility, and controllability over their learning experience.

An advantage to e-learning is the ability to achieve a higher level of consistency in training. With traditional training, it is likely that different individuals provide the training for one workforce. Having several trainers for a particular training topic could lead to different interpretations of the training material from one instructor to another which may or may not be the intended interpretation (McShulskis, 1997). Because the same training is given to all employees, the company can be assured that the quality and content of the training is consistent at all locations (Garvey, 2002). Consistency in training is a substantial benefit not only for the company but also for the student.

The common barriers to training have always been time and distance (Gunasekaran, McNeil, and Shaul, 2002). However, e-learning virtually eliminates these two barriers. With training materials accessible by personal computers, training is rendered when and where it is acceptable to

the user. The great accessibility of e-learning can be a substantial cost savings to a company (Nucleus Research, Inc., 2001). By enabling remote users access to e-learning systems, the organization does not have the expense of arranging training at a remote site or the expense involved with employees traveling to training sites (Kruse, 2006c). Eliminating travel time to a remote training site also allows employees to spend their time more productively. Students derive cost savings by using the technology in their own homes, eliminating travel expenses to the university. For the university, cost savings result when they can attract students from anywhere in the world.

In terms of accessibility, the student has access to the online course at any time whether they are at work, home, or on the road. With today's technology, a student who owns a laptop or any type of Internet capable device, can access a web-based online course at any time. Some fortunate people can even access the internet from their cellular phone without the need for a land-based phone line or network connection (Kruse, 2006b).

Utilizing an E-learning course format is advantageous to not only the student but also the instructor or company providing the course in terms of its adaptability. The content and format of an online course is easily updated to keep up with the ever changing times. In the event that changes need to be made, the information can easily be uploaded from the instructor's computer to the server-computer which allows the student access to the most recent information available when they log onto the course site (Kruse, 2006b). The benefit to that is two fold. One, time and money will be saved since the information doesn't have to be duplicated and redistributed to the students unlike with CD-ROM or other distance learning applications. Two, the student always has access to the most recent information available.

E-learning is also adaptable in its content and delivery such that it can be customized for any given situation. After analyzing an employee's training needs, the e-learning system can determine what level of training that employee may require. Training does not have to be cut short or rushed because the instructor ran out of time. Employees requiring more basic training can be identified. The content and format of an online course is easily updated to reflect changing times (Kruse, 2006c).

Accessibility allows a user the luxury of training where they want, but e-learning's benefit of flexibility allows a user the luxury to train when they want. With e-learning, a highly mobile workforce is able to complete training assignments whenever and from wherever they choose. The ability to access training anytime or anywhere is perceived as a key advantage to e-learning (Nucleus Research, Inc. 2001). Increased flexibility also allows learners to work at his/her own pace. Rather than force all employees to adhere to the same schedule, employees who can work faster are permitted. A study involving a 20-group sampling split between e-learning and traditional classroom training showed that the e-learning group finished 34 percent faster on average than the traditional group (Lawson, 1999).

Affordability is also an advantage to E-learning. This would be a benefit to both the student and instructor or organization providing the course. An online course is inexpensive in that the

distribution and delivery costs are minimal. From a business perspective, an online course would usually be cheaper than a traditional conference or seminar for their employees (James, 2002). For the student, the cost of an e-learning course is generally the same amount or less than a regular course taught in the traditional manner.

One of the greatest advantages is also a major area of concern. The student also has control over every aspect of the learning situation from the time spent on task, practice time, and study time (Brown, 2001). Featherstone (2006) named the student's control over their learning environment as the primary advantage to taking an E-learning course. Because students control so much of the activity that transpires in web-based learning, such as the amount of time spent learning and practicing, instructors should be aware that much of their responsibility has shifted to students. Research (Brown, 2001) indicates that many learners may not wisely utilize their instruction time. Depending upon a person's goal orientation and learning self-efficacy (how they approach the learning process), they may rush through instruction and skip practice sessions.

According to Brown (2001), even though E-learning would be an ideal learning situation for some students, the choices made regarding study time and the effort expended toward learning the material ultimately predicts the performance of the student. A benefit of the student having so much control over their learning experience is that advanced students can proceed without becoming bored with repetitive instruction and can progress through the material without having to wait on other students who may not be grasping the material as well. By the same token, students who are having difficulty with the material can slow down to a pace suitable to them which allows them opportunity to fully understand the content and not get frustrated with themselves (Kruse, 2006a).

Web-based learning, unlike traditional face-to-face instruction, is nonlinear. Its multi-dimensional aspects allow student to apply their existing knowledge, as well as a wealth of additional resources, in an almost instantaneous manner. Links to associated websites, a diversity of multimedia inputs such as video, audio, and still photos, and online chat rooms allow the learner to seek knowledge that will relate to their prior, personal experiences and engage them in interdisciplinary training (Liam and Huang, 2002).

Students in one research study indicated their satisfaction in the ability for web-based instruction to archive their progress throughout a course (Helmi, Haynes, and Maun, 2000). Dedicated students are also able to extend their learning beyond the requirements of a course when they tap into the wealth of online resources (Berger and Topol, 2001).

Adult learning theory states that adult learners prefer having a high degree of control in learning situations. Computer-based training gives them that control by allowing them to choose time spent on task, practice time, and study time (Harp, Taylor, and Satzinger, 1998). According to Brown (2001), even though e-learning would be an ideal learning situation for many, the choices made regarding study time and the effort expended towards learning the material ultimately predicts the performance of the student.

This controllable structure also allows the training to be geared toward the differences in individual learning rates (Blankehorn, 1999). Since the workforce is increasingly more diverse, one-size-fits-all training is no longer an option (Rand, 1996). Unlike traditional classroom training where the training is paced to accommodate the slowest person in the class, computerized training allows trainees to cover only the topics that they need to cover, not wasting time on subjects or concepts they already understand (Hein, 1999).

DISADVANTAGES TO E-LEARNING

While e-learning appears to have many benefits, it does have some drawbacks. These include bandwidth issues, culture, cost, acceptance, socialization and lack of human contact, and effectiveness, and technical difficulties. Bandwidth, by definition, is the speed of the server's and student's connections to the Internet/Intranet. The higher the bandwidth, the faster the connection is to download the information and streaming audio/video files needed for the course. Low bandwidth is generally only capable of handling text and some graphics. It is not always feasible for E-learning sites to utilize a lot of audio/video files because not everyone has the luxury of a high bandwidth as with cable and satellite company internet providers (Kruse, 2006c).

People resist change for many reasons. Even potentially positive change can sometimes be viewed as inconvenient or threatening. Because traditional classes take place in a class room with instructors present, it is perceived as a passive teaching method. However, because e-learning takes place through a ready-made computer program, it can seem cold and impersonal.

E-learning requires an individual to change their habits, behaviors, attitudes and perspectives. By taking away an individual's ability to interact with other human beings during the learning process, the synergistic group learning dynamic is interrupted (Campbell & Swift, 2005). People learn a lot from their classmates through differences of opinions and questions. E-learning misses these interactions, resulting in little or no 'in-person' contact and learning on their own.

Even though E-learning offers the student more control over their learning experience, Brown (2001) found that students many times do not exercise their control wisely. Combine this with the lack of human contact and personal instruction; the student may have serious difficulties grasping the material necessary in order to be successful in the E-learning course. According to Weaver (2002), students by nature are "social learners" who usually prefer to learn in groups and interact with their peers. Some methods used to combat this disadvantage are the virtual classrooms or chat rooms designated for that course, discussion boards, threaded bulletin boards, and e-mails to the instructor and/or fellow students. Weaver (2006) also noted that although the freedom and accessibility aspect of an e-learning course is attractive, students may not be motivated or disciplined enough to complete the course if they are not held accountable for the material to an instructor as they would be in a traditional classroom setting.

Perhaps the most difficult barrier to overcome regarding e-learning is end-user acceptance of it as a training medium. The lack of face-to-face interaction that causes students to feel isolated is the most commonly cited objection to e-learning. Many students and trainers feel that e-learning is cold and impersonal and that the valuable aspect of students and instructors having open discussion of class content is lost (Brower, 2002; Murgolo-Poore, 2001). Students involved in traditional training are able to engage in discussion and debate of class content in after-hours, non-scheduled social settings (Nisar, 2002). According to Weaver (2002), students by nature are "social learners" who usually prefer to learn in groups and interact with their peers.

Both the instructors and the students' roles change in this new format, and many students feel that they lose the valuable interaction common in a face-to-face setting. Many instructors feel that "to teach is to touch students," and they fear that e-learning will drastically change the way they are able to come into contact with learners (Brower, 2002).

Possibly the most important disadvantage of e-learning is the loss of social interaction and lack of human support (Anstine & Skidmore, 2005). According to Rubenstein (2003), the electronic learning opportunity ignores the soft side of interaction of the librarian and instructor with the students. Students do not always know what to ask or what is not known. This is the role of the instructor and librarian in the learning process. Without these elements present, e-learning does not furnish the full educational experience, leaving students to feel a certain element of isolation (Conaway, Easton, & Schmidt, 2005).

Some concerns of e-learning center on the lack of socialization and dialogue with other classmates and the instructor. Proponents of e-learning point to the use of online chat, listservs, and newsgroups as methods that allow students to interact and learn from others. Research indicates that students who experience face-to-face learning are more satisfied, but will accept a distance learning experience for the sake of convenience (Berger and Topol, 2001).

Even with all of the freedom of e-learning, there still needs to be interaction for the student to fully 'train' himself or herself with the information provided. Interaction should include complex activities for students, such as engaging and reflecting, annotating, questioning, answering, pacing, elaborating discussing inquiring, problem solving, linking, constructing, analyzing, evaluating, and synthesizing (Liaw and Huang, 2002). E-learning should ultimately empower the end users' professional skills.

While e-learning increases the flexibility and accessibility of training, some individuals do not possess the discipline required to manage it (Garvey, 1999). Even though E-learning offers the student more control over their learning experience, Brown (2001) found that students many times do not exercise their control "wisely". Combine this with the lack of human contact and personal instruction; the student may have serious difficulties grasping the material necessary in order to be successful in the E-learning course. Also, students may not be motivated or disciplined enough to complete the course if they are not held accountable for the material to an instructor as they would be in a traditional classroom setting.

Despite the advancements in modern technology, a computer server is bound to experience technical difficulties at some point in time. During this "down time", students are unable to neither connect to the E-learning course nor collaborate with their peers or instructor which can slow down the student's progress. Even though there are usually backups of the e-learning courses available in cases of an unexpected "technical difficulty", there will ultimately be some down time while the backup live and online (Gibson, 2006). Gibson (2006) noted that it is crucial to consider the technology requirements and issues upfront before even implementing an e-learning system such as the "operating system, Web browser, tracking system, learning management system, database, and server(s).

A negative implication of e-learning is information overload. The task is to sort through and manage the large amount of material available in the learning process. Staying on topic and focusing on the exercises at hand becomes a challenge when so many other avenues of learning beckon. Liaw and Huang (2002) indicate that when information overload occurs, learning time increase and learning motivation decreases. Students faced with numerous points of information to consider may be inclined to choose the easiest route instead of carefully evaluating the validity of the information. In order for e-learning to be effective, the instructor must establish perimeters for learning and carefully guide students from one activity to the next in order to avoid mental fatigue (Helmi, Haynes, & Maun, 2000). Whether or not e-learning affects student performance is debatable, as results of studies have been mixed (Berger & Topol, 2001). Employee communication is a critical factor in "overall employee satisfaction, productivity, and organizational success". Obstacles to successful communication are time, distance, costs, quality, flow and responsiveness (Murgolo-Poore & Pitt, 2001). Communication in an e-learning environment is more difficult because much of the context and nonverbal cues are eliminated. The communication methods predominantly used in virtual teams are telephone (included in this category are the audio conferences, voicemail, and regular telephone conversations), and other communication technologies like e-mail, chat, electronic discussions, and white boards (Watson-Manheim & Belanger, 2002).

The general consensus is that face-to-face encounters provide the richest form of human interaction. In terms of technology, media richness refers to how the multimedia technology conveys vocal inflections, tone, body language, and facial gestures. A "rich" medium is when none or hardly any verbal/nonverbal cues are filtered out of the media (Van der Smagt, 2000). Media "rich" forms of communication are generally necessary and preferred for an important task or in the event of a complex message. Less important tasks or messages should be sent via e-mail or posted on the bulletin board or desktop workspace (Kelley, 2001).

In distance learning, courses are only as effective as its platforms for the distribution of information. The platforms, i.e., whiteboards, virtual classrooms, blackboards, and discussion boards, used should be easily accessible and utilized in order to meet the needs of both the instructor and student (Colace & De Santo, 2006). The primary communication tool in a distance learning

environment is e-mail. Students use e-mail to communicate with the instructor and their peers when necessary.

There is much debate among researchers as to the long-term effectiveness of e-learning, and more research will need to be done to accurately calculate that effectiveness. Some research points to the successes of e-learning such as its cost effectiveness and resourceful use of time, while opponents of e-learning claim that it creates a passive learning environment and lowers the quality of education when compared to traditional classroom settings (Brower, 2003). A study by Ford (1999) at a southeastern university showed that classes taught using the Internet have approximately the same grade distribution as equivalent classes taught on campus, but with a lower percentage of students achieving a passing grade. However, Ford opined that these failures were linked more to a lack of self-discipline, than to the training itself.

There is still a divide over the effectiveness of e-learning in many corporations and a more stringent means of monitoring the effectiveness of e-learning should be done. According to a survey of 138 business professors, e-learning generally ranked in the lowest half of 20 training methods selected (Kaupins, 2002). With the change in training philosophy from traditional class room training to more learner-controlled training, there must be a refocusing of research attention toward the responsibility of the learner in determining performance (Brown, 2001).

METHOD

A survey was administered to 113 business students at a southeastern university with the purpose of obtaining information of these students' opinions toward distance education courses. The survey instrument used in the research was developed by the authors and included three parts. Part I contained items to identify demographic information for the participants which included degree program, gender, age, employment status, and experience with distance education. Part II contained items to measure communication methods between students and instructor and other similar items. Part III contained twelve Likert scale questions pertaining to participants' attitudes toward various aspects of distance learning. A five-point Likert scale with rankings from 1 (strongly disagree) to 5 (strongly agree) was used to measure these attitudes.

Research participants

Using a stratified sampling method, several classes were identified and registered students in the course were administered the survey instrument. Participation was voluntary and participants were presumed to possess a working knowledge of distance education courses in higher education, specifically in the manner by which these courses are administered. The survey was conducted anonymously; no personal information was collected that could be used to identify any individual participants.

Demographics

Participants in the survey are described by the following demographic information. The gender of participants was 58% female and 42% male. The age groups were 5% under 21 years of age; 47% aged 21 to 30; 25% aged 31 to 40; 16% aged 41 to 50; and 7% over 50. Type of degree sought by participants was 42% for undergraduate, 43% for a master's degree, and 15% for other degrees or certification programs. Eighty-eight percent reported being actively employed while 12% did not work. Of the respondents who were employed, 80% worked 30 or more hours per week. Forty-eight percent have at least one child while 52% reported having no children. Forty-nine percent have previously obtained a college degree prior to being enrolled in this course while 51% were pursuing an initial college degree or other certification.

RESEARCH FINDINGS AND ANALYSES

Experience in Distance Education

Two questions were used to measure participants' level of expertise and experience toward distance education. First, participants were asked to self-evaluate their level of technological expertise. The results were as follows: beginner (6%); medium (26%); intermediate (58%); and advanced (10%). Various delivery methods of distance learning technologies were reported by respondents as follows: 89% reported experience with an internet based course; 26% with interactive video or teleconferencing; and 18% with computer-based software training modules.

Reasons for Enrolling in a Distance Education Course

Respondents reported various reasons they decided to enroll in a distance education course. Ninety-two percent reported that convenience was a factor for enrolling in a distance education course; 49% cited accessibility; 22% responded adaptability; 76% flexibility; and 18% reported that their reason for enrollment was simply because the course is offered solely by the university in a distance education format. These responses sum to more than 100% because participants were allowed to select multiple reasons for enrolling in a distance education course.

Student to Instructor Interaction

Two questions were used to solicit participants' perceptions of student to instructor interaction in a distance education course. The first question asked participants to describe the quantity of the student to instructor interaction. Forty-three percent stated the quantity of interaction was less than a traditional class format, 35% stated the quantity was about the same, and 22% felt

the interaction was greater than a traditional course format. The second question asked participants to describe the quality of the student to instructor interaction. Seventeen percent responded that the quality of student to instructor interaction is less than experienced in a traditional class, 44% stated the quality was about the same, and 39% responded the quality of interaction was better than a traditional course. Interestingly, we found more students rating the quality of student to instructor interaction positively in distance education classes, while, as expected, students rated the quantity of interaction as less in distance education classes.

Effort Applied Toward Coursework

Respondents were asked to quantify the amount of effort applied in a distance education course toward learning new lecture material. Eleven percent reported expending less effort toward learning new material than in past traditionally-formatted courses, 35% reported the effort was the same, and 54% responded that they spent more effort learning new material than in a traditional course.

Communication with Instructor

Students were asked to identify the types of communication used when corresponding with the instructor for the course. The following types of communication (followed by the percentages of participants using that specific type) were reported: telephone (50%); email (98%); discussion board (76%); virtual chat (56%); group pages (23%); on-campus meeting (35%); fax (12%); and U.S. mail (19%). These responses sum to more than 100% because participants were allowed to select multiple types of communication.

Communication with Classmates

Eighty percent of participants reported communication with other students enrolled in the same course while 20% answered no communication. Of those reporting communication with classmates, the following types of communication were used: telephone (27%); email (61%); discussion board (64%); virtual chat (43%); group pages (22%); on-campus meeting (16%); fax (4%); and U.S. mail (6%). Again, these responses sum to more than 100% because participants were allowed to choose multiple types of communication.

Item Analyses

Item analyses were conducted on the 12 Likert scale items hypothesized to assess student perceptions on distance education. Initially, each of the twelve items was correlated with the total

score for distance education (with the item removed). All the correlations were greater than .30 except for two items: "It is important to have interaction with my professor" (r = .18) and "It is important to me to have interaction with my distance education classmates" (r = .29). These two survey items differed in content from the other ten items in that it measured importance of direct interaction. Based on these results, the two items assessing the importance on interaction were eliminated from the scale. The revised ten item scale revealed that all correlations exceeded .30.

The reliability of the measurement scale was analyzed by computing Cronbach's alpha. According to Dewberry (2004), an alpha coefficient of .70 is usually the minimum acceptable level. Any alpha less than .70 indicates that Likert scale items in a survey are unlikely to be measuring the same constructs. Cronbach's alpha for this survey was found to be .85, which indicates all items are highly correlated.

Likert Scale Questions

Two questions addressed perceptions toward interaction between students, classmates and their instructors. Ninety percent of participants agreed that student interaction with the instructor in a distance education course is of vital importance, while 8% had no opinion and only 2% disagreed on the importance of this interaction. Fifty-one percent agreed that interaction with classmates was important, while 17 % disagreed and 32% had no opinion.

Two questions dealt with communication problems with classmates and the instructor during a distance education course. Sixty-six percent of participants reported no communication problems between themselves and their instructor, while 23% reported communication problems and 11% reported no opinion. Fifty-seven percent of participants reported no communication problems with their classmates while 21% reported problems. The number one recommended change for distance learning was to have more interaction with the instructor followed by improved technology to overcome communication challenges (i.e., update servers, increase accessibility of sites, make site simpler, etc).

Three questions measured participants' attitudes toward the difficulty of course material and expectations of learning. Fifty-nine percent agreed that they learned as much as they would in a traditional class format while 21% felt they learned less. Sixty-eight percent preferred class projects and assignments that forced them to learn new things while 15% did not. This indicated to us that students were accepting a higher level of responsibility for their success in distance classes. Eighty-one percent felt they were challenged as much in a distance education course as they would be in a traditional format; 12% reported they were less challenged.

One question addressed the clarity of instructions in a distance learning environment. Seventy-two percent agreed the instructions toward learning were clear in distance environment while 13% felt instructions were unclear.

Two questions measured participants' perceptions toward future courses in distance learning. Seventy-nine percent would recommend a distance education course to their peers; only 9% would not recommend this course format. An overwhelming majority of participants expressed satisfaction with distance learning in that they would participate in a similar format in the future. Eighty-eight percent would participate in another distance education course while 7% would not.

Statistics for the mean responses of the revised ten item Likert scale survey are listed in Table 1. Included are mean responses and relevant descriptors to illustrate perceptions for each of these ten survey items.

Table 1: Statistics for Likert Scale Questions' on Students' Perceptions of Distance Learning

Question	Mean	Descriptor
When taking a distance education course, I had no problems communicating with my instructor when I have questions or concerns.	3.67	Undecided
It is important to have interaction with my professor.	4.46	Agree
I never had any difficulties communicating with my fellow classmates during the course of the semester.	3.50	Undecided
I think I learn just as much in a distance learning environment as I would sitting in class with a hands-on instructor.	3.63	Undecided
I prefer projects/assignments that force me to learn new things.	3.68	Undecided
I feel that I am challenged as much in a distance learning environment as I would normally be in a traditional classroom.	4.12	Agree
I would recommend distance education courses to my peers if asked.	4.15	Agree
I would participate in another distance education course if given the opportunity.	4.29	Agree
It is important to me to have interaction with my distance education classmates.	3.51	Undecided
The instructions are clear with the distance learning environment.	3.79	Undecided
I have more flexibility with distance learning than the traditional classroom setting.	4.38	Agree
I have more autonomy (or independence) with distance learning classes.	4.33	Agree
(1=strongly agree, 2=agree, 3=undecided, 4=disagree, 5=strongly disagree)		

DIFFERENCES BY GROUPS

Chi-square analysis was conducted to examine any differences in responses to the twelve Likert-scale questions used to analyze respondents' perceptions toward distance learning. These analyses were conducted within three demographic items: gender, age, and student classification (undergraduate or graduate).

Significant differences were found within gender for survey items one (When taking a distance education course, I had no problems communicating with my instructor when I have questions or concerns) and ten (The instructions are clear with the distance learning environment). The significant difference in item one [Chi-square = 15.60, df = 2, $p < .01$] indicated that females experienced more problems in communicating with the course instructor to address questions or concerns. The significant difference in item ten [Chi-square = 11.59, df = 2, $p < .01$] indicated that males perceived the instructions within distance learning to be more clear than females.

Significant differences in perceptions were found within age for survey items one (When taking a distance education course, I had no problems communicating with my instructor when I have questions or concerns) and nine (It is important to me to have interaction with my distance education classmates). The significant difference in item one [Chi-square = 6.63, df = 2, $p = .04$] indicated that respondents age 30 and under experienced fewer problems than those 31 and over in communicating with the course instructor to address questions or concerns. The significant difference in item nine [Chi-square = 10.46, df = 2, $p < .01$] indicated that respondents age 30 and under felt that interaction with distance education classmates was more important than those respondents 31 and over.

Significant differences were located by student classification for survey item one and eleven (I have more flexibility with distance learning than the traditional classroom setting). The significant difference in item one [Chi-square = 10.19, df = 2, $p <.01$] indicated that respondents classified as graduate students experienced fewer problems than undergraduate students in communicating with the course instructor to address questions or concerns. The significant difference in item eleven [Chi-square = 7.17, df = 2, $p = .03$] indicated that graduate students reported more flexibility with a distance education than a traditional classroom lecture format than undergraduate students, who reported less flexibility in the distance education format.

A previous study in 2001 in the College of Business at the same university revealed 74% of those surveyed had taken an online course. 75% described their level of technical expertise as intermediate. The number one problem with e-learning was the students felt like they learned better with a professor present. However, 66% would take another online course and 69% would recommend it to others. Communication between the e-learning student and instructor was also an issue. Communicating through an electronic medium can sometimes be difficult because both the verbal and non-verbal cues that are used to convey messages are not available for interpretation.

The students identified flexibility and convenience the primary advantages for e-learning courses when compared to the traditional classroom. The students rated highly e-learning being 'accessible' and controllable with their studying at their own pace. 28 percent of the students agreed that the amount of responsibility and motivation required to be successful was higher in e-learning. Communication concerns between the e-learning student and instructor were an issue with 39 percent. Comments by students included not having verbal and non-verbal cues to convey messages. Students also felt that at times something gets lost in the transmission, and information

is not received as intended, which makes establishing trust between student and instructor difficult. Also, students reported that limited broadband access caused problems with slow transmission of materials. An instructor can reduce some problems by utilizing a good plan and consistently trying to add communication opportunities with students to the course.

FUTURE RESEARCH

Investigating the unique differences between students of traditional teaching versus distance learning methods is an area of interest. Determining the antecedents for success in each discipline would be of value to universities and students. This study was limited on the number of differentiating variables investigated. Future studies may want to investigate other variables, such as additional demographics, perceived risk, involvement and knowledge. Additionally, this study did not examine success rates in distance learning situations. Finally, this study was limited to one university. Broader-based samples will need to be the norm in future studies in order to rule out variables attributing to the differences other than those under investigation.

The popularity and importance of distance education has been recognized over the past two decades. While universities are competing for e-learning students with new offerings and advanced technology, there have been few studies of determinants of student success in using the distance education approach. There has been profiles based on intuitive deduction and educated speculation; future studies should add rigor to these assumptions.

There seems to be concerns by students of the nontraditional teaching method of e-learning. Better understanding of the issue of retention of material would be fertile ground for additional studies in e-learning. This study was limited to an investigation of attitudes about e-learning. Future research should focus on what types of learning is best suited to this new technology (Brown, 2001). Also worthy of investigation are attributes of learners such as responsibility, socialization needs, and retention of material. While e-learning has been shown to have financial and availability benefits to a broad base of learners, e-learning is still new and will require long-term research to accurately study the effectiveness of e-learning on the individual.

CONCLUSION

Electronic learning has advanced to the point of being a major component of the curriculum in many institutions of higher education. Cost savings and the opportunities for significant enrollment increases will continue to drive these methods of instructional delivery. The advantages from both the student and institutional perspectives are significant, and many of the disadvantages can be reduced or eliminated as technologies continue to advance, and adequate training and planning is implemented by the institutions. Ultimately, electronic learning training or education will

only be effective if the perceptions of the end-users are understood. The technology is only beginning to reveal its potential.

Based on our study, we concluded that most (88%) of our students were satisfied with distance learning. In addition, 88% would take another distance learning course and 77% would recommend it to their colleagues. Evaluation of students' opinion is an area where faculty can frame a course to assist students in becoming more efficient. Using the information from student surveys assist a university in offering what their customers want in a format that satisfies them. With competition being keen for students, the university who listens to the students and adjusts courses to meet their needs will be the one experiencing a viable student body and a healthy bottom line.

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THE USE OF SCORING RUBICS IN MANAGEMENT ACCOUNTING

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ABSTRACT

The first two courses in accounting, principles I and II elicit fear and misunderstanding from most business students. Reinforcing the importance of accounting as a foundational building block in business education is critical to the students' success in later business courses. Yet, a large number of students who exit the accounting principles courses are not trained in using accounting for business decisions. In this study the treatment was a rubric assignment in one section of an accounting principles II course. Another section was maintained under the lecture, homework and exam format. Results indicated that students using scoring rubrics in the course initially struggled with incorporating the method into their learning process. Even after students were familiar with the rubric process, they did not show improvement over the control group. Although initial findings were not significant, issues discovered in current study will be used to refine future research.

INTRODUCTION

The recent accounting scandals ranging from Enron to WorldCom that have rocked the business world as reported in the Wall Street Journal, Business Week and other media outlets emphasize the need for change in accounting education. All business students now need to be able to accurately assess the financial statements and accounting records in business organizations. The conventional wisdom that accounting skills should be developed only by those intending to be accountants has proven to be a costly mistake. All managers now have the responsibility to be able to identify accounting inaccuracies within their own organization. The reaction from governmental bodies has been centered on increasing the validity of publicly issued accounting information, as the provisions of the Sarbanes-Oxley Act of 2002 have partially been intended to do.

One of the main goals behind recent changes in accounting has been to make non-accountants (Top-Management) responsible for publicly released accounting information. This outcome has led to other non-accountants being forced to reevaluate their accounting skills. Business Schools have responded by reemphasizing the principles of accounting courses and developing courses in ethics and corporate responsibility. Focusing on changing course content and adding new courses, however, does not address the fundamental problem of poor performance by students in the initial principles of accounting courses.

There are several possible reasons for the overall poor performance in the two initial accounting courses: 1) U.S. GAAP (Generally Accepted Accounting Principles), while highly developed, is not always intuitive. 2) More students who are non-accounting majors enroll in the principles of accounting courses. These students are typically not interested or motivated to perform well. 3) Fear of accounting related to perceptions of difficulties in learning accounting exists.

All three reasons indicate the need for developing more efficient methods of delivering accounting knowledge to business students. If students understand what they are supposed to learn from a course, and have guidelines on how they will be evaluated, then even students who are not accounting majors will be able to understand the basics of GAAP and other accounting methods. Clearly stated guidelines will be able to minimize or eliminate students' fear of accounting.

One of the tools available to enhance student learning in accounting courses is scoring rubrics. Arter and McTighe (2001) define a rubric *as "scoring tools containing criteria and a performance scale that allows us to define and describe the most important components that comprise complex performances and products" (p. 8). Criteria are "standards by which something can be judged or valued" (Gregory, Cameron, and Davis, p. 7). By specifying the particular qualities or processes that must be exhibited, an instructor provides students with a clear description of and expectations for performance. The rubric clearly highlights the important components that comprise a particular problem or performance.*

The purpose of this study is to introduce students enrolled in a principles of accounting class to the concept of interpreting accounting information and utilizing the interpretation to enhance students' decision making capabilities through the use of the scoring rubric. This paper extends the literature in accounting education by showing the effect of a scoring rubric on students' performance on examinations in an introduction to managerial accounting course.

REVIEW OF LITERATURE

Accounting education has historically been considered a necessary, but misunderstood area in Business Schools. Accounting knowledge is recognized as an essential part of the foundation of all business education programs: In reality, many students consider accounting coursework nothing more than a hurdle or impediment to their immediate goal of graduating or even surviving the current semester. The accounting education research on how to make more students successful in achieving the goals of understanding accounting concepts and methods is extensive.

Catanach, Croll and Grinaker (2000) found evidence that by introducing a creative approach to teaching in intermediate financial accounting courses, students learned accounting concepts at a much more detailed and applicable way than courses relying on traditional instructional methods. This creative approach, called the "Business Activity Model" (BAM), focused on developing accounting students' critical thinking, communication, and research skills. The AICPA (American Institute of Certified Public Accountants) has identified these three skills as important in

understanding and delivering accounting information. Connecting accounting concepts to "real world" issues drove students' desire to understand the issues beyond what was necessary for passing the course.

Springer and Borthick (2004) also introduced real world issues into the accounting classroom with defined objectives. In several introductory accounting courses, students were given a business simulation consisting of eight different fundamental accounting concepts. By solving problems collaboratively in each of eight different simulations, students developed critical thinking skills specifically focused on accounting issues. Their ability to work together in groups and produce required written summaries influenced their accounting learning experience positively.

The use of real world exercises is powerful and motivates students to explore accounting issues. A key element to make real world exercises relevant for students is to make sure they have the basic decision making and critical thinking skills necessary to comprehensively examine accounting problems as presented in case scenarios.

Ammon and Mills (2005) move the literature in this area forward with their article on course embedded assessments. They found that by developing decision scenarios for accounting students that required input from marketing, operations, etc., students thought "outside" the accounting box and connected the interrelationships between functional business areas. Their introduction of a scoring rubric gave students a tool to use in assisting students in identifying the performance criteria on which they would be evaluated.

The Ammon and Mills paper introduces the rubric into the accounting education area and helps to establish the interconnectivity of improved accounting education and rubric development. Kealey, Holland and Watson (2005) provided further evidence of a distinct connection between students possessing general critical thinking skills and success in accounting. Students lacking the ability to think "critically" are at much higher risk of performing poorly in the first accounting course than students who enter the course with elemental skills in critical thinking. While other factors are involved, their paper does highlight the developing theory of student preparedness as a precursor to success in accounting.

Using various techniques to stimulate critical thinking responses continues to be a goal within the university system and more recently, based on changes in accounting practices, in accounting courses offered through School of Businesses. Critical thinking, however, is difficult to define and much confusion surrounds the teaching of critical thinking skills. In 1987 a panel of experts gathered to generate a consensus statement regarding critical thinking and the ideal critical thinker. The following statement comes from the Delphi Report.

> *. . . The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit . . . (Facione, 1990, p. 2)*

For business educators, the goal is to work towards this ideal standard by establishing instructional practices that cultivate good critical thinking. Business educators have been attracted to critical thinking methods and approaches which produce employees who exemplify such dispositions and uphold these ideals. Paul and Elder (2001) profess that students need to learn to use critical thinking strategies which help them effectively think through complex problems encountered on the job and in daily life. This is done by identifying the logic of each task which includes the following elements of thought: 1) Identify goals and purposes; 2) Gather relevant information; 3) Formulate questions clearly and precisely; 4) Determine (and evaluate) assumptions; 5) Think through the implications of decisions; 6) Make logical and accurate inferences and interpretations; 7) Articulate clearly the concepts or ideas that are guiding their thinking; and 8) Consider alternate ways of looking at situations. The scoring rubric used in this research was developed using some of Paul and Elder's (2001) Universal Intellectual Standards: Clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness.

Traditional education methods dominate business education courses. Teaching tends to concentrate on presentational methods such as lecture. Students absorb information through listening to presentations made in the classroom and are expected to read the textbook and complete exercises. After several weeks of instruction, students are assessed on their knowledge of the content through a traditional test which assesses their knowledge of factual information and basic concepts through completing multiple choice items, true/false, and fill in the blank exercises. These types of questions are called "selected response" questions. These questions are easy to score because there is a right and wrong answer.

Students also need to indicate that they understand and can apply their learning. "Constructed response" assessments include essays and performance assessments requiring students to construct a product or perform a demonstration to show what they understand (Arter and McTighe, 2001). These constructed response measurement procedures require students to generate rather than select responses (Popham, 2002). Typically, in traditional classrooms, application of learning is assessed using essay questions or problem solving questions on an examination.

The difficulty in evaluating constructed responses is that sometimes the criteria used for evaluation are unclear to students. Students are either left to their own devices to figure out how they will be judged or students must wait until the test is returned. Even after the test is returned, the evaluation criteria are sometimes unclear. Students need to understand the criteria by which their work will be judged. If students know the criteria in advance, they have clear targets and clear goals which can improve their work and enhance their learning (Arter and McTighe, 2001).

Current pedagogical scoring tools which include criteria for determining the quality of student performance are called scoring rubrics, or simply "rubrics." According to Wiggins (1998), rubrics tell potential performers and judges which elements of performance matter most and how the work to be judged will be distinguished in terms of relative quality. Rubrics typically contain a scale of possible points and provide descriptors for each level of performance. These descriptors

contain criteria which describe conditions that any performance must meet to be successful and they define what meeting the task requirements entails (Wiggins, 1998).

This research is intended to assess whether scoring rubrics used in a management accounting course improves student performance. In this research the following hypothesis was proposed:

H1: Students who received the scoring rubric will perform better on subsequent exams than students who do not receive the scoring rubric.

METHOD AND DESIGN

Participants in the study were 60 students in two sections of the Introductory Managerial Accounting course offered during the spring semester at a small public university.

Students were traditional in nature representing a range of academic abilities and an ethnically diverse population. All students in the College of Business were required to take this course. Several other majors in the university such as Agriculture also required this introductory managerial accounting course. All students had taken an introductory financial accounting course prior to enrolling in the course.

Both classes met on Tuesday and Thursday for one hour and 15 minutes. The control group met at 11:00 a.m. and the treatment group met at 2:00 p.m. Course material followed typical AACSB (Association for the Advancement of Collegiate Schools of Business) guidelines for content in an introductory managerial accounting course.

The same instructor taught both sections. Courses were mainly lecture format with regular break out sessions. During break out sessions students worked in groups of 3-5 on problem solving exercises. An introductory managerial accounting textbook was utilized as the primary reading material.

Students were evaluated on four (4) examination or "exam" scores, quizzes, homework, and participation. Exams represented the material covered in class and in the textbook and were combination multiple choice and problem solving exercises. Quizzes were essay in nature designed to elicit critical thinking skills. Unannounced quizzes were given randomly throughout the semester involving hypothetical scenarios created to generate critical thinking skills for students. Homework was assigned after each class period and homework problems were in alignment with the current material covered in class.

The two sections were divided with 38 students in the control group and 22 students in the treatment group. Random assignment determined treatment and control group sections.

For the first three weeks of the semester, both treatment and control groups received the same instruction and assignments by the instructor. At the end of the first three weeks, the instructor administered identical exams to both groups to establish a baseline. Exam one was used as the baseline for comparison. Following exam one, the rubric was introduced to the treatment group.

A copy of the rubric was distributed to individual students and the instructor had a copy of the rubric on the overhead projector. The purpose for the rubric was explained along with descriptions of the criteria. Criteria included: clarity, relevance, precision, and accuracy. The scoring scale ranged from 0-10 points for each criterion. Figure I contains a copy of the accounting rubric. Following exam one, the instructor took a sample of one of the problems and reviewed the problem using a "think aloud" to model how to utilize the rubric criteria. The purpose of this demonstration was to encourage and teach students how to use the rubric to develop critical thinking skills.

To reinforce the elements on the rubric, the instructor reviewed criteria on the rubric relative to the homework assignment. This occurred six (6) times during the semester. The instructor would put up the rubric matrix and review the criteria with the students. The second time the rubric criteria was mentioned, a model example was reviewed and scored for the students. During the fourth time, a top score from a student in the control group was used in the treatment class to go over the rubric grading criteria. This took approximately 5-10 minutes to review the rubric criteria and approximately 15 minutes to review the criteria with an actual scoring example.

The control group was not introduced to the rubric and continued to work in the same manner as both groups during the first three weeks in the course. All other instructional methods remained the same for both groups. At the end of the semester the treatment group participated in a qualitative survey. Sample survey questions were: Have you ever used a rubric before? Did you use the rubric in this class? What impact do you feel the rubric had on your learning in this class? In your opinion, what were some of the benefits and drawbacks of using the rubric?

The dependent variables were the students' percentage test and quiz scores. Exams were a combination multiple choice and problems/essays. The independent variable in this research was the scoring rubric. The control group did not receive instruction on the scoring rubric. Students in the treatment group were shown the scoring rubric prior to the second test.

SCORING RUBRIC DEVELOPMENT

The first step in developing the rubric was to identify questions which could be assessed using a scoring rubric on the chapter tests. The constructed response items, or open ended problem solving essay questions, were selected. Based on previous experience and knowledge with problem solving questions on tests, the features of the quality performance criteria were identified. Specific language for each criterion was developed using Paul and Elder Universal Intellectual Standards (2001). These intellectual standards check the quality of reasoning about a problem, issue or situation. A few samples of student work were used to refine the scoring rubric. Figure I. shows the rubric used with the treatment group.

Figure 1. Accounting Rubric			
Problem Solving Descriptors	**0**	**5**	**10**
1) Clarity (Do you understand the problem? Can you start the ***set-up***?)	Main point was missed.	Main ideas restated but missing one or more elements.	Example taken from illustration which clearly identified the critical elements.
2) Relevance (Are you able to identify relevant aspects of the problem? Can you ***set-up*** the problem sequentially?)	Irrelevant information used to determine solution.	Steps shown in a sequential manner.	All relevant information presented. Irrelevant information disregarded.
3) Precision (Did you ***label*** it precisely? Is the ***set-up*** easy to follow?)	Labels not shown, vague labels.	Some labeling shown, but gaps noticeable.	Correct labels used (connected solution to problem).
4) Accuracy (Is the answer correct?)	Completely inaccurate answer given.	Answer that is inaccurate due to minor miscalculation given.	Completely accurate answer given.
5) Breadth (Is there other information you should consider?)	No attempt made.	Some additional information included, attempted to elaborate but used information inappropriately. Different situations used but inaccurately applied.	Additional information included/used to solve problem. Problem was elaborated by explaining the next step. Problem applied in different situations.

STATISTICAL ANALYSIS AND RESULTS

Correlation analysis and a regression model were developed based on the previously mentioned hypothesis. Changes in students exam scores were the main variable analyzed. The regression model looked at students' final exam score as a function of their change in performance from exam one through exam three. Tables I and II show the correlations between the final exam score and changes in exam score from the first to second exam and the second to third exam for the control and treatment group.

Table I.: Correlation between exam scores (Treatment Group)			
	Final exam	Change in Score	Change in Score
		Exam I to II	Exam II to III
Final exam	1.00000	-0.18701	-0.16817
		1.4047	0.4544

Table I.: Correlation between exam scores (Treatment Group)			
	Final exam	Change in Score	Change in Score
		Exam I to II	Exam II to III
Change in score			
Exam I to II	-0.18701	1.00000	0.49784
	1.4048		0.0184
Change in score			
Exam II to III	-0.16817	0.49784	1.00000
	0.4544	0.0184	
N=22			
Number underneath correlation is probability under null hypothesis			

Table II.: Correlation between exam scores (Control Group)			
	Final exam	Change in Score	Change in Score
		Exam I to II	Exam II to III
Final exam	1.00000	0.35015	0.31110
		0.0363	0.0648
Change in score			
Exam I to II	0.35015	1.00000	0.59294
	0.0363		0.0001
Change in score			
Exam II to III	0.31110	0.59294	1.00000
	1.648	0.0001	
N=36			
Number underneath correlation is probability under null hypothesis			

For the control group, both change in exam scores are correlated to the final exam score and to each other at the .10 to .001 levels (Table I). For the treatment group, the only significant finding was the relationship between the changes in exam score from exam I to exam II to the change in exam score from exam II to exam III. This was significant at the .05 level.

The regression results for the model "Final Exam Score = Intercept + change1 + change 2 + error" for the control group and the treatment group respectively. The control group regression model F-value of 2.67 is significant at the .10 level, i.e. the larger the change in improvement from

exam I to exam II and exam II to exam III, the higher the final exam score. The t-values for the individual parameters, however, do not show significance for either independent variable to the final exam score (Change1 T value 1.27, Change 2 T value 0.80). The results for the treatment group's regression model show no significant relationship between the dependent variable and the independent variables, either as a group or individually (F-value 0.42, Change1 t-value -0.53 and Change2 t-value -0.39).

Table III : Individual t-tests between control and treatment groups for changes in exam scores

Variable	DF	T-value	Pr > |t|
Change1	40.9	1.92	0.0622
Change2	36.5	-0.23	0.8196
Change3	42.7	-0.14	0.8878
Satterthwaite unequal variance method reported			

Table I shows the average change in exam grade from first exam to second, from second to third, and from third to the final. The average change difference between treatment and control group is what change1 (exam I to exam II), change2 (exam II to exam III) and change 3 (exam III to final) show. The treatment group performed worse as a group in their change in exam score (at the.10 level) from exam I to exam II. After that, however, no change difference was noted.

Further analysis in Table III show individual t-tests between the control group and treatment group changes in exam scores from exam I to II and II to III and III to IV (final exam score). The change in score from exam I to exam II is significantly higher for the control group than the treatment group, at the .10 level. The change in score from exam II to exam III or exam III to IV, however, show no significant relationship between the control group and the treatment group. Further discussion on the implications of these findings follows.

DISCUSSIONS AND LIMITATIONS

One of the limitations of this research was the small sample size. In the treatment group there were only 22 participants while the control group had 38. Ideally, more participants in the treatment group is desirable.

Another limitation is that the treatment group entered the research study with a higher degree of knowledge in management accounting. As evidenced in the examination I scores, students in the treatment group possessed greater competency in the subject knowledge than the control group.

The reliability of the scoring rubric used may have been influenced by the design of the rubric. Typical scoring ranges from 3 to 7 score points. The number of score points for a rubric depends on the purpose of the rubric and the nature of what is to be assessed. The score point range used in this research was 10 points in order to facilitate grading on the exam and calculating final grades for the semester. It may be that with too many score points for the rubric made it difficult for students to distinguish the difference between score points.

When using a scoring rubric, evaluative judgments are made, hence, student work samples and anchor papers (what a score point "2" looks like) are needed to increase consistency. Student work samples were used once, along with a model work example; however, anchor papers may clearly show the different levels of quality on the scoring rubric. In the qualitative survey, students reported that the rubric "was too cluttered . . . make it a checklist". Other comments were [the rubric] was "too outlined" and "Not easily accessible, would be easier to remember if it was kept in a condensed version." Perhaps two independent raters should have been used to acquire consistent scores, thus, increasing reliability.

Initially students were puzzled by the rubric. They were unaware of the purpose for using a scoring rubric and did not understand how to use the rubric. One comment from a student was "make it integral from the outset, not when we mess up." It was apparent that students were apprehensive of the usefulness of the scoring rubric and it caused some uncertainty about how to use the scoring rubric effectively in a managerial accounting setting. Data collected in the qualitative survey indicated that students varied in their experience with rubrics and their perceived benefit of the scoring rubrics.

A survey was taken by the students who responded based on their experiences with scoring rubrics and how they used it in the treatment group's class. 62.5% of the students who completed the questionnaire reported that they had never used a rubric prior to the research study. This is quite a substantial percentage of the students in the class. This shows that for the most part, students were unfamiliar with the purpose for a scoring rubric and could not build on prior knowledge to apply the use of the scoring rubric in the management accounting course. The survey also indicates that 50% of the students reported said that they used the rubric in the management accounting class. If only 50% of the students actually used the scoring rubric, then the independent variable, the scoring rubric, may not have been very effective in accounting for the differences between the control and treatment groups.

Of the 37.5% that did have experience only 12.5% reported using the scoring rubric to assist them. Students' prior experiences with the use of scoring rubrics may have helped or hindered their perceived benefit of the scoring rubric and affected their use of scoring rubrics in the study. One student reported that he or she did not use the scoring rubric because "I think the concept of the rubric was good, but it's kind of hard to study it to actually learn how to implement it." Some of the perceived benefits were: "it helped me to understand . . . it helps you to organize everything" [it helped] "answer all problems as completely as possible" and "written clearly."

Prior research indicates that while rubrics are necessary, they are insufficient for good assessment and feedback. "To know what the rubric's language really means, both the student and judge need to see examples of work considered persuasive or organized" (Wiggins, 1998, pg. 158). Students need to know the purpose for using the rubric and how to use the rubric as well as see the relevance of the rubric. As part of instruction students need to be made aware of what it means to meet these criteria and the purpose for using the rubric.

Another consideration which may have affected student use of the rubric was difficulty with the critical thinking terminology used to define the criteria in the rubric. According to Moskal (2003), "the criteria set forth within a scoring rubric should be clearly aligned with the requirements of the task and the stated goals or objectives" (pg. 2). The critical thinking terminologies which were used as the criteria for evaluation were: clarity, relevance, precision and accuracy. These specific definitions may have posed a problem and confusion for students. Perhaps, if students better understood or used the critical thinking terminology as part of the everyday instruction, they could have more effectively applied the knowledge on their examinations.

Despite all the limitations mentioned above, 54% of the students surveyed reported a positive impact upon their learning by using the scoring rubrics in the management accounting course. 18% of them reported not much of an impact and 27% said that the rubric had no impact on their learning in the course.

FUTURE RESEARCH

Students seemed to be confused by the scoring rubric and did not have "buy-in" or appreciate the benefits of using the scoring rubric. Further research may identify the benefits of developing a scoring rubric that is generated with student input. Qualities of effective assessment include involving students in developing assessment standards and criteria. This could address student "buy in" and help students to value the purpose behind using a rubric. Perhaps the increased time spent on rubric development would also help students understand how to apply the scoring rubric.

The assessment task used in this research was a traditional "paper and pencil" type of examination. The scoring rubric was used to evaluate the open-ended items on the examinations and quizzes. Perhaps an assessment task which falls into the category "performance task" which is more open ended in nature, such as a final group presentation for a simulation project, is better aligned with the scoring design of the rubric rather than the constructed response item on an examination or quiz.

CONCLUSION

There is indication that students were trying to use the rubric to deepen their understanding of accounting concepts. Unfortunately, the results showed that students' performance in the

treatment group decreased relative to performance by the students in the control group immediately after being exposed the scoring rubric. After the second exam, students in the treatment group did not see immediate success to use the scoring rubric. The emphasis for using the rubric seemed to diminish, and students did not improve or worsen their relative scores compared to the control group.

The initial design of the rubric may have misled students to believe that the rubric was the solution to understanding the accounting concepts rather than a tool to facilitate learning. They may have been disappointed with the results of the second exam after trying to use the rubric; therefore, some of the students may have reduced the emphasis upon using the rubric. The scoring rubric used was a "generic" rubric to highlight particular criteria which would enable students to understand how to critically approach answering open ended accounting problems not the "answers" to the problems. Indications are that there was a design flaw in the study. It is our belief that students were not clear on the purpose and utilization of the scoring rubric and were unclear about the critical thinking vocabulary. In the present study, we used critical thinking terminology such as clarity, relevance, precision, accuracy, breadth. Our next step is to redesign the development of the rubric which we hope will lead to more efficiently utilized scoring rubric by the students. One of our objectives in the next study is to increase ownership of the rubric by having students actively participate in developing the rubric as a class. These revisions should reduce the confusion surrounding the use of the rubric. To that end, our future research will explore those possibilities.

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INTEGRATING ICT INTO HIGHER EDUCATION: A STUDY OF ONSITE VS ONLINE STUDENTS' PERCEPTIONS

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ABSTRACT

For the past two decades, information and communication technologies (ICT) have transformed the ways professors teach and students learn. The purpose of this study is to investigate the perceptions of onsite students (hybrid or blended mode) and of those taking the same courses on the Internet (online mode). To guide the study, a moderator-type theoretical research model was developed, out of which nine hypotheses were formulated. The model was tested in a field experiment. To collect data, we used a multimethod approach, that is, a Web survey involving open- and closed-ended questions. The sample was formed of 313 onsite and online students from eight undergraduate and graduate courses offered at the Faculty of Administration of a large Canadian university. The quantitative data analysis was performed using a structural equation modeling software, that is, Partial Least Squares (PLS); the qualitative data were analyzed following a thematic structure using QSR NVivo. In this paper we present a summary of the quantitative results (closed-ended questions) supported and enriched by the qualitative results of the students (open-ended questions).

INTRODUCTION

For the past two decades information and communication technologies (ICT) have transformed the ways professors teach and students learn. Some professors have actively shifted the information flow from a face-to-face mode (student listening, onsite presence) to an entirely online mode (student reading, onsite non presence); that is, they have designed courses and curricula offered completely online using the Internet and the Web. Others have developed the hybrid or blended mode (a combination of face-to-face and online activities; less student onsite presence, ongoing use of ICT both inside and outside the classroom). Hence, knowledge acquisition and dissemination have been reconceptualized, and new methods developed in order to satisfy the

rapidly evolving needs of a population of individuals in search of more knowledge, more and more heterogeneous, in a geographically distributed environment.

In today's global economy, organizations (including universities) who want to survive and strive to stay highly competitive must continually innovate at the human, material, and technological levels. Alavi and Leidner (2001) pointed out that, during the past decade, universities and corporate training facilities have at an increasing rate invested into ICT to improve education and training. Marshall (2002) added that actual classrooms are more and more enriched by technology. Further, Giddens (1999) argued that one of the more important functions of the university is to allow people to play a significant role in today's new economy. Thus, universities, faculties, and professors are currently looking for ways to improve teaching and curricula, as well as develop new modes capable of satisfying the actual and future needs of organizations and societies. Out of their recursive attempts, the four fundamental questions often revisited are the following: (1) What are we teaching? (2) What should we be teaching? (3) What is the best way to teach it (pedagogy)? and (4) What are the impacts on students?

The study described in this paper aims at helping universities to stay highly competitive in the current global shift in higher education, an approach that is innovative in its exploration of new directions as regards the last two above-mentioned questions related to pedagogy and student impact. We examine the relation between students' learning outcomes (undergraduate and graduate students) and learning environments integrating ICT. Specific relations between student onsite presence and student online presence are examined as to identify their effect on the basic relation between learning environments and students' learning outcomes. In particular, this study compares onsite technology-rich hybrid or blended learning environments and online learning environments. Moreover, this study brings to the foreground several moderator variables related to students' characteristics (psychology) and professors' pedagogy in order to better understand the relation between learning environments and students' learning outcomes.

Building on the two last questions raised previously, this innovative study focuses on the following three research questions: (1) Are there differences between learning outcomes of onsite students and of those taking the same courses online? If so, which ones? (2) Do students' characteristics influence the relation between learning environments and students' learning outcomes, and are there differences in this influence between onsite and online students? If so, which ones? and (3) Does professors' pedagogy influence the relation between learning environments and students' learning outcomes, and are there differences in this influence between onsite and online students? If so, which ones?

This paper builds on a framework suggested by Fillion (2004) in the conduct of hypothetico-deductive scientific research in organizational sciences, and it is structured as follows. First, the theoretical background supporting the study is examined; second, the methodology followed to conduct the study is presented; third, the results of the study are reported; and the paper ends with a discussion of the results and recommendations for further research.

THEORETICAL BACKGROUND

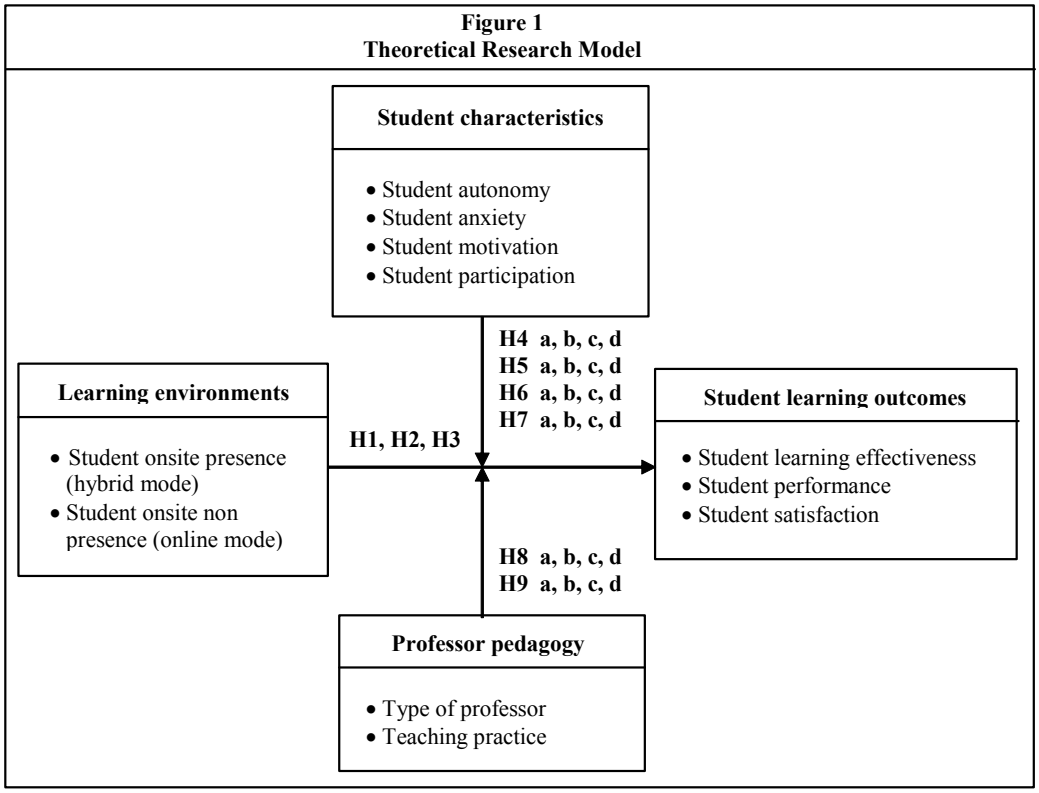
This study is theoretically-based on Leidner and Jarvenpaa's, and Phipps and Merisotis' key research works. On the basis of three case studies, Leidner and Jarvenpaa (1993) developed a theoretical research model for other researchers to test in future studies. And, in a literature review, Leidner and Jarvenpaa (1995) inventoried numerous educational variables to be examined in future studies according to different scenarios using ICT. Several of the variables suggested by these authors are used in this study.

In their literature review on distance learning effectiveness in the 1990's, Phipps and Merisotis (1999) pointed out that the studies that compared the distance ICT-based learning environments with conventional learning environments (face-to-face without ICT use) fall into three categories: (1) students' results (performance); (2) students' attitude toward learning in these two types of environments; and (3) students' general satisfaction. We use these three categories as dependent variables in this study.

Of the 8,110 papers over a period of 15 years that were published in the journals and reviews examined, Chin et al. (2003) found only 74 that contained moderator variables. Moreover, several IS dominant theories (e.g., Davis' 1989 Technology Acceptance Model (TAM) and Doll and Torkzadeh's 1991 user participation/involvement model; quoted in Chin et al., 2003, p. 192) as well as the streams of research that have extended these models (e.g., Carswell & Venkatesh, 2002; Davis & Venkatesh, 2004; Hartwick & Barki, 1994; Venkatesh & Davis, 2000; Venkatesh & Speier, 1999; Venkatesh & Speier, 2000; Venkatesh & Johnson, 2002; and Venkatesh et al., 2003) suggest that moderator variables are an important avenue of future development. Furthermore, numerous researchers within the IS field have suggested that models using moderator variables be tested (Anderson, 1985; Doll & Torkzadeh, 1989; Ives & Olson, 1984; McKeen et al., 1994; Sambamurthy & Zmud, 1999; Tait & Vessey, 1988; quoted in Chin et al., 2003, p. 192) as have researchers in other fields (Chin et al., 2003). Hence, most of the variables identified by Leidner and Jarvenpaa (1993, 1995) are used as moderator variables in this study. The resulting theoretical research model is shown in Figure 1.

Figure 1 shows that the theoretical research model that guide the study is articulated around an independent construct, learning environments, a dependent construct, student learning outcomes, as well as two moderator constructs, student characteristics and professor pedagogy. In the next subsections, these constructs and their variables are defined, and the research hypotheses formulated.

Figure 1
Theoretical Research Model



Learning Environments

The construct of learning environments is made up of two variables, that is, student onsite presence or hybrid mode (e.g., the wired classroom and the networked classroom) and student onsite non presence or online mode (e.g., Internet- or Web-based course). In the first learning environment, the wired classroom environment, students come to class each week during the semester and use ICT (computer, e-mail, chat, discussion forum, Web browser, Internet-based software, videoconferencing system, etc.) both inside and outside the classroom. Typically, in the wired classroom, students come to class with their own laptop computer. In the second learning environment, the networked classroom environment, students come to class less often, sporadically or at set times (generally five or six times) during the semester and use the ICT mentioned above for communication and collaborative purposes both inside and outside the classroom. In contrast, in the third learning environment, the Internet- or Web-based environment, students do not come to class during the semester but use the same ICT from their home or other space where they have Internet access. It

is, thus, the level of students' onsite presence that primarily distinguishes the three learning environments selected for this study.

Student Learning Outcomes

Student Learning Effectiveness

Student learning effectiveness refers to elements such as increase in critical thinking skills, increase in ability to integrate facts, ability to critically analyse issues, learning to interrelate important topics and ideas, and increase in understanding of basic concepts (Alavi, 1994). On the basis of their extensive literature review of the 1990's on distance learning, Phipps and Merisotis (1999) concluded that students' learning is as effective at a distance as in conventional education ("the no significant difference phenomenon"). Further, in their report on a large study conducted by the Sloan Consortium, involving more than 1,100 US colleges and universities, Allen and Seaman (2004) drew the same conclusion. Thus, the findings of these authors and the fact that, in this study, onsite students were given the same permanent access to ICT as those online (in order to compare their learning) lead us to think that learning will be more effective for onsite students.

H1: *Students whose onsite presence is required to take courses (hybrid mode) find learning more effective than those whose onsite presence is not required (online mode).*

Student Performance

As all researchers who have examined student performance (e.g., Fillion et al., 1999; Piccoli et al., 2001; and Scheck et al., 1994), this study defines performance by students' grades (assignments and exams). According to Phipps and Merisotis (1999), the bulk of literature of the 1990's came to the conclusion that learning results of students using distance learning technologies were as good as those of students using conventional education. A review of 355 comparative studies carried out by Russell (1999) also showed no significant difference on students' performance between technology-supported environments and conventional ones ("the no significant difference phenomenon"). In addition, Allen and Seaman's (2004) report on a large study conducted by the Sloan Consortium indicated that, in most of these educational institutions, learning results of students taking the courses online were similar or higher than those of face-to-face students. Thus, the findings of these authors and the fact that, in this study, onsite students were given the same permanent access to ICT as those online (in order to compare their performance) lead us to believe that performance will be better for onsite students.

H2: *Students whose onsite presence is required to take courses (hybrid mode) perform better than those whose onsite presence is not required (online mode).*

Student Satisfaction

Student satisfaction refers to elements specific to the feeling of well-being experienced by students in the course, as much on the technical point of view as on the pedagogical one (Hobbs & Osburn, 1989). In their extensive literature review of the 1990's on distance learning, Phipps and Merisotis (1999) observed that most studies inventoried came to the conclusion that distance learning using ICT compared favorably to conventional education and showed a high level of student satisfaction ("the no significant difference phenomenon"). Furthermore, in a recent report on a large study conducted by the Sloan Consortium, Allen and Seaman (2004) pointed out that most of these educational institutions claimed that students taking online courses were equally satisfied as their peers taking face-to-face courses. Thus, the findings of these authors and the fact that, in this study, onsite students were given the same permanent access to ICT as those online (in order to compare their satisfaction) lead us to think that satisfaction will be higher for onsite students.

H3: *Students whose onsite presence is required to take courses (hybrid mode) are more satisfied than those whose onsite presence is not required (online mode).*

Student Characteristics

Student Autonomy

Student autonomy refers to elements such as the development of good study habits, time management skills, autonomous work habits, a great sense of personal responsibility (Wilson, 1990), initiative and judgement in carrying out the work, and independence and freedom in how the work gets done (Hackman & Oldham, 1975). Hiltz and Turoff (1997) noted that the networked classroom allowed an increase in student autonomy (students can choose the time, place, and pace of their learning). Similarly, Urban-Lurain and Weinshank (2000) observed an increase in student autonomy in the wired classroom. Student autonomy has not been extensively studied in the three learning environments taken into account here. And, to our knowledge, it has not been studied as a moderator variable. Thus, we believe that students' autonomy will have an influence on the relation between learning environments and their learning outcomes, and that this influence will be more pronounced for students taking the courses online.

H4: *Students' autonomy has an influence on the relation between learning environments (students' onsite presence and non presence) and their learning outcomes ((a) learning effectiveness; (b) performance; and (c) satisfaction), and (d) this influence is more pronounced for students whose onsite presence is not required*.

Student Anxiety

Anxiety is a pervasive emotion frequently experienced by students (Fraser et al., 1983). The term anxiety may be taken simply to mean the experience of dread and foreboding based on some diffuse or specific expectation of harm rather than on an obvious external threat (Sieber et al., 1977). In their study involving 116 classes of undergraduate students, Fraser et al. (1983) concluded that the weakest levels of anxiety were found in classes characterized by, among others, greater student participation, clarity of rules to follow, and less control on the part of the professors. But their study was conducted in conventional environments (face-to-face without ICT use). On the other hand, Jegede and Kirkwood's (1992) study in a distance learning context indicated that students experienced a very high level of anxiety and were more anxious concerning their studies at the end of the semester than at the beginning. In the context of student autonomy above, student anxiety has not been extensively studied in the three learning environments taken into account in this study. And, to our knowledge, it has not been studied as a moderator variable. Thus, we are led to think that students' anxiety will have an influence on the relation between learning environments and their learning outcomes, and that this influence will be more pronounced for students taking the courses online.

H5: *Students' anxiety has an influence on the relation between learning environments (students' onsite presence and non presence) and their learning outcomes ((a) learning effectiveness; (b) performance; and (c) satisfaction), and (d) this influence is more pronounced for students whose onsite presence is not required*.

Student Motivation

Motivation is defined as student interest in the course and the work invested to prepare for it. In the eight-phase learning process proposed by Gagné (1975), motivation is a highly important factor, perhaps the most important. On the basis of their first experiences in the networked classroom, Riel (1993) and Harasim et al. (1995) reported an increase in student motivation. Hiltz and Wellman's (1997) study also showed an increase in students' motivation in the same type of environment. Blyth (2000) observed an increase in student motivation, but in the Internet and the

Web environment. In the context of student anxiety and autonomy above, student motivation has not been extensively studied in the three learning environments taken into account in this study. And, to our knowledge, it has not been studied as a moderator variable. Thus, we believe that students' motivation will have an influence on the relation between learning environments and their learning outcomes, and that this influence will be more pronounced for students taking the courses online.

H6: *Students' motivation has an influence on the relation between learning environments (students' onsite presence and non presence) and their learning outcomes ((a) learning effectiveness; (b) performance; and (c) satisfaction), and (d) this influence is more pronounced for students whose onsite presence is not required*.

Student Participation

A student who is participating in the course is viewed as making suggestions, showing attention and interest, providing information to other students, and asking other students for their thoughts or opinions (Green & Taber, 1980). Students' involvement and participation are seen as being essential in several studies that look into different distance learning environments (Alavi et al., 1995; Leidner & Jarvenpaa, 1993; Webster & Hackley, 1997). In the networked classroom environment, Hiltz (1990) as well as Hiltz and Wellman (1997) noted an increase in student participation. In the Internet and the Web environment, Arbaugh's (2000a, 2000b) studies indicated a higher participation of females than males. And two recent studies showed a significant influence of students' participation on their learning outcomes (Rovai & Barnum, 2003; Webb et al., 2004). Nevertheless, similar to student anxiety, autonomy, and motivation above, student participation has not been extensively studied in the three learning environments taken into account in this study. And, to our knowledge, it has not been studied as a moderator variable. Thus, we are led to think that students' participation will have an influence on the relation between learning environments and their learning outcomes, and that this influence will be more pronounced for students taking the courses online.

H7: *Students' participation has an influence on the relation between learning environments (students' onsite presence and non presence) and their learning outcomes ((a) learning effectiveness; (b) performance; and (c) satisfaction), and (d) this influence is more pronounced for students whose onsite presence is not required*.

Professor Pedagogy

Type of Professor

Type of professor refers to elements such as professor organization, impartiality in grading, general attitude, knowledge about the subject taught, presentation skills (Hiltz, 1990), use of a variety of learning activities, and use of technology in a competent manner (Thach & Murphy, 1995). Clearly, a professor's attitude has a great influence on students' interest in the course. So it is not very surprising that a professor can accelerate a student's learning rate (Joyce & Weil, 1996). In the Internet and the Web environment, Barnes et al. (1999) reported a clear improvement of teaching success when institutional support was significant and professors were completely involved in this type of course. However, their study was not conducted in a course entirely taught online, but in a course enriched by the use of the Internet and the Web. Obviously, type of professor has not been extensively studied in the three learning environments taken into account in this study. And, to our knowledge, it has not been studied as a moderator variable. Thus, we believe that type of professor will have an influence on the relation between learning environments and students' learning outcomes, and that this influence will be more pronounced for onsite students.

H8: *Type of professor has an influence on the relation between learning environments (students' onsite presence and non presence) and students' learning outcomes ((a) learning effectiveness; (b) performance; and (c) satisfaction), and (d) this influence is more pronounced for students whose onsite presence is required*.

Teaching Practice

According to Chickering and Gamson (1987), a professor having a good teaching practice encourages contact between students and faculty, develops reciprocity and cooperation among students, uses active learning techniques, provides prompt feedback, emphasizes time on task, communicates high expectations to students, and respects diverse talents and ways of learning of students. Laferrière et al. (1999) pointed out that new learning technologies question some social practices established in higher education, particularly the student file management and professor performance in the classroom. Further, Kozma and Schank (1998) argued that it is essential for education to focus on community and innovative teaching practices, and to be supported by technological resources as they become available. Teh's (1999) study showed an evolution of the professors' innovative ability in their teaching practice. However, this study was not conducted in a course entirely taught online, but in a course enriched by the use of the Internet and the Web. In the networked classroom, Hiltz's (1990) study indicated that students having experienced high levels

of communication with other students and their professor judged learning outcomes of virtual courses superior to those of conventional courses. Obviously, teaching practice has not been extensively studied in the three learning environments taken into account in this study. And, to our knowledge, it has not been studied as a moderator variable. Thus, we are led to think that teaching practice will have an influence on the relation between learning environments and students' learning outcomes, and that this influence will be more pronounced for onsite students.

H9: *Teaching practice has an influence on the relation between learning environments (students' onsite presence and non presence) and students' learning outcomes ((a) learning effectiveness; (b) performance; and (c) satisfaction), and (d) this influence is more pronounced for students whose onsite presence is required*.

In the next section of the paper, we describe the methodology followed to conduct the study.

METHODOLOGY

Sample and Data Collection

The theoretical research model depicted in Figure 1 was tested in a field experiment at the Faculty of Administration of a large Canadian university. The sample was composed of students of five undergraduate and three graduate courses, which were offered at the same university in the two modes taken into account in this study: hybrid mode and online mode. Students were not randomly assigned, that is, for each course selected, the students were asked to participate in the study. The study was spread over two semesters, fall and winter, and in each semester four courses were studied. Each course had to meet the four following criteria: (1) to use a similar set of ICT in the two modes; (2) to be taught by a different professor in the two modes; (3) to have the same course content in the two modes; and (4) to have, as much as possible, a similar group size in the two modes. In addition, each course was selected so that groups of students in the two modes were the most homogeneous possible in terms of age and ICT experience. Finally, the course selection was made in order to cover a large area of disciplines offered at the Faculty of Administration of the university chosen for the study. Thus, the sample of the study consisted of 841 students, 438 (242 in fall and 196 in winter) in hybrid mode courses and 403 (198 in fall and 205 in winter) in online mode courses.

Three weeks before the end of each semester of the data collection, students were asked to fill out an electronic survey on a Web site. To that end, an e-mail, including a URL and a password allowing access to the electronic survey, was sent to students. As follow up, ten days after the students had been asked to fill out the survey on the Web site, an e-mail was sent to students relating

the importance of filling out the electronic survey for the advancement of scientific knowledge on integration of ICT into higher education. Finally, a few days later, all professors were asked to relay the importance of the study to students during class or in the discussion forums of the online courses.

In the fall semester, 174 students (113, hybrid mode; 61, online mode) out of 440 completed the electronic survey for a response rate of 40%; in the winter semester, 139 students (70, hybrid mode; 69, online mode) out of 401 completed the electronic survey for a response rate of 35%. Overall, 313 students (183, hybrid mode; 130, online mode) out of 841 completed the electronic survey on the Web site for a global response rate of 37%. And, of these 313 students, 262 (156, hybrid mode; 106, online mode) completed the qualitative section (open-ended questions) of the Web survey for a response rate of 84%.

Data Analysis

The quantitative data analysis was performed using a structural equation modeling software, that is, Partial Least Squares (PLS-Graph 3.0). To ensure the stability of each model developed in order to test the research hypotheses, we used the PLS bootstrap resampling procedure with an iteration of 100 sub-sample extracted from the initial sample (313 students). Some analyses were also performed using the Statistical Package for the Social Sciences software (SPSS 11.5). As for the qualitative data analysis, it was carried out using the Qualitative Solutions & Research NVivo software (QSR NVivo 2.0). We performed thematic analyses on the qualitative data of students; the results are presented on the form of within-case/cross-case matrix as suggested by Miles and Huberman (1994). They follow.

RESULTS

Test of Hypotheses

To test hypotheses involving independent and dependent variables (H1-H3), we developed a PLS model similar to those of Limayem and DeSanctis (2000), Limayem et al. (2002), and Yoo and Alavi (2001). And to test hypotheses involving moderator variables (H4-H9), we developed several PLS models according to the Chin et al.'s (2003) and Carte and Russell's (2003) procedures. We used PLS bootstrap resampling procedure with an iteration of 100 sub-sample extracted from the initial sample (313 students) to ensure the stability of each of these models. Table 1 presents a summary of the test of hypotheses.

Table 1: Summary of the Test of Hypotheses		
Hypotheses	Results	Software (Sig.)
H1	Not supported	SPSS (0.692) PLS (0.022)
H2	Supported	SPSS (0.000****) PLS (0.228****)
H3	Not supported[a]	SPSS (0.006**) PLS (0.059**)
H4	(a) Supported (b) Not supported (c) Not supported (d) Supported	PLS (-0.113*) PLS (0.056) PLS (-0.030) SPSS (0.000****)
H5	(a) Not supported (b) Supported (c) Not supported (d) Not supported[a]	PLS (0.049) PLS (0.121**) PLS (0.000) SPSS (0.000****)
H6	(a) Not supported (b) Supported (c) Not supported[b] (d) Not supported[a]	PLS (-0.038) PLS (0.085*) PLS (-0.049=) SPSS (0.000****)
H7	(a) Supported (b) Supported (c) Supported (d) Not supported[a]	PLS (-0.155****) PLS (0.092**) PLS (-0.116**) SPSS (0.000****)
H8	(a) Not supported (b) Not supported (c) Not supported[b] (d) Not supported[a]	PLS (-0.045) PLS (0.054) PLS (-0.037=) SPSS (0.000****)
H9	(a) Not supported (b) Not supported (c) Not supported[b] (d) Not supported[a]	PLS (0.034) PLS (0.037) PLS (-0.034=) SPSS (0.000****)
[a] The test is significant, but the result is in opposition with which is formulated in the hypothesis. [b] The hypothesis is not supported given the level of significance of the test is too low ($p < 0.10$). = $p < 0.10$; *$p < 0.05$; **$p < 0.01$; ****$p < 0.001$.		

As shown in Table 1, onsite students performed better than those online ($p < 0.001$). On the other hand, online students were more satisfied than those onsite ($p < 0.01$). As for the moderator variables, autonomy had an influence on the relation between learning environments and student learning effectiveness ($p < 0.05$), and this influence was more pronounced for online students than

for those onsite ($p < 0.001$). Anxiety and motivation had an influence on the relation between learning environments and student performance ($p < 0.01$ and $p < 0.05$, respectively). And participation had an influence on the relation between learning environments and student learning effectiveness ($p < 0.001$), performance ($p < 0.01$), and satisfaction ($p < 0.01$). To summarize, the quantitative data analysis of the study provided very interesting and somewhat surprising results, particularly with regard to students' performance and satisfaction, as well as professors' pedagogy. The results of the qualitative data analysis follow.

Open-Ended Questions

In the first open-ended question of the Web survey students were asked to indicate what they appreciated the most in the course. Table 2 shows the themes extracted from the thematic analysis of the onsite and online students' responses. Boldfaced themes represent the interrelation between onsite and online students' responses.

We can see in Table 2 that the elements most appreciated by both onsite and online students (in order of priority) are professor, course usefulness, course material, ICT use, assignments, access to the course material on the Web site, discussion forums, prompt feedback, student/student and student/professor interaction, course structure, evaluations, nothing, participation, and collaboration. Thus, we can conclude that whether or not students come to class to take courses, when the same set of ICT is used, they appreciate the same elements related to these courses. And, among the elements they appreciate the most, professor and course usefulness in every day life and for their career are by far in the lead. Clearly, professors again take a predominant place in the formation of students at the beginning of the 21st century.

In the second question, students were asked to suggest ways of improving the course. The themes derived from the thematic analysis of the onsite and online students' responses are presented in Table 3. Boldfaced themes represent the interrelation between onsite and online students' responses.

The results in Table 3 show that the elements the students want improved in the course (in order of priority) are professor, presentation of the material, course material, assignments, amount of work, course content, nothing, evaluations, student/student and student/professor interaction, discussion forums, and WebCT use. Thus, we can conclude that whether or not the students come to class to take courses, when the same set of ICT is used, generally both sets of students suggest improving the same elements related to these courses. And, of the elements proposed, professor and presentation of the material are by far in the lead. As a result, whether the students take courses onsite or online, they place crucial importance on the professor and his/her teaching practice, as much to appreciate them when they are satisfied (as we have seen in the analysis of the first open-ended question previously in Table 2) as to criticize them when they are dissatisfied (as see in Table 3).

Table 2: The Elements Most Appreciated by Students in the Course When Using ICT			
Onsite Students (n = 156)		Online students (n = 106)	
Themes	n	Themes	n
Professor	62	Professor	**27**
Course usefulness	59	Course flexibility and schedule	24
Access to the course material on the Web site	19	Course material	20
Course material	16	Prompt feedback	19
ICT use	16	Assignments	17
Assignments	11	Discussion forums	16
Student/student, student/professor interaction	9	Course usefulness	15
Discussion forums	8	Distance course via the Internet	14
Nothing	4	ICT use	13
Course structure	4	Access to the course material on the Web site	8
Evaluations	4	Course structure	6
Participation	3	Student/student, student/professor interaction	4
Help	3	Evaluations	3
Onsite sporadic presence	2	Collaboration	1
Prompt feedback	2	Participation	1
Learning	2	Fulfillment	1
Collaboration	1	Buying some things on the Internet	1
Freedom of expression	1	Nothing	1

Table 3: The Elements that the Students Suggest to Improve in the Course When Using ICT			
Onsite students (n = 156)		Online students (n = 106)	
Themes	n	Themes	n
Professor	41	Course material	21
Presentation of the material	38	Professor	18
Course content	22	Nothing	15
ICT use	21	Presentation of the material	12
Amount of work	16	Assignments	11
Assignments	13	Course structure	10
Student/student, student/professor interaction	8	Evaluations	8
Evaluations	7	Web site	8

Table 3: The Elements that the Students Suggest to Improve in the Course When Using ICT			
Onsite students (n = 156)		Online students (n = 106)	
Themes	n	Themes	n
Course material	7	Amount of work	7
Course organization	7	Discussion forums	7
Classroom	5	Feedback	5
Discussion forums	4	Student/student, student/professor interaction	4
Nothing	4	Technical aspects	1
Group size	2	Course content	1
Attribution of the courses to professors	1	Correction of assignments and exams (corrector)	1
Discipline	1	WebCT use	1
WebCT use	1		

The third open-ended question of the Web survey asked students whether the onsite presence provided benefits to them with the integration of ICT into higher education, and why? The themes extracted from the thematic analysis of the onsite and online students' responses are regrouped in Table 4. Boldfaced themes represent the interrelation between onsite and online students' responses.

As shown in Table 4, students' responses to this question are regrouped in three categories: advantageous, non advantageous, and more or less advantageous. In the first category, the two themes that are by far in the lead are that onsite presence allows a better understanding of the material and promotes student/student and student/professor interaction. As for the second category, the two themes that are most evident are that the students can learn as well at home with a book and that ICT allow students to take courses at a distance without onsite presence. For the third category, there is no interrelation between onsite and online students' responses.

In the fourth open-ended question of the survey, students were asked to indicate the impacts of students' characteristics (autonomy, anxiety, motivation, and participation) into higher education integrating ICT. Table 5 shows the themes extracted from the thematic analysis of the onsite and online students' responses. Boldfaced themes represent the interrelation between onsite and online students' responses.

Table 4: To What Extent Students' Onsite Presence Is Advantageous When Using ICT			
Onsite students (n = 156)		Online students (n = 106)	
Themes	n	Themes	n
Advantageous	4	Advantageous	1
Allows a better understanding of the material	55	Allows a better understanding of the material	25
ICT complement the conventional classroom	26	It depends for which course and type of student	15
Promotes student/student and student/professor interaction	21	Promotes student/student and student/professor interaction	9
If professor is not just reading PowerPoint slides	11	If professor is not just reading PowerPoint slides	5
Allows social contact	9	Allows social contact	4
It depends for which course and type of student	8	Allows having more informations	4
No interest without onsite presence	6	Some students need onsite presence to succeed	2
Some students need onsite presence to succeed	1	Promotes student motivation	2
If the network is well functioning	1	It depends on undergraduate/graduate course	1
Brings a personal satisfaction	1	Promotes collaboration between students	1
		Onsite and online formation are complementary	1
Non advantageous	2	Non advantageous	11
We can learn as well at home with a book	14	ICT allow taking courses at a distance	12
Many students are playing with their laptop without listening to the professor	5	We can learn as well at home with a book	8
ICT allow taking courses at a distance	3	Much waste of time onsite	4
Professors have some difficulties to use ICT	1	Some professors do not have a good teaching practice	1
All the material is on the Web site	1		
Much waste of time onsite	1		
Neutral (more or less advantageous)	1	Neutral (more or less advantageous)	1
No time to go to class, too much work	1		

Table 5: The Impacts of Students' Characteristics When Using ICT			
Onsite students (n = 156)		Online students (n = 106)	
Themes	n	Themes	n
Autonomy			
ICT increase autonomy	34	ICT increase autonomy	32
Autonomous students appreciate more distance courses	1		
Anxiety			
ICT increase anxiety	13	ICT increase anxiety	12
ICT decrease anxiety	6	ICT decrease anxiety	6
		Students have no apprehension about ICT	1
Motivation			
ICT increase motivation	22	ICT increase motivation	28
ICT decrease motivation	2	ICT decrease motivation	4
Onsite presence can have an influence on student motivation	1		
Participation			
ICT increase participation	15	ICT increase participation	9
ICT decrease participation	9	ICT decrease participation	2
Others			
These characteristics have an influence on student learning outcomes	34	These characteristics have an influence on student learning outcomes	25
ICT use at the university is excellent for the workplace	6	No impact	5
No impact	6	It depends on students	2
I don't know	3	ICT use at the university is excellent for the workplace	1
ICT use brings a certain security	2	Major impacts	1
		I don't know	1

As shown in Table 5, the three impacts that have been by far the most important for students are that ICT use at the university increases the level of autonomy and motivation, and that the students' characteristics (autonomy, anxiety, motivation, and participation) taken into account in this study have an influence on their learning outcomes. The two next most important impacts for students of the two modes are that ICT use at university increases their level of anxiety and participation.

Finally, in the fifth and last open-ended question of the Web survey, students were asked to indicate the impacts of professors' pedagogy (type of professor and teaching practice) into higher education integrating ICT. The themes derived from the thematic analysis of the onsite and online students' responses are regrouped in Table 6. Boldfaced themes represent the interrelation between onsite and online students' responses.

Table 6: The Impacts of Professors' Pedagogy When Using ICT

Onsite students (n = 156)		Online students (n = 106)	
Themes	n	Themes	n
Type of professor (professor must:)			
Be dynamic to keep students' interest	32	Make good use of ICT to bring motivation to students	25
Make good use of ICT to bring motivation to students	29	Be dynamic to keep students' interest	24
Get more familiarized with ICT	15	Be there for students	22
Be there for students	9	Have a well organized course	16
Be very engaged	7	Get more familiarized with ICT	6
Have a well organized course	6	Be very engaged	1
Promote ICT use	4	Promote ICT use	1
Be confident	2		
Teaching practice (professor must:)			
Use active learning techniques	27	Use active learning techniques	22
Motivate students	9	Provide prompt feedback	10
Establish links between theory and real life	2	Motivate students	2
Provide prompt feedback	2		
Promote student/student and student/professor interaction	1		
Others			
Very important impacts	6	Few impacts	7
ICT use provides students with a good experience	3	Very important impacts	1
Professors' pedagogy has an influence on student learning outcomes	2	No impact	1
Most of the professors do not have a good pedagogy	2		
Technology is too present in the courses	2		
No impact	2		

Table 6 shows that the four impacts that have been by far the most important for students are: when we use ICT at the university, professors must be dynamic to keep students' interest, they must make good use of ICT to bring motivation to students, use active learning techniques, and be there for students. We can see here that these impacts related to professors and their teaching practices (the two variables taken into account in this study to assess the quality of professors' pedagogy) are of crucial importance to students. And the next most important impacts for students of the two modes are that, when professors are using ICT at the university, they must have a well organized course and get more familiarized with ICT. The last section of the paper is devoted to a discussion of the findings..

DISCUSSION

Comparison of the Research Findings with Existing Theories

First, with respect to student learning effectiveness, our findings provide support for the conclusions drawn by Allen and Seaman (2004), and Phipps and Merisotis (1999). In fact, the results of our study suggest that, even with the addition of the permanent use of ICT in conventional environments, students' learning is as effective online as in the classroom ("the no significant difference phenomenon").

On the other hand, concerning student performance, our findings are in opposition to those of Ahmed (2000; quoted in Alavi & Leidner, 2001, p. 5), Allen and Seaman (2004), Phipps and Merisotis (1999), Russell (1999), and van Schaik et al. (2003), who concluded that students' performance is as good at a distance as in conventional education ("the no significant difference phenomenon"). Moreover, our results are in opposition to those of Matthews (2000), Ricketts et al. (2000) and Vigilante (2000), who indicated an improvement in students' performance in the Internet and the Web environment compared to the conventional environment. In short, according to the results of our study, with the addition of the permanent use of ICT into conventional learning environments, onsite students performed better than their peers taking the courses online. And assignment grades made all the difference. Clearly, this is a very surprising result, one which will require further investigation in future studies.

With respect to student satisfaction, similar to student performance above, our findings are in opposition to those of Allen and Seaman (2004), and Phipps and Merisotis (1999), who concluded that students taking the courses at a distance are as satisfied as those in conventional education ("the no significant difference phenomenon"). In fact, in our study, even with the addition of the permanent use of ICT into conventional learning environments, online students were more satisfied than those onsite. So here is another very surprising result which will require further investigation.

Let us now examine the results of the verification of hypotheses involving moderator variables. Our findings show a significant influence of student autonomy on the relation between learning environments and student learning effectiveness, and this influence is more pronounced for online

students than for those onsite. Thus, if we add the permanent use of ICT into conventional learning environments, as in our study, given that online students were more autonomous than those onsite, our results provide support for what Bilodeau (1995) stressed, that is, students at a distance are less dependent on their professor and then become more autonomous. On the other hand, our results seem not to be in accordance with the conclusion drawn by Hiltz and Turoff (1997), as well as Urban-Lurain and Weinshank (2000), which indicated an increase in students' autonomy in the networked classroom and the wired classroom environments, respectively, compared to the conventional environment.

Past research has shown that students experience moderate to high levels of anxiety in courses, as much in conventional environments as in online ones. In this study, we found that the level of anxiety was very low both for onsite and online students. Here is another very surprising result which will require further investigation in future studies. In addition, our findings suggest that anxiety has a significant influence on the relation between learning environments and student performance, and that this influence is more pronounced for students taking the courses in the classrooms than for those online. So if we add the permanent use of ICT into conventional learning environments, our research results provide support for what Harasim (1987a, 1987b; quoted in Harasim et al., 1995, p. 15) and Hiltz and Turoff (1997) said, that is, networked classrooms might bring anxiety into communication. On the other hand, they are in opposition to those observed by Cowan and Piepgrass (1997), and Hembree (1988; quoted in Cowan & Piepgrass, 1997, p. 105) into conventional environments, where the researchers suggested that anxiety has harmful effects on students' performance (the more anxious students performed better than the others here), and also in opposition to those of the study carried out by Jegede and Kirkwood (1992) in a distance learning environment, which indicated that students experienced a high level of anxiety and were more anxious at the end of the semester than at the beginning.

In our study, we found that student motivation has a significant influence on the relation between learning environments and student performance, and that this influence is more pronounced for onsite students than for those online. Thus, when adding the permanent use of ICT into conventional learning environments, and given that onsite students were more motivated than their peers taking the courses online, our results provide support for the conclusion drawn by Riel (1993), Harasim et al. (1995) as well as Hiltz and Wellman (1997) indicating an increase in students' motivation in the networked classroom environment compared to the conventional environment. On the other hand, our findings seem to be in opposition with the conclusion of the studies conducted by Barron and Orwig (1997), and Blyth (2000) that pointed to an increase in students' motivation in the Internet and the Web environment compared to the conventional environment.

Previous studies have argued that participation is crucial in distance learning environments (Alavi et al., 1995; Leidner & Jarvenpaa, 1993; Webster & Hackley, 1997). Our findings somewhat challenge these results, as we found that student participation is crucial in both onsite and online environments. Indeed, although we noted relatively weak levels of student participation, participation had a strong influence on the relations between learning environments and student learning

effectiveness, student performance, and student satisfaction. And, surprisingly, this influence is more pronounced for students taking courses onsite rather than online. Thus, if we add the permanent use of ICT into conventional learning environments, and given that onsite students participated more than those online, our results provide support for the conclusion of the studies conducted by Hiltz (1990) and Hiltz and Wellman (1997) which indicated an increase in students' participation in the networked classroom environment. On the other hand, our findings are somewhat in opposition to those of Karp and Yoels (1976) who, while following the observation of 10 undergraduate courses, noted that even in small classrooms, only few students participated in the discussions. Clearly, in our study, student participation is the moderator variable that showed having the greater influence on the relations between learning environments and the three dependent variables of our theoretical research model. Consequently, it is an extremely important variable to take into account in future development of courses and curricula, and in future studies.

Finally, the results of our study suggest that type of professor and teaching practice did not have a significant influence on the relations between learning environments and student learning effectiveness, student performance, and student satisfaction. Here again, these are very surprising results. In our view, a fact that may explain these surprising results is that type of professor and teaching practice had such a strong direct (independent) influence on the dependent variables that they did not have a significant indirect one (moderator), at least to a level of significance $p = 0.05$. These variables require further investigation in future studies.

Limitations

First, the experimental research design (a field experiment) of this study inherits the limits of this research approach: a weak level of control on independent variables and a weak level of internal validity compared to the laboratory experiment. But, inversely, it presents a higher level of external validity as it was conducted into a real life environment instead of a laboratory. In addition, this study was carried out at only one faculty of a higher education institution instead of several faculties. If it would have been conducted in several faculties of several universities, the external validity would have been even higher.

Second, as this study tested a new moderator-type theoretical research model which, to our knowledge, had never been used before, it was necessary to interpret the findings using different perspectives that make sense of one or several independent variables influencing one or several dependent variables. In this study, we used moderator variables that cannot have a direct influence on dependent variables, but rather an indirect one. As a result, we needed to use a different approach to compare the findings with existing theories.

Third, to compare the results of this study with existing theories, we stress that both onsite and online students were using a similar set of ICT. In other words, both learning environments were ICT-supported or technology-rich.

Theoretical and Practical Contributions

From a theoretical point of view, this study provides academic and organizational communities with theoretical foundations which are innovative, interesting, useful to strategic decision-makers to anticipate the future with a greater certainty, and generalizable to other faculties and universities with regard to the impacts of students' onsite presence and non presence on their learning outcomes, as well as to the influence of numerous moderating variables on the relation between highly technological learning environments and students' learning outcomes. This study is also opening the door to the comparison of different ICT-supported or technology-rich learning environments, whereas until now researchers have always compared an ICT-supported learning environment with the conventional learning environment (face-to-face without ICT use). To our knowledge, this study is also the first to explore the impact of several important moderating variables related to students' characteristics (psychology) and professors' pedagogy in order to better understand the relation between learning environments and students' learning outcomes. Hence, it sheds some light on the role of students' characteristics and professors' pedagogy in the students' learning process while they are in ICT-based learning environments. In addition, our new and creative moderator-type theoretical research model might be tested by other researchers in other universities and/or other situations.

From a practical point of view, this study will help educational institutions to develop curricula better adapted to ICT-supported or technology-rich learning environments so that students take full advantage of their learning activities into these new environments. It will also allow decision-makers of educational institutions to target professors likely to be "the best" in these highly technological learning environments or at least to make such that those already teaching in these environments become more aware of the importance of adapting their pedagogy to these new environments and to continually be innovative in the ways of presenting their material to students. Moreover, this study will allow ICT providers to be more proactive in the design of these new technology-rich learning environments in choosing "the best" technologies to support them.

CONCLUSION

The purpose of this study was to investigate the perceptions of onsite students (hybrid or blended mode) and of those taking the same courses on the Internet (online mode). To guide the study, a moderator-type theoretical research model was developed, out of which nine hypotheses were formulated. The model was tested in a field experiment. To collect data, we used a multimethod approach, that is, a Web survey involving open- and closed-ended questions. The sample was formed of 313 onsite and online students from eight undergraduate and graduate courses offered at the Faculty of Administration of a large Canadian university. The quantitative data analysis was performed using a structural equation modeling software, that is, PLS; the qualitative data were analyzed following a thematic structure using QSR NVivo.

The results indicate that onsite students have not found learning more effective than their peers taking the same courses online. Onsite students performed better than those online. Online students were more satisfied than onsite students. As regards to students' characteristics, students' autonomy had an influence on the relation between learning environments (hybrid mode and online mode) and the effectiveness of their learning, and this influence was more pronounced for online students. Students' anxiety and motivation had an influence on the relation between learning environments and their performance, and this influence was more pronounced for onsite students. And students' participation had an influence on the relation between learning environments and the effectiveness of their learning, their performance, and their satisfaction, and this influence was more pronounced for onsite students.

As for the qualitative results, *grosso modo*, they are the following: the elements the most appreciated by students were professor and course usefulness; the elements that the students suggest improving are professor and presentation of the material; students' onsite presence is again advantageous when using ICT as it allows a better understanding of the material and promotes student/student and student/professor interaction; ICT use at the university increases the level of autonomy and motivation in students, and students' characteristics (autonomy, anxiety, motivation, and participation) have an influence on their learning outcomes; and when using ICT at the university, professors must be dynamic to keep students' interest, make a good use of ICT to bring motivation to students, use active learning techniques, and be there for students.

Finally, much more research will be needed as technology-rich environments unfold. Better understanding of their impacts on students, professors, and educational institutions will be required in order to improve them or design new ones still better adapted to higher education students. We will continue to inquire into this exciting innovative field.

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SERVICE EXECUTIVES ON PREPARING UNDERGRADUATES FOR SALES POSITIONS

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ABSTRACT

Business schools are increasingly under scrutiny to make certain that the knowledge and skills they impart to students are consistent with the needs of a rapidly changing competitive environment and the organizations that hire college graduates. The current research surveyed senior-level sales executives at 400 U.S.-based service firms on the importance of topics typically included in the undergraduate Professional Sales course. Forth percent of the executives participated. The executives' assessments of the value of selected out-of-class activities for students interested in pursuing careers in sales and recommendations for course structure were also solicited. The results provide benchmarks for faculty in designing and delivering the Professional Sales course in a post-secondary environment and advising students on how to better prepare for entry-level sales positions.

INTRODUCTION

Trends in business have caused academic leaders to consider restructuring both the content and teaching methods used in undergraduate curricula (Ackerman, Gross, and Perner 2003). Considering the potential value of perspectives from business school advisory boards, financial donors, and executives-in-residence to name a few, it is understandable that researchers involve these types of individuals in their data collection efforts (e.g. Saltzstein 1994; Waner 1995; Levenburg 1996; Taylor 2003).

For students interested in pursuing careers in professional selling, one of the cornerstone collegiate educational experiences has been the personal or professional sales course. This course has often been treated as a stepchild of marketing rather than as an integral part of the marketing process; unfortunate considering well over half of marketing majors will begin their careers in sales positions (Kutscher 1990; Michaels and Marshall 2002).

Colleges and universities are being encouraged by corporations and recruiters to offer courses that equip students with crucial, job-related skills (Weeks and Muehling 1987; Bragg 1988; Lysonski and Durvasula 1998). One potential difficulty is there is often a disparity between what is taught in the selling course and what sales representatives use in their daily activities.

One study that examined the sales course and the differences between practitioners' and educators' viewpoints found significant discrepancies between the two groups' views of what was

important, both for course content and pedagogy (Parker, Pettijohn, and Pettijohn 1997). Research focusing on the perspectives of industrial sales practitioners in sales course content has been reported by Plank (1982) and Luthy (2000). The research reported here goes one step further. In addition to focusing on the opinions of an expert sample of senior-level sales executives, participants were also asked about the value of non-course activities and their recommendations for students interested in sales careers. The methodology used is similar to the one employed in the Luthy study (2000) but focuses on senior sales executives in the service sector. The rationale for focusing on service professionals stems from the changing nature of the U.S. and world economies and the unique aspects of marketing services (Grant 1987; Oliver 1987).

METHODOLOGY

A random sample of 400 senior-level sales executives at U.S. based, service firms was purchased from a commercial list vendor. Each subject was sent a self-administered questionnaire; a cover letter explaining the purpose of the survey, its goals, the assurance of respondent anonymity, the offer of a copy of the final article if they wished; and an addressed, postage paid return envelope. A total of 160 of the 400 service firm questionnaires were returned with usable responses, representing a 40% response rate.

The survey instrument was developed through a topic analysis of eleven of the leading textbooks on personal and professional selling used in colleges and universities. This list was supplemented with other topics as a result of a literature review. The end product was a compilation of 31 topics either currently or potentially being covered in college level undergraduate selling courses. Subjects were asked to assess the importance of each of the professional selling topics on 7-point Likert scales, (where 1 = extremely unimportant and 7 = extremely important) for inclusion in an undergraduate selling course.

To supplement the range of issues presented in the survey, lists of potentially valuable sales-related out-of-class activities, relevant coursework, employment options, and select life experiences were compiled. The final part of the survey included background and classification questions on the respondents.

Considering the respondents as a group, they are experienced in their current positions (average 6 years), their organizations (average 8 years), and in sales (average 14 years). Position titles reflect their senior status and include: President (12), Vice President–Marketing (29), General Manager (34), National Sales Manager (47), Director of Sales and Marketing (11), and Director of Sales (5). The remaining respondents either described their title as other or left this question blank. This group participates in a hiring infrastructure that selects new sales representatives from both undergraduate and graduate college and university programs. Exhibit 1 presents other selected respondent characteristics.

Exhibit 1	
Profile of survey respondents *	
Average age (in years):	43
Average years in current position:	6
Average years at current organization:	8
Average years in the sales area:	14
Average number of sales personnel supervising (range 0-80)	9
Average satisfaction with career path:**	5.93
Percent Choosing "7":	33%
Percent reporting completing an undergraduate course in:	
Basic marketing	76%
Personal selling	25%
Sales management	31%
Advanced selling	6%

* Sectors: Banking, Couriers, Credit Unions, Insurance, Leasing, Property Realtors, Equipment and Car Rentals, Securities firms, Telecommunications, Trucking, Air Transport

** A 7-point Likert Scale was used for this question with 1=extremely dissatisfied and 7=extremely satisfied.

RESULTS

For the 31 topics respondents evaluated, the rank and importance averages are presented in Exhibit 2. Several respondents commented that the number of topics listed for evaluation exceeded what could be adequately covered in a single course unless superficial treatment was given to each. Given that the computed averages for all thirty-one topics were rated above the scale's midpoint of 3.50 (thereby indicating that strictly speaking none were viewed as unimportant, just more or less important relative to others) it suggests that select topics are more important to include in the basic selling course with others left for other potential offerings such as courses in advanced selling or sales management. The thirteen topic areas with averages in the 6.0 and above range reflect the strong emphasis that the respondents believe should be placed on communications and critical thinking and reasoning skills in addition to knowledge base areas and sales techniques.

Exhibit 2. Topic Importance in the Professional Selling Course		
Subject / Topic:	Score *	Rank
Effective Listening Skills	6.55	1
Time Management	6.35	2
Relationship Selling, Developing Rapport, and Account Management Strategies	6.33	3

Exhibit 2. Topic Importance in the Professional Selling Course		
Subject / Topic:	Score *	Rank
Follow-up and Service after the Sale	6.30	4
Product, Company, Competitive, and Market Knowledge in the Selling Process	6.28	5
Presentation / Demonstration Methods & Strategies	6.23	6
Handling Objections	6.23	7
Asking Questions	6.18	8
Professional Image	6.15	9 (tie)
Prospecting for New Business	6.15	9 (tie)
Communication Processes and Skills (including persuasion, oral, written, and nonverbal)	6.13	11 (tie)
Preapproach / Planning in the Selling Process	6.13	11 (tie)
Negotiating Skills	6.00	13
Confirming and Closing the Sale	5.98	14
Ethical Issues and Situations in Selling	5.83	15
Analyzing the Customer's Competitive Situation	5.68	16
Territory Management	5.40	17
Buyer Behavior, Individual / Organizational Psychology	5.38	18
S.P.I.N. Model of Selling (situation, problem, implication, need payoff)	5.18	19
Approach Phase in the Selling Process	5.15	20
Team Selling	5.00	21
Sales Manager's Role / Activities in the Selling Process	4.91	22
Laws Affecting Selling	4.83	23
Adaptive Selling Model	4.76	24
International Selling Environment (dealing with diverse cultures and customers)	4.75	25
Retail, Business, Service, and Non-Profit Selling	4.63	26
Rewards of Selling	4.58	27
Sales Force Automation	4.53	28
Career Opportunities and Career Paths in Sales	4.46	29
Selling over the Internet	4.08	30
Telemarketing Selling	3.98	31
* A 7-point Likert Scale was used for this question with 1=extremely unimportant and 7=extremely important.		

For students contemplating a successful career in sales, academic coursework is only one part of the educational process (Gault, Redington, and Schlager 2000). Executives were also asked to rate select marketing-related courses and non-course experiences as to their importance to being hired for a sales position in their respective firms (see Exhibit 3).

Exhibit 3.: Preparing for a Career in Sales*

Subject / Topic	Score
Undergraduate Coursework:	
Sales management	4.80
Personal selling	4.73
Basic marketing	4.70
Advanced selling	4.58
Professional and Social Activities:	
A social organization of some type	4.38
A business-related student organization other than AMA or PSE	3.46
Pi Sigma Epsilon (PSE)	3.15
American Marketing Association (AMA)	3.13
Work Experience:	
Sales related business internship	5.28
Sales experience outside of a retail setting	5.10
Sales experience in a retail setting	4.20
Non-sales related business internship	4.18
Followed a sales representative for a day	3.78
Miscellaneous Experiences:	
Studied a foreign language	3.38
Traveled to another country	3.13
Studied at a foreign university	2.75

* 7-point Likert Scales were used for these questions with 1=strongly disagree and 7=strongly agree. Each factor was used to complete the sentence, "our firm is more likely to hire an individual for an entry-level sales position if they …."

In addition to coursework and employment experience, respondents viewed professional and social activities as significant to a student's development for a successful hiring decision. Lastly, with all that has been written about the international aspects of sales and business, questions were asked about exposure to foreign cultures through language training, travel, and study abroad. While not

rated as particularly unimportant, clearly other experiences were viewed as more important for students preparing for careers in sales.

Subjects in this study were asked several short response questions taking the form of recommendations they would make to students interested in pursuing a career in the sales profession. More specifically, they were asked to list areas of study and coursework outside the typical schedule of courses required for business majors of various types. Their responses included: public speaking, business writing, practical computer skills, psychology, a 2nd Language (Spanish was most frequently mentioned), accounting, ethics, mathematics, engineering, history, geography, logic, and golf.

Subjects in this study were also asked how they would structure the "principles of sales" or "professional sales" course for undergraduate students. The results, presented in Exhibit 4 reflect a very interactive and hands-on or experiential nature to the class. It also is heavily skills based and includes interaction with sales professionals.

Exhibit 4: Recommended course structure

Course Component	Advocating Use	Percent of Course
Guest speakers / presenters from the sales profession	95%	12%
Analysis of case studies involving selling issues	95%	11%
Role playing selling situations	93%	19%
Individual student projects and/or presentations	90%	13%
Group student projects and/or presentations	90%	10%
Class discussion of selling issues, business events	83%	8%
Videotapes on selling topics	70%	7%
Computer simulation games	70%	6%
Lectures by professor on substantive material	65%	9%

DISCUSSION

The findings presented here hold potential value for college and university faculty who design and deliver the professional selling course. They also offer valuable information for students contemplating the best way to prepare for a career in sales.

For academic faculty, those responsible for the selling course, the service sales executives responding to this survey have provided a wealth of information, including considerable detail on the topics they believe should be included in the course and pedagogies that may deliver a better all-around experience. This directly translates into how to design and deliver a high value-added selling course. In addition, their opinions and recommendations provide academics with valuable insights

from the service sales sector. Most importantly, this information will allow academics to better advise students on the types of coursework and outside activities, work-related and professional, that will be viewed most positively by company recruiters.

In virtually all undergraduate and most graduate programs, there is the opportunity for students to augment their majors with formalized minor programs, concentrate in other areas, or simply take additional coursework as part of their "general education" requirements. For students interested in pursuing careers in sales, the results of this research point out the tremendous benefits of supplemental coursework, further developing their communications skills through such courses as public speaking and persuasive writing. Additionally, taking courses in psychology, a second language, and engineering and mathematics will prove useful to foster a better understanding of people and customer needs, especially those related to technology and its applications to product development. However, students must also realize that in addition to academic work, the strongest preparation for this career path will include sales-related work experience through internships and active participation in professional and social organizations.

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COLLEGIATE ADVENTURE PROGRAM: CREATING A BUSINESS PERSONALITY

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ABSTRACT

More than ever, today's new hires are expected to hit the ground running. As such, there has been a resurgence of selection research over the last several years. In general, the findings of this research indicate that an occupationally-relevant personality has the greatest predictive validity (Taylor, et al., 2002). It is higher education's duty to provide the experience necessary to create successful business personalities. Further, successful business personalities cannot be created through lectures but must be grown through experiences that create the proper skills, attitudes and values. This paper provides an overview and detailed example of a university's attempt to create successful business personalities by growing traits in an 'outside-the-classroom', co-curricular program.

INTRODUCTION

Today's businesses are facing a new type of hiring crisis – a crisis of hiring the right person for the job and the organization at the most economical cost. The first year cost of a bad hire typically runs 2.5 times the person's salary, not counting the intangible costs and damage to organizational productivity and morale (Kruger, 2004). An overlapping problem is that most organizations can no longer afford the time and costs of training new hires. Most large to middle-sized organizations have cut back on-the-job training and eliminated the middle managers who were previously responsible for coaching new hires. Due to downsizing and cost cutting, today's new hires are expected to hit the ground running from the first day of employment.

Consequently, there has been a resurgence of selection research over the last several years. The most recent findings of selection research indicate that an occupationally-relevant personality has the greatest predictive validity (Taylor, et al., 2002). Donald Trump on the hit television program "The Apprentice" seems to validate these findings by indicating that the winning candidate has the right personality traits to succeed. Stephan Covey's *The 8th Habit* (2004) suggests the most critical key to success in the business world is to find one's voice and to inspire others to find theirs. In business, these traits make up what we call the "business personality," and these characteristics have become the "holy grail" of business recruiters.

A person's personality is often defined as a complex interaction between heredity, attitude, experience, and values (Digman, 1990). Therefore, a person's business personality is a combination of the heredity, attitude, experience and values, he or she brings to the job. Although the appropriate business personality is job specific and depends on the job analysis and supervisor expectations, there are several overarching traits that are sought after by all organizations (Emery & Tolbert, 2004). It is the duty of higher education to provide the experience necessary to create successful business personalities. Further, successful business personalities cannot be created through lectures but must be grown through experiences that lead students to adopt the proper business attitudes and values. Additionally, a successful business personality cannot be developed in every student. The student must have a readiness or willingness to learn. As such, the growth process is provided through a series of coached experiences as suggested by the Hersey-Blanchard (1969) model of situational leadership. The purpose of this paper is to provide an overview of a university's attempt to create successful business personalities by growing desired traits in an outside-the-classroom, co-curricular program. Hopefully, our experience will foster a sharing of philosophies, delivery methods and results in co-curricular education.

THE BUSINESS ADVENTURE PROGRAM OVERVIEW

The aim of the Adventure Program is to mold the students' business personality and to help them find their *voice* during the formative years of undergraduate education. The program is based on building behaviors and attitudes by putting students through experiences as well as by providing clearly defined expectations of business, character development training, and one-on-one mentorship. One of the most important behaviors to develop is leadership. It is important for students to understand that leadership is a choice. Most students think of leadership as a position and therefore don't think of themselves as leaders (Covey, 2004). Further, this program is for students and academic sponsors that are skeptical of the notion that leaders can be trained in the classroom or that there is nothing anyone can do to facilitate or accelerate the process.

Opportunities to achieve expectations and to gain "real world" experience are developed through a strong partnership between the faculty, student services and the business community. Every effort is made to build a sense of community and create an achievement culture within this cadre of self-motivated students. Student achievements are rewarded (based on a points system) and experiences are certified by the university thus providing job recruiters with a credible insight to the student's business personality. Achievement rewards are unique opportunities to add valuable experiences to one's resume. Further, the program's credibility is such that "high achievers" are often pre-qualified for job interviews. Lastly, the program's track record of improved student employability has created an ever-increasing group of student applicants and served as the impetus to make our regular business curriculum more hands-on and practitioner-oriented.

OPERATIONAL MODEL

Each semester the program consists of six components: (1) kick-off, (2) projects, (3) academic-related sessions, (4) mock job interviews (practice and scored rounds), (5) cabin stay and ropes course, and (6) awards presentation (Table 1). Each semester opens with an *Adventure* convocation to explain the program and to kick-off a week of enrolling new and past students to the program. During this period, starting achievement points are calculated for students based on their last semester's achievements (e.g., grade point and co-curricular activities). In addition to the explanatory nature of the convocation, motivational speakers are used to help influence students to become achievers and to create an achievement culture.

The "projects" or program management component of the program changes each semester and provides the students with opportunities to plan and implement a variety of projects ranging from SIFE (Students in Free Enterprise) or *Apprentice*-like activities (e.g., develop radio and newspaper educational programs) to company action-learning projects (e.g., develop ethics or recruitment programs) and social activities (e.g., bowling, pool or "anything floats" competitions). This component provides the students with integrative experiential learning and confidence in their program management abilities that can't be created in the classroom.

The "academic-related" component of the program also changes each semester and consists of student run seminars (e.g., ethics, leadership, business topics), debates (e.g., stem-cell research, accounting, immigration and environmental legislation), and business simulations (internally and between colleges). While this component is similar to the previous one, it provides students with an opportunity to practice and to take their academic skills to the next level through teaching. Additionally, this component has a secondary benefit of cooperative learning and peer education.

The "mock interview" component of the program consists of two phases. The first phase is conducted during the third week of the semester and consists of the having the student participate in a practice job interview in front of fellow students and faculty members. Students are critiqued on their performance as well as their resume and asked to reflect on the experience. The second phase is conducted during the eighth week of the semester and consists of having the student participate in a practice job interview in front of real job recruiters. Students are scored and given feedback on their resume and performance. This component creates ownership in one's career while improving his or her resume writing and communication skills. Evidence indicates that students improve in each semester that they participate in this component.

The "cabin stay" component of the program is generally conducted midway through the semester and consists of an off-site weekend (a day and a half plus a night) experience in which students complete a low or high ropes course (depending on the location) and various leadership and team/interpersonal skills building activities. The activities are conducted by faculty, student, guest speakers and National Guard personnel. This experience creates a cohesive group of students who understand the importance of teamwork and achievement. Further, the off-site weekend creates a

"buzz" that is invaluable to recruiting new students and to strengthening the relationship between students and faculty members.

Table 1 Overview of Program Timing, Activities and Outcomes

Week	Activities	Student Outcomes	Program Outcomes
1	Opening Convocation; Program enrollment; Student's achievement points calculated from last semester's grade point and co-curricular activities	Understands the program and one's individual achievement points; Chooses to be an achiever	Creates an achievement culture; Increases student motivation, recruitment and retention
1.2	Project Management (e.g., SIFE, Service learning and action learning projects, social activities)	Leadership, team and project management skills; Application of academic knowledge; Improved student morale	Creates a cadre of students to perform campus and community projects
2-12	Student Run Seminars (e.g., ethics, leadership, business topics), Debates, and Simulations	Organization, presentation, team and project management skills; Debating and problem-solving skills	Creates a cadre of students to teach other students outside of the classroom
2	Mock Interview Practice Round	Creates ownership of one's career and development; Improves resume writing and communication skills; Provides competitive interviewing experience	Creates a cadre of self-assured students who understand the importance of achievement and self-promotion
8	Cabin Stay and Ropes course	Improved team building, leadership and interpersonal skills; Effective student teams	Creates a cohesive group of achievement-oriented students within the business program
13	Mock Interview Scoring Round	Experience of interview practice, feedback and coaching from real job recruiters; Understanding of the competitive interviewing process and their strengths and weaknesses	Creates a cadre competitive job applicants; Provides important feedback to the program of customer requirements
14	Awards Presentations	Validation of performance; Opportunities to participate in a host of business activities inside real companies	Underscores the importance of an achievement culture to all university business students; Increased program enrollment

Lastly, the "awards" component recognizes a student's program achievement for that particular semester. Achievement points are tallied and rewards are provided to a number of the highest achievers depending upon the funding and experience opportunities provided by sponsor companies. For example, past sponsor rewards have included taking students on business trips to Japan, China, England, Germany and Mexico as well as having them participate in executive problem-solving sessions and recruiting sessions.

As previously mentioned, these six components are repeated each semester with changes in the projects, academic sessions, interviewers, cabin stay activities and rewards. This repetitive cycle is intentionally designed to provide students with continuous opportunities to develop and apply key business personality traits through action learning (e.g., managing projects, teaching, debating, interviewing, questioning and participating on teams). In other words, students may elect to participate for only one semester or for several semesters. The hope is that by participating in repeated cycles, a student will continually build skills and reinforce needed traits. The evidence thus far indicates that the students, who have participated in the most semesters, score the highest on mock interviews and are the most employable. Several of the key program philosophies are expanded upon in the following sections.

EDUCATE THE WHOLE STUDENT

Most business schools only educate half the student – the in-class, academic half. Today's employers are looking for the complete recruit, one with both the job skills and a business personality. As such, business schools must begin to educate the whole student by providing structured opportunities outside the classroom that go beyond internships and systematically focus on building the business personality. Further, most business schools only provide potential employers with half the picture, half the story of student achievement. That half of the picture is the academic standing of the student represented by course grades and a cumulative GPA. What employers really want is a complete picture of student achievement and potential. The National Association of Colleges and Employers suggests in their Internet article "Resumes & Interviews: What Employers Want" (2004) that the picture should show evidence of the desirable intangibles, such as the ability to work in teams, to communicate effectively, to develop workable goals and strategies, to perform with honesty and integrity, to exhibit a strong work ethic, to demonstrate initiative, to relate well to others (interpersonal skills), and to plan and manage budgets (organizational skills).

DON'T JUST POLISH THE DIAMONDS

Most schools focus leadership program activities on the high academic achievers because they are the easiest to identify and the easiest to motivate using the traditional in-classroom methods. This program, however, focuses on both the well-rounded achievers and high achievers. The well-rounded

achievers represent a larger group of self selecting and motivated individuals. It has often been said that "when the student is ready, the teacher will appear." As such, this program gives an opportunity for those students who see the importance of education later in their school careers than the "high achievers." In other words, this program provides the capability to reach a larger group of latent achievers who are usually forgotten by most traditional classroom extension programs. Particular efforts are made to reach this group through encouragement, coaching, and recognition to raise their performance. Further, the concept of a cadre training process, involvement of local businesses and faculty, rewards, and certification builds a sense of community among the participants.

LEVERAGE EXISTING VALUES

While most business school programs struggle with the overlap of other non-academic departments (e.g., career services, student development, international studies), this program has created internal and external partnerships to take advantage of extra curricular opportunities. Internal partnerships such as student affairs and career services that focus on the whole student help us leverage their skills and best practices to create a more holistic education. External partnerships were created with companies to define expectations and measurements of the Adventure cadre. Further, these external partnerships have created an atmosphere of ownership by the business community. They truly see the Adventure as a "classroom without walls."

The program creates one-on-one coaching moments to integrate business values/beliefs and character development with academic concepts such as leadership and organizational dynamics. This may be the largest single benefit of the program and the key to developing the student's business personality. Further the program coaches or advisors discuss expectations and experience opportunities with each student as well as reviewing past performance. Although students are required to take complete ownership of their planning and developmental progress, they view the coaches/advisors as someone who really cares about their development and eventual employment. Previously, this was the responsibility of the academic advisor. Today, however, most faculty members are faced with advisee overloads and can only function as talking catalogues and drop/add signatories.

CREATE CARROTS…REWARDS THEY WANT, WHEN THEY WANT THEM

A key to student recruitment and program success are the extrinsic and intrinsic rewards. The rewards are designed to be meaningful, achievable and timely in order to motivate students to perform program duties in addition to their normal academic load. Further, the students must perceive the rewards as more valuable than the money and experience earned in a part-time menial job. For example, students have found the following rewards to be particularly meaningful: (1) Camaraderie gained from weekend cabin stay and ropes course; (2) Experience gained for job retreats and

workshops with corporate recruiters; (3) Inclusion in a resume book; (4) Certification of various experiences; (4) Instant small scholarships; (5) Free tickets to the department social and other usual college rewards like book store gift certificates and T-Shirts; and (6) Accompanying our business partners on overseas business trips (e.g., Mexico, England).

Another key to success is the way the program is marketed. Today's students are the MTV generation who have grown up being bombarded with slick, highly visual messages that describe how cool a product is. Accordingly, the program's marketing centers on slick mottos, generation heroes (e.g., Sponge Bob) and mediums that attract student attention. For example, mottos such as, "Achieve Now – Rewards Later" speak to the notion that success is based on ever increasing levels of achievement. Additionally, a video of students performing their Adventure activities is continuously projected on a wall in the business school's common area. Students enjoy seeing themselves achieving in academic and social situations. The key point here is to never underestimate the power of giving students their 15 minutes of fame. Students indicate that this satisfaction is very akin to the enjoyment one feels in watching a reality TV program that gives fame to ordinary individuals. Further, the videos convey a strong message and values of an achievement culture. Non-participants can clearly see that they are being left in the wake by the achievers.

CREATE A COMPETITIVE ADVANTAGE FOR YOUR JOB SEEKERS

Through its unique out-of-classroom training, experiences, and achievement certification, the Adventure Program adds a competitive advantage for job seekers. Recruiters can quickly see what desirable business qualities and skills have been acquired by reviewing a student's achievement profile or portfolio. This profile contains specific evidence of desirable business qualities, such as the ability to work well in teams (interpersonal skills), motivation, integrity, and communication and organization skills.

One recruiter for a national car rental company recently expressed enthusiasm for the program after interviewing several students who had just completed the program. This recruiter found that these student achievers not only had the desired academic knowledge, but also possessed the maturity and positive attitudes usually only found in experienced business employees. Similarly, Brett Allen (personal communication, May 19, 2004), a recruiter for HRFinder services in Columbia, SC noted that, "the Business Adventure Program fosters the dynamic business personality traits that our employers want in all their employees." Obtaining certification from the Business Adventure Program saves valuable recruitment time since it immediately identifies the kind of well-rounded, high achievers that are in demand in the workplace

PROVIDE ASSURANCE OF LEARNING

Seeking or maintaining accreditation is a key focus of most business schools. Central to AACSB accreditation is the requirement to demonstrate assurance of learning. The Business Adventure Program provides evidence of a school's efforts to provide voluntary learning opportunities outside the classroom. It has well-documented, systematic processes that assist in the development, monitoring and evaluation of student learning outside the classroom. By encouraging students to actively participate in business organizations and experiences, they are not only "graded" through the earning of points, but they actually begin to live the business concepts taught in the classroom. Students gain first-hand experience of working together as a business unit, and begin to appreciate and develop personal qualities that are valued by business professionals (e.g., self-motivated, outstanding work ethic, integrity, enthusiasm, maturity, dependability, high standards, good communication skills, perseverance, etc.) In addition to providing an assurance of learning, this unique program provides supplemental evidence of efforts toward satisfying the AACSB standards of student retention efforts, aggregate faculty and staff educational responsibility, and individual faculty educational responsibility.

DEFINE AND IMPROVE UPON PROGRAM SUCCESS

The program uses an advisory council of business managers and job recruiters to help define program success and key measurements (e.g., individual performance targets, performance evidence, etc.). Additionally, off-the-shelf instruments are used to measure pre- and post-character development and the students' knowledge of business expectations. These measures are compared to non-participants to demonstrate the program's value. Although the program is still in its infancy, preliminary results indicate striking differences in attitude and behaviors between the participants and non-participants. Further, the program has incorporated the continuous improvement mechanism of benchmarking. The advisory council focuses on changes in business recruiting practices and requirements while the students examine the best practices of other university co-curricular programs. This information is fed into the program's strategic planning cycle for possible implementation in the next academic year. Lastly, the program has an on-going product improvement or corrective action team (faculty, staff, participants, business managers, and job recruiters) that examines student feedback from each experience.

CONCLUSION

The Business Adventure Program is an extremely innovative framework intended on developing a student's "business personality" through the creation of leadership opportunities and student ownership of business and community projects. Additionally, the program creates an

achievement culture which fosters deeper commitment and involvement of the students in the study of business and good business practices by actively involving students in the learning process. In turn, the achievement culture promotes higher levels of in-class learning, teamwork, confidence, grade point averages and a sense of community. Further, the program helps students to assimilate business concepts by allowing them to practice classroom learning (e.g., project management and leadership) in faculty-supervised activities outside the classroom.

The program is also designed to give feedback each semester in the form of points earned by students for their contributions and activities throughout the semester. This feedback mechanism is intended on providing motivation similar to that found in the business world. This feedback also has a unique feature in that student achievement in the program is provided in the form of a report to potential employers to be used as an additional assessment tool and an indicator of future business success.

The program outcome measures have been very positive. In its first year, the program helped the university's College of Business go from one student organization with five leadership opportunities, 50 student participants, and two self-serving events, to four organizations with 20 leadership opportunities, 160 student participants, four self-serving events, seven business projects, two sponsored professional speaking events, two community fundraising activities and four cross-campus support events. Additionally, the Adventure group had a 23 percent increase in grade point average versus a similar sample of non-Adventure participants.

Moreover, this program has had a profound effect on recruitment, retention, and, most importantly, the future employability of our students. The four-fold increase in employability (job offers prior to graduation) of Adventure graduates over non-Adventure graduates is the direct result of creating students with the *business personality*, creating a stronger internal partnership with career development/services and providing recruiters with evidence of "the right stuff." The following are typical recruiter comments:

> *"I really believe in this program, I love the fact that if I see a student is High Achievement Certified, I know I want to interview them."*
>
> --Regional Recruiter, Enterprise Rent a Car, Top Employer of Entry Level College Degree Students in the Country.

> *"That was the best group we've ever had visit, and we get a lot of groups."*
>
> --Regional Recruiter, Erwin Penland, Top Advertising Agency in South Carolina

> *"I wish they had a program like this when I was in college."*
>
> - Regional Recruiter, Elliotte Davis, Top Employer of Accountants in South Carolina

In short, the program provides the student with an opportunity *to find their voice and to inspire others* (Covey, 2004) while providing them a competitive advantage in the job market. Further, the program has strengthened our business curriculum through inclusion of several *Adventure*-type projects and "Get Real" initiatives. Graduates of the *Adventure* experience consistently offer program feedback that seems to parallel the musings of Robert Frost in his poem *The Road Not Taken* (1920).

"……Two roads diverged in a wood, and I,
I took the one less traveled by,
And that has made all the difference."

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THE FUTURE OF ACADEMIC HONESTY

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ABSTRACT

Cheating has permeated many facets of American life. Reports on cheating are found in business, the media and on college campuses. Perhaps one of the more disturbing trends is reports on increasing cheating among grade and high school teachers and administrators. This makes the behavior, motivation and training of education students relevant for scrutiny. The paper examines academic dishonesty among college students training to be teachers. The study uncovers through factor analysis four salient dimensions of cheating, namely Flagrant Cheating, Insidious Cheating, Collusion and Illicit Collaboration. It also uncovers the key motivators of cheating, identifies relevant individual characteristics and demonstrates their relation to the salient dimensions of cheating Policy implications are also discussed to improve ethics education.

INTRODUCTION

Cheating in America used to be an aberration. Today, however, the culture of cheating in America has permeated many facets of our lives, from businesses engaging in dishonest practices to CEOs and politicians cheating and news reporters fabricating quotes and reporting fiction as fact. Schools have not been exempt from these kinds of behavior. High school and grade school students have been found to engage in dishonest behaviors (Green & Saxe, 1992; Meade, 1992; Sims, 1993; Brown & Abramson, 1999; Coverdale & Henning, 2000; Brown & McInerney, 2001) and there are studies which report increases over the years (McCabe & Trevino, 1993; Callahan, 2004). However, it is perhaps the reporting of cheating among school administrators and teachers of our young children that have brought home just how pervasive and serious this epidemic really is. School administrators and teachers have been caught cheating on standardized tests, in reporting inflated gains in student test scores and learning and in manipulating statistical information (Jacob & Levitt, 2003; Starnes, 2005).

Schools have always played a crucial role in preparing our youth to be responsible world citizens. While many will agree that guidance counselors and parents are the key players in providing a child's moral compass, the opportunity of the classroom teacher in his or her daily interaction with the student to provide positive influence should not be overlooked (Chaille, 2004; Halverson, 2004). As such, the conduct of students training to be teachers becomes relevant for scrutiny. More specifically, an investigation of the cheating behavior of education students as well as their motivation for engaging in these behaviors becomes pertinent.

While the literature offers good insights into the relationship between various specific acts of cheating and individual characteristics as well as into specific reasons for engaging in these deviant behaviors, it has generally omitted to uncover the underlying salient dimensions or commonalities among these behaviors and motivations that will help us understand more fully the practice and motivation of these behaviors.

The purpose of this paper is to investigate cheating among college students preparing to be teachers by uncovering the salient dimensions of cheating and the key determinants of these dimensions. The paper will also identify the key motivators for cheating and demonstrate their relationship to participating in the various dimensions of cheating.

METHODOLOGY

A questionnaire was constructed incorporating sixteen unethical academic practices which were selected based on a review of current literature. Respondents were asked to indicate their participation in each of these practices on a six-point Likert scale. The questionnaire also included twelve reasons students might engage in unethical academic practices. These were also taken from current literature. Respondents were asked to rate on a five-point scale the likelihood that each of these reasons was the impetus for a student's unethical behavior.

The sample consisted of 198 students in teacher education classes at a private university in the northeast. Each questionnaire was placed in an unmarked envelope. Completed questionnaires were replaced in these envelopes and sealed by the student. The questionnaires were voluntarily completed during class time. Students who declined to participate were encouraged to engage in other reading or writing activities. Respondents were assured that their responses were confidential and anonymous.

The average age of the respondents was 28 years. About 80% of the respondents were females and more than 80% were registered for more than twelve credits. The mean and the mode of salary expectations were between $30,001 and $35,000 with more than a quarter of the respondents (28%) expecting salaries between $35,001 to $40,000.

RESULTS

Uncovering the salient dimensions of academic dishonesty

In order to uncover the salient dimensions of academic dishonesty, the sixteen dishonest practices were submitted to factor analysis. Factor analysis is a procedure for summarizing the information ratings on the sixteen practices into a smaller number of salient dimensions which can then be identified as the dimension underlying the respondents' ratings. It is in this way that the commonalities in responses are effectively discerned. Four factors were extracted which had an

eigenvalue more than one. The results of the factor analysis, after applying the varimax rotation, are summarized in Table 1.

Table 1: Factor Analysis Results of Frequency of Practice

Variable	Factor 1	Factor 2	Factor 3	Factor 4
Passing answers during an exam	**0.837**	0.205	0.112	0.049
Copying off another student's exam	**0.806**	0.299	0.105	-0.032
Having unauthorized information programmed into a calculator when taking an exam	**0.681**	-0.032	0.079	0.107
Allowing another student to see one's own answers during an exam	**0.666**	0.294	0.291	0.012
Using unauthorized crib notes	**0.660**	0.072	-0.121	0.426
Turning in work done by someone else as one's own	**0.577**	0.460	0.176	0.081
Before taking an exam, looking at a copy that was not suppose to be available	**0.516**	0.158	0.241	0.302
Not citing sources used (plagiarism)	0.185	**0.751**	0.212	0.159
Taking credit for full participation in a group project without putting in a fair share	0.211	**0.737**	-0.007	0.073
Citing sources in a bibliography that were not read or used	0.091	**0.721**	0.244	0.153
Using a false excuse to delay taking an exam or turning in a paper	0.179	**0.504**	0.092	0.409
Giving information about the content of an exam to someone who has yet to take it	0.160	0.214	**0.896**	0.199
Asking about the content of an exam from someone who has taken it	0.184	0.193	**0.871**	0.235
Working with other students on an individual paper or project	-0.007	0.149	0.072	**0.759**
Without the permission of the instructor, having someone check over a paper	0.102	0.152	0.221	**0.669**
Visiting a professor in his/her office to influence a grade	0.268	0.084	0.306	0.457
Factor Labels	Flagrant Cheating	Insidious Cheating	Collusion	Illicit Collaboration

The first factor relates to obvious and overt acts of cheating directly related to passing answers during an exam, copying off another student's exam, bringing unauthorized information into an exam situation, turning in work done by someone else as one's own and looking at a copy of an exam that was not supposed to be available prior to taking it. These practices pertain to common and obvious acts of unconscionable academic behavior and this dimension is labeled Flagrant Cheating.

The second factor pertains to more subtle but not less unconscionable academic behavior relating to not citing sources used, taking credit for group projects without putting in a fair share of the work, citing sources in a bibliography that were not read or used and using a false excuse to delay taking an exam or turning in a paper. This dimension is, therefore, labeled Insidious Cheating.

The third factor relates to the unprincipled sharing of examination information in the form of either asking about the content of an examination from someone who has taken it or giving information about the content of an examination to someone who has yet to take it. This dimension is labeled Collusion.

The fourth factor relates to working with other students on an individual assignment or project and having someone else check over a paper without the instructor's permission. This factor is labeled Illicit Collaboration. It is important to note that though this factor captures aspects of learning that are valued by educators as useful techniques of learning, the questionnaire does specify that the projects or papers are individual assignments and the checking of the paper by a third party was without the approval of the professor. In the light of the usefulness of collaboration as a learning tool, this will be discussed more extensively in the discussion section of the paper.

Uncovering Motivators of Cheating

Factor analysis was also applied to the twelve reasons cited for academic dishonesty. The analysis extracted three factors with eigenvalues greater than one. The results of the factor analysis after applying the varimax rotation procedure are summarized in Table 2.

The first factor relates to students safeguarding their self-interest, attempting to benefit themselves by obtaining a higher grade without putting in the requisite effort in the belief that no one will be hurt and there is little risk of getting caught or punished. This factor is labeled Grade Pressure.

The second factor relates to students being influenced by their environment or culture on campus and justifying the behavior by placing the blame elsewhere. This factor captures the variables pertaining to cheating because of peer pressure and the campus culture where everyone is perceived to do it, the thrill or challenge of cheating, perception of the material, assignment or task as being irrelevant and the instructor as being indifferent. This factor is labeled Campus Culture.

The third factor relates to difficulties faced by the student in the form of the limited amount of time they have left to devote to academic activities and to the inherent difficulty of the course material. This factor pertains to true difficulties students have and is therefore labeled Hardship.

Table 2: Factor Analysis Results of Motivations for Cheating			
Variable	Factor 1	Factor 2	Factor 3
Needs/wants a higher grade	**0.759**	0.046	0.412
No one is hurt by this behavior	**0.752**	0.234	-0.077
Had the time but did not prepare adequately	**0.692**	0.095	0.052
Low risk of getting caught or punished	**0.571**	0.208	-0.149
Peer pressure	-0.011	**0.800**	0.022
Thrill or challenge	0.061	**0.683**	-0.098
Material, assignment or task is irrelevant	0.324	**0.617**	0.039
Everyone does it	0.085	**0.582**	0.246
Instructor is poor or indifferent	0.275	**0.581**	0.141
Difficulty of material, course, exam	0.047	0.053	**0.845**
Time pressure	0.037	0.119	**0.786**
Factor Labels	Grade Pressure	Campus Culture	Hardship

Investigating key determinants of academic dishonesty

Separate regression models are specified for each of the salient dimensions of academic dishonesty. Independent variables were obtained from a review of the literature. The following hypotheses were developed in relation to each independent variable:

GPA: The literature indicates that better students tend to cheat less. In other words, a higher GPA varies inversely with the amount of cheating (Stern & Havleck, 1986; Graham et.al., 1994; Genereux & McLeod, 1995; Brown, 1995; Allmon, Page & Roberts, 2000). This leads to hypothesis 1:

H1: GPA will vary inversely with Flagrant Cheating, Insidious Cheating, Collusion and Illicit Collaboration.

WORK: The next independent variable (WORK) is a measure of the amount of time the student typically spends in a week during a typical semester in activities related to a paying job or jobs. Several studies have found that lack of time to devote to academics is a key reason for cheating (Brown, 1995; Davis & Ludvigson, 1998). As such, it is hypothesized that the more time a student allocates to working on paying jobs during

the semester, the less he or she is able to devote to academic pursuits and leads us to the next hypothesis:

H2: WORK is positively related to Flagrant Cheating, Insidious Cheating, Collusion and Illicit Collaboration.

SALARY: The variable SALARY captures the salary expectations of the students upon graduation. Cheating has been linked to the need to get ahead (Roig & Ballew, 1994; Clement, 2001; Large, 2004). Using data drawn from the Chicago public schools, Jacob and Levitt (2003) found that the frequency of teacher cheating is strongly and positively sensitive to even small changes in incentives. This leads to the next hypothesis:

H3: SALARY is positively related to Flagrant Cheating, Insidious Cheating, Collusion and Illicit Collaboration.

AGE: The current literature shows that younger students tend to cheat more because they lack interest in some of their lower level classes (Lord & Chiodo, 1995) and are more immature and less committed to academia (Diekhoff et al., 1996). The next hypothesis investigates the relationship between age and each of the four different types of cheating:

H4: AGE is inversely related to Flagrant Cheating, Insidious Cheating, Collusion and Illicit Collaboration.

GRADE PRESSURE, CAMPUS CULTURE, HARDSHIP:

GRADE PRESSURE is the desire of students to obtain a higher grade sometimes without the warranted effort and often with the misconception that the cheating behavior is hurtful to no one. It is therefore hypothesized that GRADE PRESSURE is positively related to all four forms of cheating. CAMPUS CULTURE captures the culture on campus and in the classroom that allows, facilitates or is used by students as justification of deviant behavior and is hypothesized to be positively related to all four dimensions of cheating. HARDSHIP captures the inherent difficulty the student faces in either understanding the material or having adequate time to devote to its study and is hypothesized to be positively related to cheating (Murdock, 1999). The hypotheses related to the three dimensions of motivation of cheating are summarized as follows:

H5-H7: GRADE PRESSURE, CAMPUS CULTURE and HARDSHIP are positively related to Flagrant Cheating, Insidious Cheating, Collusion and Illicit Collaboration.

The results of the regression models are exhibited in Table 3.

Table 3: Regression Results

Variable	Flagrant Cheating		Insidious Cheating		Collusion		Illicit Collaboration	
	Parameter Estimate	t-score	Parameter Estimate	t-score	Parameter Estimate	t-score	Parameter Estimate	t-score
GPA	-0.214	-2.760*	-0.11	-1.389	0.005	0.071	0.082	1.043
Work	0.117	1.535**	0.162	2.075*	-0.007	-0.086	0.148	1.914*
Salary	0.018	0.235	-0.048	-0.624	-0.055	-0.73	0.115	1.497**
Age	-0.144	-1.800**	-0.057	-0.695	-0.154	-1.948*	-0.161	-1.981*
Grade pressure	-0.095	-1.264	0.044	0.571	0.119	1.612**	0.12	1.584**
Campus culture	0.045	0.586	0.032	0.406	0.026	0.346	0.055	0.709
Hardship	-0.044	-0.57	0.104	1.312	0.29	3.777*	0.049	0.62

* Significant at the p=0.05 level
** Significant at the p=0.10 level

The results indicate that students with higher GPAs and older students tend to engage in less Flagrant Cheating. The estimated parameter for Age indicates that there is a negative relationship between age and cheating. This suggests that older students engage in less cheating in each of the four different categories of cheating. The result is significant at the p=.05 level for Collusion and Illicit Collaboration.

The amount of time students commit to paid employment is positively related to the amount of Flagrant Cheating, Insidious Cheating and Illicit Collaboration. This result is not should not come as a surprise because students who tend to devote substantial time outside of school on paid employment tend to have less quality time to devote to school work and assignments. It is interesting to note that the results indicate there is no difference in the amounts of Collusion among students who work extensively in paid jobs compared to those with more time to devote to their studies if they choose.

GRADE PRESSURE directly and positively relates to greater amounts of Collusion and Illicit Collaboration. Students who feel the need for better grades often without wanting to put in the requisite amount of effort tend to engage in more Collusion and Illicit Collaboration. This fear of

losing out by not cheating is evident not only in the area of obtaining higher GPAs but is also seen in their fear of losing out on future opportunities as measured by expected salaries. Results indicate that students who have higher expectations of future salaries engage in more Illicit Collaboration to boost their performance.

The results also show that HARDSHIP is related positively and significantly to more Collusion. This is significant at the p=0.05 level.

DISCUSSION

This study began with identifying the salient dimensions of cheating. By doing so, it was able to comb out more clearly how different forms or dimensions of cheating are related to student characteristics as well as to different forms or dimensions of motivations.

For example, the literature has shown that GPA is inversely related to cheating. The results of this study point clearly to the fact that it is only significantly related to Flagrant Cheating. Brighter students tend not to engage in Flagrant Cheating. However, there is no significant difference in the amounts of Insidious Cheating, Collusion and Illicit Collaboration among brighter students and their counterparts.

The literature has also shown that age is inversely related to cheating. The results show that younger students tend to engage in more Flagrant Cheating, Collusion and Illicit Collaboration. Interestingly, the study also indicates that there is no significant difference in the amount of Insidious Cheating among students of different ages. Included in the notion of Insidious Cheating are plagiarism and the blatant misrepresentation of their efforts in group assignments or projects submitted. The latter is the problem of "free-rider" prevalent in student group projects.

This study also highlights how different motivations of cheating are related to the dimensions of cheating. Collusion tends to be higher in situations where students feel pressured for higher grades and where they are experiencing hardship. Here students try to help each other either by the passing or receiving of unauthorized examination information. Illicit Collaboration tends to be higher where students feel a pressure for grade.

Included in the dimension of Illicit Collaboration are activities of working with fellow students on assignments that the instructor has identified as individual assignments and having someone check over a paper without the instructor's permission. In many papers and books promoting classroom learning, the first two activities have often been put forward as useful techniques that help students learn. This finding highlights how important it is for instructors to clearly articulate for each assignment or project, how much (if any) discussion is allowed among students and if editing or outside review of student papers is acceptable. This is especially pertinent among freshmen students whose high school definition of academic misconduct may differ in some respects from that in college. For example, Kate Kessler (2003 p60) writes that some students find that "(I)ts sometimes hard to tell

if the teacher specifically wants you to *not* work with other people," and that they were often "afraid to ask."

The results also point to some policy implications. One of them is the need to nurture a college culture that teaches, supports and rewards honesty. Results show that younger students tend to engage in more Flagrant Cheating, Collusion and Illicit Collaboration. The literature often shows that ignorance is a common reason given for engaging in these behaviors. For example, Evans and Craig (1990) conducted research on middle and high school students and found that both groups were unclear about what constituted academic misconduct; more disturbing than this was their finding that teachers also exhibited some confusion about aspects of cheating especially in the area of plagiarism. This points to how important it is for the college teachers and administrators to focus on education rather than punitive measures in their attempt to eradicate cheating from their campus. Freshmen should be educated about it before they get tainted by the prevalent culture on campus. This could be conducted as part of a freshman symposium class. In addition, each class syllabus should include specific information about what constitutes academic dishonesty and the penalties. The education of students about academic honesty should stretch beyond the classroom to the areas where most of our young students tend to spend much of their time such as study halls and residence halls. These should be targeted as prime spots to inculcate the college culture of honesty.

This study was conducted in a private religious university. One disconcerting finding of the study is that despite exposures of college students to ethics and values education, cheating among teacher education students still persists. This finding is congruent with Brown and Choong (2003) who compared management students in the public and private Catholic universities and found little noticeable difference between the students despite considerably more emphasis being placed on ethics and values at the private Catholic university. As Bruggeman and Hart (1996, p. 340) stated, "It is generally assumed that religious schooling is connected in some way with the development of higher moral values and thus promotes a greater tendency to behave morally."

Determining the reasons why more exposure to ethics and values did not lead to more honest behavior among students was beyond the scope of this study. The absence of a relationship might be explained in several ways. One possibility is that a threshold level of exposure exists that has to be met before any noticeable change in behavior occurs. It is possible that the threshold has not been reached. Perhaps an even greater emphasis on ethics and values in existing courses, the addition of more courses to the curriculum, or different teaching methods would eventually bring about the desired behavioral change.

Bruggeman and Hart (1996) contend that moral reasoning, or the cognitive process used in reaching moral conclusions, can be differentiated from moral behavior, or overt actions in situations that call for moral judgment. Knowing what is right does not always lead to doing what is right. Factors in addition to moral reasoning capability influence behavior. Perhaps the students have highly developed moral reasoning, but their behavior is dominated by other factors. For example, the cost

of attending the religious university is considerably high thus putting more pressure for success, or higher grades, on the students.

A third possible explanation is that the students have not made the connection between the ethics and values education they have received and their responsibilities as university students. The education might have been either too general or too situation specific for the students to relate it to their academic behavior.

This finding point to an important policy implication. As Bruggeman and Hart (1996) conclude, the inability of researcher to find a consistent relationship between ethics and values education and more honest behavior does not imply that religious education is ineffective or does not provide a basis for a strong moral commitment. They suggest that the results should compel educators to examine how they are going about teaching ethics and values so as to improve its effectiveness. This means that the curriculum, content and delivery of ethics and values education need to be scrutinized and overhauled if we are to hope for more moral behavior in our workplace.

The college culture of cheating has been found to be prevalent among students in business, engineering, medicine and the arts and science. The education department is not exempt from this problem. However, the education department prepares individuals who will teach our children; their graduates will be the teachers who have daily contact with our young children and have the ability through their interaction to exert a positive influence. They hold the key to breaking this troubling cycle of cheating in America. As such, teaching them about what constitutes dishonest academic practices and inculcating honesty among our future teachers is of paramount importance.

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SELF-SELECTION INTO DEGREE PROGRAMS: DIFFERENCES IN PREFERRED LEARNING STYLES BETWEEN ONLINE STUDENTS AND TRADITIONAL STUDENTS

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ABSTRACT

This study is an exploratory investigation of students' propensity to self-select into web-based degree programs based on their preferred styles of learning. The learning styles of students enrolled in several cohorts of an accredited, web-based MBA program were compared with students in an equivalent traditional MBA program to determine if there were any differences in learning styles between the two groups, which might indicate that students with particular learning styles self-select into different types of programs. Results indicated that traditional and web-based students differed on one dimension of learning styles, with online students exhibiting a more intuitive style of learning than traditional students.

INTRODUCTION

Web-based education has gained in popularity in recent years and the trend is projected to continue. Recently, the Sloan Center for Online Education reported that online education is continuing to increase enrollments and is doing so at a far faster rate than higher education overall. In the fall of 2002, 1.6 million students took at least one course online and that number increased to 2.4 million in fall 2004 (Allen & Seaman, 2005). In addition to a plethora of courses now being offered online to supplement traditional brick-and-mortar programs, some universities are also offering degrees that can be completed entirely online. In these new online programs students can complete all of the coursework for a degree via the web without ever attending classes on-site. Indeed, recent data indicate that one-third of the students who take at least one course online take all of their courses in this manner (Online, 2003) and business schools are leading the trend. In 2003, 48.9% of public institutions offered online programs for a degree and the most popular web-based degree among those institutions was the Masters of Business Administration. (Kiernan, 2003; Online, 2003). These increases in MBA enrollments come at when enrollments in traditional MBA programs appear to be decreasing (Berggoetz, 2004). Teaching has moved from a bricks and mortar environment to a "bricks

and clicks" one and, given the expansion of programs that can be taken entirely online, it seems that many institutions are embracing a "clicks only" model.

Given that online education is new and that the enrollment trend is upward (Kyle, Reuben, & Festervand, 2005), issues regarding how individual students interact with and respond to the online environment have not been thoroughly investigated, while, at the same time, these issues are becoming increasingly important. One issue that deserves attention is the interaction of learning styles and learning environments. The online environment represents a new, untested arena for teaching and learning and it represents a different learning environment with its own challenges when compared to traditional educational approaches. In contrast to the traditional classroom environment, there has not been time yet to thoroughly investigate relationships in this new context. As a result of its relative "newness," there is a gap in the literature regarding the interaction of learning styles and the online environment for education. Given the newness of this delivery method and its growing importance to business education, our study investigates whether students who select web-based degree programs may evidence different preferred styles of learning when compared to students who choose traditional programs.

WEB-BASED LEARNING

Web-based learning is a relatively new phenomenon, but distance learning is not. The concept of learning-at-a-distance (DL) has been around for quite some time, in various forms, and web-based learning is but the latest, and possibly most technologically advanced, manifestation of this phenomenon. Correspondence courses were an early, low-technology version--but one that still exists--with severe restrictions on the interaction between student and instructor. Other forms of DL that allow for only severely limited or delayed interaction include video-taped lectures and television broadcasts. Closed circuit television broadcasts are a more recent improvement, allowing for a form of face-to-face interaction and immediate feedback, but, depending on the quality of the technology employed, the interaction and feedback could still be greatly limited. The advent of the internet has, however, according to the proponents of web-based learning, allowed a degree of interaction that, while still not as information-rich as true face-to-face interaction, exceeds what could be achieved with earlier forms of DL, allowing both synchronous and asynchronous interaction among students and between students and instructors.

Web-based learning has also provided fertile ground for research, spawning an ever-growing body of research investigating the intersection of the internet and education. A popular topic has been the attempt to determine the factors that affect student learning. An important element of successful online classes is a defined structure and a high degree of organization (Arbaugh and Benbunan-Fich, 2003; Schweizer, 2004). An interactive teaching style is important (Arbaugh, 2000a) and instructors must be trained in the online delivery of education (Schweizer, 2004). Some studies have reported

high levels of student learning (Arbaugh, 2000a) with some reporting that student learning may possibly be even higher than in traditional classrooms (Hiltz and Wellman, 1997).

Some researchers have compared student learning-- as well as other variables-- in online courses and traditional courses. For example, Arbaugh (2000b) found that for the most part there were no significant differences between the virtual classroom and the physical classroom on several measures. The findings indicated that in regard to interaction quality, interaction dynamics, and performance on exams, students in an online MBA course were not much different from students taking the same course in a traditional format. In an early attempt to compare virtual and traditional classrooms Hiltz and Wellman (1997) found that students were more satisfied with virtual classrooms on several dimensions, including access to professors and the overall quality of their educational experience, and they concluded that student learning-- in the form of mastery of course material-- in online environments was equal to or superior to traditional environments.

While there has been a fair amount of literature investigating whether the online environment is an effective one, there has not been much done on the nature of the students who enroll in these programs. Students who choose to take degree programs online are choosing to involve themselves in a new venture. When choosing a program that is offered entirely online, students must self-reflect and decide whether they will "take the plunge" and enter into a learning environment with which they either have little or no experience. They must ask themselves whether they think they can learn and perform well within an online learning environment. Our study investigates this self-selection. We think that students may have some unconscious "awareness" of the way they learn (their "learning style") and consequently the students who select an online degree may differ systematically in their learning style preference from those who choose a traditional bricks and mortar program. Our study seeks to determine if online students exhibit different preferred styles of learning than "traditional" students.

LEARNING STYLES

In the traditional classroom environment, educators have long been interested in the interaction of teaching methodologies and learner experiences. During the 1970s, research into how learners respond to the learning environment began to shift from cognitive styles to learning styles (Riding & Cheema, 1991; Loo, 2002). "Learning styles" concern the way in which the learner interacts with stimuli in the learning context (Riding & Cheema, 1991). The basic premise is that the way in which people learn is different for different individuals; different people perceive and process information using different approaches (Kolb, 1984), with the result being that course content might be understood and perceived differently by different students.

Business education researchers also have recognized the importance of learning styles and have responded with a variety of teaching and learning methods in response to this research on learning styles (Ronchetto, Buckles, Barath, & Perry, 1992). Prior research has investigated the effect

of environmental conditions on learning styles; it has been assumed that learning styles could exert significant influence on many of the choices that students make. Some of this research has examined whether variation in variables like academic performance and academic interests (i.e. choice of major) could be explained by variation in learning styles. The rationale being that certain majors, such as, engineering (Felder, 1988) and business (Hallock, Satava, &LeSage, 2003), with their quantitative nature, might attract students with a preference for particular styles of learning that would be particularly suited for these majors. In the business discipline, investigation of the effects of learning styles on choice of majors has been limited, with much of the focus on accounting majors (Loo, 2002). Clump and Skosbergboise (2003) have also addressed the effects of learning styles on majors, postulating that conflicting results among studies examining learning style differences in majors--as well as other variables such as gender and upper or lower divisional standing-- might be explained by inter-university differences in the samples.

Recently, Hallock, Satava, and LeSage (2003) suggested that particular learning styles might be better suited for online courses, and that educators should be able to design online curricula that enhance learning based on online students' preferred learning style. And recently particular preferences for learning style have been shown to be correlated with academic performance in an online environment (Beadles and Lowery, 2004).

If certain learning styles are particularly suited for online learning in the virtual classroom, then other learning styles should be better suited for "traditional" learning in the physical classroom. We might also expect to find significant differences between the preferred learning styles of online students and traditional students, assuming that students will self-select into the mode of educational delivery that best suits their preferred style of learning. Our study investigated the effect that learning styles may have on the choice of educational approach by assessing the differences in learning styles between students who chose to enroll in a traditional program versus those who chose a web-based program.

Based on the advent of web-based learning as a new environment for education and Hallock et. al's (2003) suggestion that web-based education may be better suited for students with particular learning styles, we conducted an exploratory investigation to assess whether learning style might be associated with the choice of educational delivery method. We assessed four different dimensions of learning style: active versus reflective learning, sensing versus intuition, visual versus verbal learning, and sequential versus global learning.

METHOD

The sites for the study consisted of a traditional brick and mortar MBA program offered by a medium-sized university located in a southeastern state in the United States and a web-based MBA program offered by a consortium of five universities located in the same state. In the case of the web-based program, the schools of business at the five universities (which were traditional brick and mortar

universities) pooled their resources in order to offer a degree that students could complete online. Students were required to attend an initial weekend-long orientation session at a common site (a centrally located university in the consortium), but after the initial meeting, the students were never again required to meet in a face-to-face environment with either the instructors or their fellow students, as the remaining requirements for the degree were satisfied solely in an online environment. Subjects were 56 students enrolled in the web-based program and 56 students enrolled in the traditional brick-and-mortar program (the equality of the sample sizes was coincidental; we did not employ matched samples). Both groups of students completed a learning styles inventory by accessing a website as directed by the professor. The students completed the instrument, received their results, and then forwarded the results to their professor.

A requirement for all courses in the online degree program was that all relevant materials must be available online. Consequently, the particular learning styles inventory that was chosen was Richard Felder's Index of Learning Styles (Felder & Silverman, 1988), which is available online. Felder's scale has extensively used in research on learning styles and the psychometric properties of the scale have been investigated and validated. The scale has been used by Felder and others to investigate the learning style preferences of various populations of students, including engineering students, business students, language arts students, biology students, and students of the humanities (Felder & Spurlin, 2005; Zywno, 2003).

Felder's scale is "a self-scoring instrument that assesses preferences on the Sensing/Intuiting, Visual/Verbal, Active/Reflective, and Sequential/Global dimensions" (Felder & Henriques, 1995, p. 21). Felder describes these four learning styles as 1) the type of information that students preferentially perceive: sensory--sights, sounds, and physical sensations, or intuitive--memories, ideas, and insights; 2) the sensory channel through which external information is most effectively perceived: visual--pictures, diagrams, graphs, and demonstrations, or verbal--sounds, written and spoken words and formulas; 3) how students prefer to process information: actively-- through engagement in physical activity or discussion, or reflectively--through introspection; and 4) how students progress toward understanding: sequentially--in continual steps, or globally--holistically, in large jumps. (Felder, 1993).

The learning style preferences for the students in both the online program and the traditional program were collected and their scores for each of the styles were coded between one and twelve to reflect preferences along the continuum for each of the subscales. The results of the learning style inventory were analyzed to determine whether there was a significant difference between the learning styles of those enrolled in the traditional degree program and those who chose the online degree program.

RESULTS

Table 1 contains the means and standard deviations for both the online students and the traditional students for each of the learning style dimensions. Table 1 also contains the results of t-tests for significant differences between the groups. The only learning style dimension that exhibited a significant difference between the two groups was Sensing/Intuition (two tailed p-value<.01). There were no group differences on the Active/Reflective, Visual/Verbal, and Sequential/Global dimensions. Mann-Whitney U tests returned the same pattern of results.

Traditional students scored lower on the Sensing/Intuition dimension, indicating that they have a preference for perceiving the world and gathering information through the senses (sensing), as opposed to indirect perception through speculation, imagination, and hunches (intuition). According to Felder and Silverman, "[s]ensors like solving problems by standard methods and dislike "surprises"; intuitors like innovation and dislike repetition. Sensors are patient with detail but do not like complications; intuitors are bored by detail and welcome complications; sensors are good at memorizing facts; intuitors at good at grasping new concepts. Sensors are careful but may be slow; intuitors are quick but may be careless." (1988, p.676).

Although we stated no a priori expectations concerning the direction of the differences between online and traditional students, the findings are rational in the sense that students who choose a more traditional program would likely be more sensing in nature, since sensors prefer standard methods, while students who prefer at least some innovation and aren't concerned with complications would be more likely to choose a relatively new, innovative method of instruction that has the potential for complications due to new technology, etc. Also, students who are more intuitive in nature and who therefore tend to be a little "quicker" may well prefer an online environment with its more instantaneous nature regarding access to information, etc. Students were recruited to the web-based program on the premise that it was an online degree program allowing for flexibility and the opportunity to complete a degree without the restrictions associated with a traditional classroom. Information about the program indicated that, "Unlike an on-campus MBA program, this interaction takes place online rather than within the classroom walls. Students interact via e-mail questions to the professor, threaded discussions online, or a chat session. Teaching also takes place via the online content, which may be a PowerPoint presentation, an article, or an assignment to read a selection in a textbook." (Anonymous, 2006)

Previous research has shown an intuitive nature to be associated with better academic performance in an online environment. In a study of course-related performance among students enrolled in an online course in a web-based MBA program, students who were relatively more intuitive in nature performed better than those who were more sensing in nature (citation temporarily omitted). Thus, this dimension of learning style appears to be an important correlate of learning in an online environment. Intuitors seem to be more likely to choose to enroll in a web-based program, and

they appear to be more successful in the online environment than those students who are not as intuitive in nature.

Given that the program was marketed as new and innovative, it is not surprising that intuitors might be attracted to the program. It is also reasonable to conclude that the online students would be less likely to differ from the traditional students on the other three dimensions of learning style because these other dimensions (the type of information perceived, the sensory channel through which information is perceived, and preferences for processing information) were not represented to them as being salient to their decision to select a program; thus, these dimensions of learning style would be less likely to influence students to choose the online environment as their method of educational delivery system

DISCUSSION

Interaction with students regarding the Learning Styles Inventory indicated that none of the students participating in this study had ever completed an instrument designed to assess their learning styles before taking Felder's learning styles inventory for these courses. As we expected, it appears that students may have an unconscious sense of how they may learn and, when given the chance, may self-select into program that appears to "fit" their particular learning style. The online program was marketed as innovative, flexible, creative, and new. Not surprisingly, it appears that this marketing strategy did attract students who had a preference in their learning style for intuitive learning. Given that some research has shown that the growth in online programs is due to the attraction of a different base of students (Mangan, 2001) it may be that the online course are attracting a different type of learner and may appeal to those who favor a more intuitive style of learning.. If this is true, then perhaps online programs should target those with intuitive learning styles and market their programs accordingly. Marketing online programs as different and creative would appeal to these types of students and extend the customer base for MBA education.

The continued development of online courses and their acceptance in the mainstream combined with the general populace's greater exposure to the Internet may mean that, in the future, students might not perceive the online environment to be as innovative and/or risky and so its appeal to intuitors may change. In any case, it appears that the use of a learning styles inventory may be helpful in increasing student success and comfort in an online environment. The self awareness gained from students' understanding of their learning style and how it might interact with their perceptions of the online learning experience can be beneficial and it should inform the way in which online degree programs should be structured. For instance, students could be assessed during the orientation process and then made aware of their predispositions regarding their learning style. Once armed with this information, they may then realize that some of their discomfort in the new environment may be due to preferences regarding learning rather than to the environment itself. Secondly, as online programs expand to include more students and a greater variety of students, the structure of the learning

environment could be ordered in such a way that it takes into account the various learning styles of students. More particularly, early courses should be developed in a manner that seeks to "grow" the students in the environment. In addition, the professors teaching those courses and the administrators responsible for the programs should be aware that tensions may arise because of a learning styles conflict--rather than because of poor teaching or student-professor conflict-- and attempt to ease students into the new environment while preparing them for greater uncertainty in future courses. Finally, and perhaps most importantly, potential students might be asked or encouraged to complete a learning styles inventory in order to be made explicitly aware of their own preferred learning style prior to choosing their degree program. If they are armed with this information early enough in the decision-making process, they may be able to make a more effective decision and avoid one that could prove costly. Postponing the inventory until they are enrolled in a program may be too late for those who are not predisposed to that particular program, particularly if, in order to enroll in the program, they have resigned from a job, changed jobs, or have moved.

Much of the research on online courses show them to be as effective as brick and mortar courses and those studies often conclude that online education is a worthwhile endeavor and should be pursued. Our study has shown that different students prefer different environments for learning and, consequently, it may be that the ideal solution lies somewhere between the two alternatives. Perhaps, instead of teaching either online or in a classroom, the ideal way to adjust for the varied learning styles that are represented in both environments would be to teach in a blended fashion. That is, a combination of online and classroom environments may provide a better educational experience than either alone.

CONCLUSIONS

This exploratory investigation to assess whether students' learning styles can predict the choice of educational delivery method indicates that learning styles may have an effect on the choice of educational approach. There appear to be differences in learning styles between students who chose to enroll in a traditional program and those who chose a web-based program. It seems that students with particular learning styles may be better suited for enrolling in online courses. Students who are relatively more intuitive in nature may be more likely to choose web-based programs while students who are sensors prefer traditional programs. Considering the results of this study together with the results of previous research which shows that students who are more intuitive perform better in an online environment, we can conclude that learning styles might be an important determinant of the choice educational delivery method.

Table 1: Means, Standard Deviations, and T-test Results				
Learning Style Dimension	Group	Mean	Standard Deviation	t-value
Active/Reflective	Traditional	6.75	2.28	-0.842
	Web-based	7.11	2.10	
Sensing/Intuitive	Traditional	3.81	2.17	-3.195*
	Web-based	5.34	2.87	
Visual/Verbal	Traditional	5.43	2.75	0.129
	Web-based	5.36	3.08	
Sequential/Global	Traditional	5.66	2.50	-0.779
	Web-based	6.03	2.59	
* p<.01, 2 tailed test				

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WHAT IS THE MOST EFFECTIVE WAY TO KEEP TEACHERS?

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ABSTRACT

The analysis of the Teacher Follow-up Survey conducted by the National Center for Education Statistics reveals the three most effective steps that former teachers think schools should take to encourage teachers to remain in teaching. Providing higher salaries tops the three most effective steps, followed by dealing effectively with student discipline and giving teachers more authority in school. The results provide significant implications for policy interventions aimed at retaining teachers.

Keywords: teacher attrition, educational policy

INTRODUCTION

Teacher shortages have often received great attention in education because schools chronically experience an inability to staff classrooms with qualified teachers. About half of the new teachers eventually leave teaching within the first five years (Wise, Darling-Hammond, & Berry, 1987). Reports from the National Center for Education Statistics (NCES) revealed that the proportion of public school teachers who left the profession increased in the 1999–2000 and 2000–01 school years, compared to that in the 1990–91, 1991–92, 1987–88, and 1988–89 school years (Luekens, Lyter, & Fox, 2004). The problem of teacher shortage has recently become more prominent because two demographic trends are expected to exacerbate the problem in the United States. Many teachers from the baby boomer generation will retire in the near future; and student population will increase in the meantime. The National Center for Educational Statistics projects that student enrollment in kindergarten and first through twelfth grades will reach approximately 56.7 million by the year 2013. About 47.7 million teachers will be needed to meet the demand for the increased student enrollment (Gerald & Hussar, 2003). It is predicted that there will not be enough teachers to meet the demand from the increased student enrollments (Darling-Hammond, 1984; Gerald & Hussar, 1998; National Academy of Sciences, 1987).

The education community has now come to realize that this much-publicized teacher shortage does not stem from insufficient teachers in the general population but rather from high teacher turnover. Teacher turnover has historically hovered around fourteen percent, which is higher than that of other professions. Teachers move in and out of schools as if through a "revolving door", which

continuously creates excessive demand for replacement teachers (Ingersoll, 2001). Since the early 1990's the number of teachers who exit the teaching profession has surpassed the number of teachers who entered the profession. Schools are always fighting an uphill battle to staff classrooms with qualified teachers (Darling-Hammond, 2003).

Policy interventions have traditionally used sign-on bonuses and shortcut licensing to increase teacher supply. These measures alleviate the symptoms but do not resolve the problem. A growing body of evidence indicates that teachers who go through alternative certification to become teachers lack adequate training to be successful in their new profession, and that they are more likely than other teachers who graduate from regular teacher education programs to leave the teaching profession (Darling-Hammond, 2003). A better approach to resolving the problem of teacher shortage would be to retain teachers in education and decrease the demand for replacement teachers (Ingersoll and Smith, 2003).

So there is a strong need to find effective ways to keep teachers. The former teachers who left the teaching profession may hold the answer to the question. They knew firsthand what deterred them from having a fulfilling career in education and what could otherwise have been done to keep them in teaching. Although former teachers may have left the teaching profession for a variety of reasons, summarizing their opinions can uncover some common concerns that provide clues to what should be done to improve their professional commitment.

In search of clues the Teacher Follow-up Survey (TFS) asked former teachers what is the most effective step that schools might take to keep teachers. Using nationally representative samples from the United States, the National Center for Education Statistics has conducted the Schools and Staffing Survey (SASS) and the TFS four times since the 1980's. The TFS for 1995 surveyed all the former teachers who had taken the SASS in the previous year and had left teaching the next year. One questionnaire item of the TFS gave the former teachers sixteen steps that schools might take to encourage teachers to remain in teaching:

1) Providing higher salaries and/or better fringe benefits;
2) Improving opportunities for professional advancement;
3) Dealing more effectively with student discipline and making schools safer;
4) Giving teachers more authority in the school and in their own classrooms;
5) Increasing standards for students' academic performance;
6) Providing better resources and materials for classroom use;
7) Decreasing class size;
8) Giving special recognition and/or special assignments to excellent or outstanding teachers;
9) Reducing the paperwork burden on teachers;
10) Providing more support for new teachers (e.g., mentor teacher programs);
11) Increasing parent involvement in the schools;

12) Reducing teacher workload;
13) Providing merit pay or other pay incentives to teachers;
14) Improving opportunities for professional development;
15) Providing tuition reimbursement for coursework required for certification or career advancement;
16) Revising health insurance program to include stress reduction seminars, counseling, and physical fitness options.

The questionnaire asked former teachers to choose one item from the above sixteen steps as the most effective in their opinion. Teachers' choices were tallied for each step, and the counts of votes for each step are listed in Table 1.

Table 1: Vote counts for "What is the Most Effective Way to Keep Teachers?"

Sixteen Suggested Steps	Beginning Teacher		NoviceTeacher		Experienced Teacher		All teachers	
	Count	%	Count	%	Count	%	Count	%
1. Providing higher salaries and/or better fringe benefits	67	37%	110	40%	685	37%	862	37%
2. Improving opportunities for professional advancement	7	4%	10	4%	53	3%	70	3%
3. Dealing more effectively with student discipline and making schools safer	41	23%	45	16%	405	22%	491	21%
4. Giving teachers more authority in the school and in their own classrooms	13	7%	17	6%	183	10%	213	9%
5. Increasing standards for students' academic performance	5	3%	8	3%	59	3%	72	3%
6. Providing better resources and materials for classroom use	0	0%	12	4%	27	1%	39	2%
7. Decreasing class size	10	6%	14	5%	122	7%	146	6%
8. Giving special recognition and/or special assignments to excellent or outstanding teachers	3	2%	7	3%	33	2%	43	2%
9. Reducing the paperwork burden on teachers	3	2%	4	1%	59	3%	66	3%
10. Providing more support for new teachers (e.g., mentor teacher programs)	9	5%	16	6%	38	2%	63	3%

Table 1: Vote counts for "What is the Most Effective Way to Keep Teachers?"								
Sixteen Suggested Steps	**Beginning Teacher**		**NoviceTeacher**		**Experienced Teacher**		**All teachers**	
	Count	%	**Count**	**%**	**Count**	**%**	**Coun t**	**%**
11. Increasing parent involvement in the schools	9	5%	8	3%	46	2%	63	3%
12. Reducing teacher workload	4	2%	8	3%	78	4%	90	4%
13. Providing merit pay or other pay incentives to teachers	4	2%	7	3%	23	1%	34	1%
14. Improving opportunities for professional development	3	2%	5	2%	24	1%	32	1%
15. Providing tuition reimbursement for coursework required for certification or career advancement	1	1%	3	1%	8	0.4%	12	1%
16. Revising health insurance program to include stress reduction seminars, counseling, and physical fitness options	1	1%	2	1%	7	0.4%	10	0.4%
Number of Participants	180		276		1850		2306	

Some interesting findings emerged from the analysis of teachers' answers regarding the most effective step to keep teachers. Three steps accounted for sixty-seven percent (67%) of teachers' votes. Arranged in descending order of vote count, the three steps are: 1) providing higher salaries and/or better fringe benefits; 2) dealing more effectively with student discipline and making schools safer; 3) giving teachers more authority in the school and in their own classrooms. Thirty-seven percent (37%) of the former teachers thought that providing higher salaries is the most effective step that schools might take to encourage teachers to remain in teaching. Another twenty-one percent (21%) of them chose dealing more effectively with student discipline as the most effective step to keep teachers. Finally, nine percent (9%) selected giving teachers more authority in school.

The ranking of the three most effective steps remains the same irrespective of the varying years of teaching experience among the former teachers. Beginning teachers (1-2 years of teaching experience), novice teachers (3-5 years of teaching experience), and experienced teachers (more than 5 years of teaching experience) all reached a consensus on what are the most effective steps to keep teachers. For beginning teachers, "providing higher salaries and/or better fringe benefits" was the number one choice (37%), followed by "dealing more effectively with student discipline problems and making schools safer" (23%), and "giving teachers more authority in the school and in their own classrooms (7%)." The three steps received 40%, 16%, and 6% of teachers' votes among novice

teachers, and 37%, 22%, and 10% among the experienced teachers. In the follow-up statistical analysis a simple chi-square test was used to test whether there was any association between the years of teaching experience and the teachers' choice of the three most chosen steps. A non-significant chi-square at the five percent significance level indicates that teachers' choice of the three steps does not depend on their years of teaching experience. In other words beginning, novice, and experienced teachers uniformly accord the same proportional weights to the three steps to retain teachers.

Table 2: Vote counts of the three most chosen steps among teachers

	Beginning Teachers	Novice Teachers	Experienced Teachers
(1-2 years)	(3-5 years)	(more than 5 years)	
Step 1	67	110	685
Step 3	41	45	405
Sept 4	13	17	183

Note: Chi-square statistic , df=4, $p > .05$

Teachers' answers regarding the most effective way to keep teachers provide some insights for policy interventions aimed at retaining teachers. "Providing higher salaries and/or better benefits" tops the sixteen steps that schools can take to keep teachers. This is consistent with other findings from previous research, which often found that salary was the most significant predictor of teachers' career longevity (Murnane, Singer, & Willett, 1991; Shen, 1997; Stinebrickner, 1998; Theobald, 1990). On average, teachers' salaries are about 20 percent lower than that of other professionals with comparable educational experience in the private industry (Darling-Hammond, 2003). Low salaries appear to concern all teachers irrespective of their years of service because beginning, novice, and experienced teachers who left teaching all chose providing higher salaries as the most effective way to keep teachers.

Although increasing salaries is a worthwhile strategy to retain teachers, there are significant challenges to its successful implementation. First, it will be very expensive to increase teachers' pay across-the-board to match the salary level of other professions given the sheer size of the teaching work force (Ingersoll and Smith, 2003). Second, merit-based pay programs have often in the past fallen victim to a variety of quagmires, including difficulties in evaluating personnel, union opposition, peer competition, and budget crunches (Morice and Murray, 2003). Also, there is not strong evidence that salary increases bring appreciable improvement in student achievement. In an era of stringent accountability standards and fiscal policy, sole reliance on high salary as a deterrent to teacher attrition may not appeal to state legislators.

The difficulty in providing higher salaries has made policy makers and educational researchers look for other ways to encourage teachers to stay in teaching. For example, districts and states, which heavily used financial incentives such as loan forgiveness and sign-on bonuses to lure new teachers into the profession, have now focused on new teacher support programs to retain teachers. Midwestern states like Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin all have established some form of new teacher support program in urban and suburban districts. Survey results (NASBE, 1998) indicated that the districts providing support reported decreased attrition of new teachers.

Researchers also have paid increased attention to improving work conditions to retain teachers. The results from the TFS suggest that student discipline problems and school safety should be a major opportunity for improvement. Teachers' opinion on student discipline problems may have provided ready focuses for the improvement of their work conditions. The effect of student discipline problems and school safety on teacher commitment appears to be more pernicious than past research suggests. Student disruptive behavior, tardiness, lack of attention, disrespect, bullying, and violence can ruin a healthy learning environment that teachers depend on to effectively do their jobs. Many teachers frequently feel stressed and eventually become disenchanted with teaching because student discipline problems are pervasive in schools.

School administrators and teachers can work together to cope with student discipline problems and improve the work conditions. Congruous discipline policies are critical to reducing student discipline problems because discipline policies characterized by heavy-handed punishment breed student resentment and disobedience (Edwards, 2000). School leadership can do a lot to help establish consistent discipline policies that encourage students to make good choices and take responsibility for their actions. In this regard, schools should give teachers more influence over setting up discipline policies because teachers are closely associated with the process of establishing disciplinary order.

In fact, giving teachers more authority on school matters embodies participative school management, which encourages teachers to take ownership for institutional goals by participating in school decision-making. The results from the TFS remind us that bureaucratic controls are incompatible with teacher autonomy and potentially detrimental to teacher commitment. Many former teachers in the TFS thought that schools could give teachers more authority in the school and classroom. This suggests that schools should flatten the organizational structure, reduce administrative directives, and create work conditions that tap teacher expertise and enhance commitment. For example, large public school districts in Chicago, Milwaukee, Minneapolis, and St. Paul have adopted site-based management programs to improve teachers' professional lives and school performance. One emphasis of the site-based management program is on engaging teachers in school decision-making. It is believed that teachers who share greater responsibility over school operations become more committed to the school enterprise.

In summary, teacher retention is crucial to resolving the problem of teacher shortage that has plagued our education system. Better salary and benefits are worthwhile investments in improving

teacher commitment, though retention strategies should not solely rely on financial incentives. The results from the TFS suggest that policy interventions aimed at retaining teachers should also focus on improving teachers' work conditions by reducing student discipline problems and giving teachers more authority in schools.

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AN ANALYSIS OF THE CURRENT STATUS OF STUDENT DEBT: IMPLICATIONS FOR HELPING VULNERABLE STUDENTS MANAGE DEBT

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ABSTRACT

Too many students are having serious problems with credit card debt. This debt can lead to the student's dropping out of school in the worst case; however, even when the students stay in school, they begin their careers saddled with excessive debt. Over half of today's college students own one or more credit cards, and the more credit cards students own, the greater the likelihood that they will have serious debt problems. Our survey of over 4,000 students indicated that as students progress through college, they acquire more credit cards and debt; furthermore, our survey indicated that students who work 10 or more hours per week are more likely to report debt problems than those students who work less than 10 hours per week. Married students report the fewest debt problems while divorced students report more debt problems than single or married students. Students should be educated, the earlier the better, on how to make wise financial decisions. This article reports the findings of a survey of over 4,000 college students from Arkansas, California, and Ohio. The results indicate which factors or characteristics are related to significant debt problems, and recommendations are made for helping students avoid making unwise financial decisions.

INTRODUCTION

One of the most natural transitions for students arriving at college is to obtain a credit card. Offers for easy-to-obtain credit cards flood many campuses each year, and credit card companies often used free items (e.g., t-shirts, ball caps) to attract student customers. Indeed, credit card offers are so numerous that some colleges have begun to ban or at least limit the presence of credit card companies on campus (Waggoner, 2005). Yet, according to a recent article in the *Wall Street Journal* (July 18, 2006), students are still obtaining credit cards with more than one-half of the students carrying at least one credit card that is directly billed to them. In fact, Manning and Kirshak (2005) write that among today's undergraduate, four-year college students, about 75-80% have their own universal bank credit card.

Clearly, credit cards provide students with a convenient way to make purchases, particularly when the students are low on cash, perhaps while waiting on their allowance from home for the fortunate few, or waiting on their paychecks or their student loans to arrive ("Majority of College Students," 2006). This convenience, however, can lead to serious consequences for the students who are not well-informed about the proper use of credit cards; unfortunately, according to a recent survey, this includes the majority of students. Braunsberger, Lucas, and Roach (2005) studied college students' ability to evaluate and choose the credit card offer that best fit their particular needs. As a result of their study, Braunsberger, Lucas, and Roach concluded that college students "possess a fairly low level of knowledge of credit cards and thus are not very well equipped to make educated choices concerning such cards (p. 237). This lack of knowledge about credit cards and debt makes students vulnerable and can lead to debt problems that include being delinquent in payments or not paying at all.

Angela Lyons (2004) references a study by Staten and Barron (2002) that compared credit card accounts opened as a result of marketing to college students on campus with those opened as a result of traditional marketing to 18-24 year olds and to those 25 years old and older. The comparison revealed that those opened as a result of marketing to students had a higher rate of delinquent payments and were more likely to result in charge-offs to the credit card companies than the other two groups. Students' lack of knowledge of credit cards, poor choices, and failure to make payments in a timely fashion (or at all) may lead to the students' having to drop out of school. John Simpson, a university administrator in Indiana, has been widely quoted for his comments in a *Chicago Tribune* article in 1998 in which he lamented the problems students have with credit cards and stated that "we lose more students to credit card debt than to academic failure." (Gallo, 2006; Cason, 2005; Smith, 2004; Chamberlin, 2001).

PROBLEM STATEMENT

The primary purpose of this study was to determine the current status of university students with respect to credit card use and debt and to determine which factors or characteristics seem to be related to the students' becoming vulnerable as far as debt is concerned. Furthermore, as a result of the findings of this study, recommendations will be made that would help vulnerable students manage their debt more successfully.

METHODOLOGY

A total of 4,469 surveys were received from students at 13 schools in three states: Arkansas, California, and Ohio. These schools include 11 holding AACSB accreditation. The schools participating in the survey in Arkansas were Arkansas State University in Jonesboro, Henderson State University in Arkadelphia, and the University of Arkansas at Little Rock. In California, the

participating schools were Allan Hancock Community College, Cal Poly San Luis Obispo, Cal Poly-Pomona, Chico State, and UCLA. The Ohio schools were Cleveland State, Miami University, Ohio State, The Ohio University-Athens, and the University of Akron. A total of 768 surveys from 39 classes were completed in Arkansas; 1,376 surveys from 17 classes in California were returned, and Ohio students returned 2,304 surveys from 15 classes.

The students participating in the survey were assured that the survey was voluntary as well as anonymous and were given information concerning how to contact the IRB board which had approved an exempt status for the survey as it pertained to human subjects. Of the students surveyed, 19.4% were freshmen, 18.66% were sophomores, 22.25% were juniors, and 27.11% were seniors. Graduate students comprised 12.58% of the participants. One hundred and twenty-three non-students in the same age group, 19-25, were surveyed as a control group. A regression analysis was conducted to determine which, if any, of the dependent variables was significant at the .01 level of testing. The Independent Y variable was the response to the question: "Do you consider your debt out of control?"

Using a Likert scale, the students were asked to indicate their level of agreement with selected questions. On other questions, the students were asked Yes or No questions (e.g., if they carried a balance on their credit cards). Finally, the students were asked some open-ended questions such as the amount of any credit card balance they might have accrued.

FINDINGS/CONCLUSIONS

In our survey, almost 62% of the students reported owning one or more credit cards. This finding is in line with the article in the *Wall Street Journal* that reported over half of the students own one or more credit cards (2006); however, our findings were less than the 75-80% that Manning and Kirshak (2005) reported owning one or more credit cards. Regardless of whether the exact percentage is 80%, 62%, or 50%, any of these numbers is certainly significant enough to cause problems for students who do not manage their credit cards responsibly.

Furthermore, our study found the ownership of credit cards related to serious debt problems. Of the participants in our survey who reported owning no credit cards, only 1.02% also reported having serious debt problems compared with almost 19% of the students owning at least 4 credit cards who reported having serious debt problems. This statistic was found to be significant at the .01 level of testing. These findings are in line with other research that suggests that student debt has increased as credit cards become more available (Robert Manning as quoted by Fitzgerald, 2003). Interestingly, while most of the literature reviewed for this article pertained to college students in the United States, credit card usage and debt problems are not only found among students in the US. Braunsberger, Lucas, and Roach (2005) give several examples of other countries that have concerns about their students' use of credit cards including the UK where the "popular press reports that university and college students are dealing with financial problems" (p. 250).

Another student characteristic we found related to student debt is status in school. With a small dip during the sophomore year, as students progressed through school, they acquired more credit cards, more debt, and, subsequently, more debt problems.

The students may believe that the higher salaries they expect to receive after completing their education will enable them to fairly easily pay off their debt; thus, they may not take the debt they are accumulating as seriously as they should or be as willing to sacrifice and "do without" while in college. Furthermore, perhaps many of the students accumulate more debt simply as a result of additional tuition, books, and other school-related expenses that add up as the students progress through school.

Interestingly, our survey revealed that students who work 10 or more hours a week acquire more credit cards and more debt than students who work less than 10 hours a week or have no job. Students who do not work or who work less than 10 hours per week may have parents who are paying for their school-related expenses, as well as paying for their cars, insurance, clothes, entertainment, and the like. Or students who are not working may be on scholarships that alone or in conjunction with support from their parents pay for their school and personal expenses. Meanwhile, students who are working at least 10 hours a week may be receiving little or no help from their parents or the university and may have to work to stay in school; these students may turn to credit cards and/or student loans to make ends meet. These are just a few of the possible conclusions one might reach from the findings.

Our findings indicate that marital status is related to student credit problems. Of all the respondents, divorced students were most likely to report having credit problems with almost 20% so reporting. On the other hand, married students reported less credit problems than single students; although, again, both groups were less likely than divorced students to have credit problems. The survey did not request students to list possible reasons for their debt problems. Possibly, though, the married students—who had the fewest reported credit problems—may have been the more mature, settled group, and this might have accounted for their fewer credit problems than the single students. Also, the fact that married students could share expenses as well as resources may have helped their financial standing. The divorced students may have been single parents which contributed to their having the most reported credit problems.

Another disturbing finding was that 86% of all the students responding did not know the interest rate on their credit cards. Of the students reporting serious debt problems, 96% did not know their interest rates compared with 65% of the students who reported not having significant debt problems. Since the students who reported having significant debt problems were also those who reported having more credit cards, we might assume that as the students acquired more credit cards and got deeper in debt, the interest rates on the cards became less important because the students were more dependent on the cards.

RECOMMENDATIONS

The results of our survey, which agree with the general consensus among researchers in this area, indicate that today's college and university students clearly are not adequately prepared to handle the responsibility that comes with credit card ownership specifically and debt in general. The following recommendations are provided in an attempt to help students become better able to handle their finances.

1. Educate students on how to make good financial decisions and to become effective financial managers. Students must "understand that credit cards are not "free money," and that every time they charge an item, they are in fact receiving a very expensive loan" (Barrett, 2006, p. 58). Students should learn that before they apply for or accept any credit card, they must understand certain aspects of personal finances. Some of the many important aspects include choosing the right credit card, understanding the differences among the annual, introductory, and default interest rates, paying bills on time, paying off the card each month, taking measures to prevent identity theft (Barrett, 2006; Hoak, 2006).
2. Make sure that students are aware of their credit scores. As Bridgett Smith, with LendingTree says, "You think your GPA is really important---in the longer term, your credit score is more important" (Hoak, 2006, D3).
3. Encourage students to carefully read the pamphlets or educational materials that many credit cards companies have designed specifically for students.
4. Make sure students understand the "opportunity cost" of money they spend paying off their debts after they graduate from college. This "opportunity cost" may include the home, graduate school, or other investment opportunities they miss as a result of having to pay off debt acquired in college (College Students and Credit Card Information, 2007).
5. Advocate that colleges closely monitor any credit card companies that use their campuses to recruit student customers
6. Promote personal finance education in high schools; this will enable students to come to college prepared to handle the credit card offers they are likely to be hit with during their first weeks on campus.

SUMMARY

More than half of today's college students own one or more credit cards, and the more credit cards students own, the greater the likelihood that they will have serious debt problems. Our survey of over 4,000 students indicated that as students progress through college, they acquire more credit cards and debt; furthermore, our survey indicated that students who work 10 or more hours per week are more likely to report debt problems than those students who work less than 10 hours per week. Married students report the fewest debt problems while divorced students report more debt problems than single or married students.

Students are not going to give up student loans or the convenience of credit cards. But they might be able to more effectively handle these forms of debt if they had more information. Because students begin using credit cards their freshmen year (or in high school), the sooner we get this information to them, the better off they will be. Students need to understand the importance of selecting the right credit card for them, and they certainly need to know the interest rates, annual fees, and penalties for late payments. They need to understand the importance of building a high credit score and how to monitor their own credit scores. Just because credit cards are here to stay doesn't mean significant debt problems have to be.

Table 1: Statistical Analysis

Factor/significance	R^2 Sign at .01 Level	F-statistics	T-ratios
GENDER	R^2=.6634 NS	1.237 (.0001)	..00204 (.0381)
AGE	R^2= .8006 NS	14.13* (0021)	1.909 (0091)
MAJOR	R^2= .5341 NS	2.14 (0701)	.0076 (0321)
STATUS	R^2=.9977 S	25.09* (0001)	3.146 * (0031)
# OF CREDIT CARDS	R^2=.9866 S	23.07* (0001)	2.941 * (0028)
MARITAL STATUS	R^2=.9694 S	11.09* (0002)	2.776 * (0055)
ANOUNT OF STUDENT LOAN	R^2= .9991 S	36.71* (0001)	4.801* (0032)
HOURS WORKED	R^2=.9874 S	19.91* (.0001)	3.123* (0029)
# OF LATE PAYS	R^2=.9963 S	20.24* (0001)	4.006* (0031)
SIGN. BALANCE	R^2= .9801 S	18.12* (0001)	2.911* (0047)
USED CREDIT COU.	R^2= . 9531 S	6.34* (0001)	2,745* (0018)
SAVE	R^2=.9997 S	27.12* (0001)	5.123* (0001)
CHECKED CREDIT	R^2=.9889 S	19.37* (0001)	54.23* (0027

Value in ( ) Is the Significance Level of the F-statistic
Value in ( ) Is the Significance Level of the 2-tailed T Test

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