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Applying Kolb's Experiential Learning Style to an MIS Class

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ABSTRACT

After learning about Kolb's Learning Styles and Experiential learning at a workshop, an effort was made by this author to incorporate experiential learning into an MIS class that is part of a business core curriculum. This paper will describe the experiences of applying Kolb's Experiential Learning to that class. The effort involved presenting material in differing ways with the intention of improving learning. The motivation for this effort was to increase the amount of learning (material retained) and to make the learning process more enjoyable for students - both potential benefits identified at the Kolb workshop (Murrell, 2007). The efforts made to include Experiential Learning in this class could be similarly applied in other business classes and the same benefits might be observed.

Introduction

The experience that this paper describes originated from learning about Kolb's Learning Styles and Experiential Learning at a workshop. At this workshop, some of the benefits of experiential learning were discussed. While there were several positive possibilities, two in particular strongly interested this author. The first was the idea that using experiential learning would help students to improve learning. The second appealing possibility was that experiential learning would increase interest in the material and/or make the class more fun for students. Additionally it seemed logical to expect a more pleasant learning environment to increase participation. It was with hope for these two potential benefits that an attempt was made to incorporate experiential learning into a particular course. (Murrell, 2007)

The course is a Management Information Systems course, a junior-level class which is part of the core curriculum for business majors. Many universities have such a required course for business majors. Students taking this course may be interested in a variety of majors. There are concerns by some who teach this class about the challenges of making this class interesting. Applying what was learned about experiential learning seemed like a promising way to make this class more interesting to students.

What Is Experiential Learning and Why Try Using It?

Interested persons can make use of an inventory instrument to identify where they fall among Kolb's different learning style preferences. For those who might be interested in identifying their own learning style preference, the inventory that this author took for the workshop took a brief and reasonable amount of time to answer the questions; calculating the results was both easy and quick. Murrell (2007), based on Kolb's work, describes learning as a process that occurs when information is first acquired ("taking in or grasping information") then understood ("transforming or making meaning of information"). People will tend to have a preferred means for each of these two steps; the combination of their preferences will determine their learning style. Each of the two steps involves a choice of preference relating to one of the four learning modes. Four learning styles are identified: " Accommodator, Diverger, Assimilator, Converger" (Di Muro and Terry, 2007; Loo, 2002; Marriott, 2002; Murrell, 2007; Terry, 2001). (McKee et al., 1992; Murrell, 2007).

The four learning modes identified are: (1) Concrete Experience, (2) Reflective Observation, (3) Abstract Conceptualization, and (4) Active Experimentation (Brock and Cameron, 1999; Di Muro and Terry, 2007; Loo, 2002; Marriott, 2002; Murrell, 2007; Terry, 2001). The stages are similar to what their names imply. As Murrell (2007) describes:" Concrete Experience [-] Experiencing... Reflective Observation [-] Reflecting... Abstract conceptualization [-] Thinking... Active Experimentation [-] Applying."

Concrete Experience activities will help students relate experientially to the material. Activities may draw on experiences relating to the material to be learned or help students to better understand the relative experience. Murrell (2007) indentified these activities for concrete experience mode: case studies, stories, interviews, simulations, observation, demonstrations, and more.

Reflective Observation activities provide an opportunity for students to reflect on the material that they are learning. Murrell (2007) suggests activities such as journal assignments or discussions to support this mode.

Abstract Conceptualization activities may be the ones that students get to experience most often. These include lectures, readings and such. (Murrell, 2007)

Active Experimentation activities provide an opportunity to experiment with the ideas that a student has hopefully learned. Activities to support Active Experimentation would include solving problems and completing projects that apply the material. (Murrell, 2007)

Concrete Experience and Abstract Conceptualization relate to the process of acquiring information. Reflective Observation and Active Experimentation relate to the process of understanding information. This means that if all four learning modes are used in a cycle then the processes of acquiring information and understanding information have been addressed in ways that help all of the students regardless of which preference any individual student has for either of the two processes involved in learning. (Murrell, 2007)

The learning styles and the learning modes are related - people with different preferred learning styles have preferences for different learning modes. People who find their learning style preference to be Accommodator are partial to Concrete Experience and Active Experimentation modes. Accommodators tend to like theories "to fit the 'facts'" and tend to be good with getting things done. A person who identifies their preferred style as Diverger will have strengths relating to Concrete Experience and Reflective Observation modes. Divergers will tend to be "imaginative" and "good at generating ideas". A person who finds themselves an Assimilator will be likely to prefer to make use of Abstract Conceptualization and Reflective Observation modes. Assimilators like "ideas and theories" and may excel at generating theories. A person who determines that their preferred learning style is Converger will be likely to make use of Abstract Conceptualization and Active Experimentation learning modes. Convergers can excel at "problem solving" and the "practical application of ideas". (McKee et al., 1992; Murrell, 2007)

While these various modes or stages relate to the learning styles identified above, using all four modes or stages is suggested (Brock and Cameron, 1999; Di Muro and Terry, 2007; Murrell, 2007; Terry, 2001). If all four types of learning occur, then the learning style preferences of all students will have been used to support the learning of class material. Some researchers have found that various academic majors may tend to attract or include more people with a particular learning style preference (Loo, 2002; Marriott, 2002). In a class where students will have a variety of majors, this is highly relevant because so many of the learning style preferences may be represented, and the composition of students and their learning styles will vary with each section or term the class is taught. Marriott (2002) found that some students actually changed their learning style preference during their college years. This also supports the idea of teaching to all four learning style preferences, because even if a class consists of students in one or two majors the students may still have differing learning style preferences. Additionally, it is suggested in the literature that exposure to the various learning modes can also result in various benefits including developing

proficiencies with the non-favored types, improving various thinking skills (Brock and Cameron, 1999; Murrell, 2007).

Using all four learning styles to teach something is experiential learning. One example of applying this in class is to ask students about the criteria they have used in making purchasing decisions relating to computers and other hardware. This encourages students to consider their own experiences relating to the material. Students are asked to consider what other factors would be important if they were purchasing computers for an organization. These questions and the process of students considering them are Concrete Experience activities. This is followed by asking students to consider why these factors and important along with questions to encourage students to reflect on this. The follow up questions and discussion are Reflective Observation activities. A discussion of the important criteria for purchasing hardware for organizations would follow. This would be the Abstract Conceptualization part of the experiential learning for this material. Students could be asked to actually apply what they have learned by going and finding hardware that they would purchase for an organization if they were assigned that task at work. Students can be asked to explain their choice based on the criteria. This would be an Active Experimentation activity. The goal of using all four learning modes would be to help students better learn the material and to help make learning this material more interesting.

Another example that this author used related to teaching about data mining. The author brought both donuts and cupcakes to class. Students could choose to have donuts, cupcakes, or both. Students then had to answer the question: if you owned a bakery that made cupcakes and donuts, what types of information would you want to know about the sales of donuts and cupcakes? This activity was to create Concrete Experience learning. Students were asked to reflect on the various questions raised and the activity. This was the Reflective Observation activity. A discussion about data mining and business intelligence followed. This was the Abstract Conceptualization part teaching this material. Students were asked to consider how people with jobs in their major or in particular industries might use data mining - what are some questions that you would want answered? This was the Active Experimentation part of the experiential learning process.

Observations and Lessons Learned

The experiences of this author in consciously attempting to incorporate Kolb's experiential learning into an MIS class with students from a variety of majors have been positive. The initial goals of improved learning and making the class more interesting to students seem anecdotally to be supported. The experiential learning activities used by this author require students to participate in class, respond to questions, etc. This means that it is often necessary to request participation more than once and to wait out awkward pauses. One note to be made is that to apply all four learning modes for class concepts requires that not all material can be presented in class due to time constraints. Instead, it allows for the most important material to be covered in class with some material left to the student to read about and learn independently.

It does seem that a greater number of students do participate in class using this approach. If more students seem to be participating, then this author hopes that this indicates a greater number of students are engaged in the learning process. Reviews of material from earlier classes often seem to indicate that learning retention is improved and that the material is "sticking with" students beyond a given class meeting or test day. This author plans to continue to make efforts to utilize experiential learning in this class and to explore making use of experiential learning in other classes as well.

Conclusion

The benefits this author has experienced from incorporating experiential learning into an MIS class are applicable to other classes in other business areas. Incorporating experiential learning into any class would require planning activities relating to all four learning modes. This author found that many of the activities that were used to teach incorporated the various learning modes,

the big change was to make a concerted effort to use all four learning modes to help students learn something specific. It is likely that many instructors interested in trying this approach would find that they are already using multiple modes.

While it is fair to argue that some types of material are difficult to present using experiential learning, there is a great deal of material that can be taught or presented using activities representing all four learning modes. Other classes in other disciplines that are part of a business core curriculum would similarly have students from a variety of majors who may have various learning style preferences. While the advantages of presenting or teaching material using all of the learning modes is discussed in the prior section, this author thinks the same potential benefits to including experiential learning in an MIS class would be of interest to professors in other disciplines. It seems reasonable to think that these potential benefits may be found by including experiential learning in other business classes.

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Investigating the Relationships among Math Confidence, Computer Confidence, and Computer Self-Efficacy and the Implications for Technology Education

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ABSTRACT

Educators, industry leaders, and government officials argue that the United States is falling behind other countries in technology innovation. Many attribute this situation to ineffective education in the areas of math, science, and technology. The current study provides insight into these issues by linking math confidence, computer confidence, and computer self-efficacy (CSE). Four hypotheses were tested using data gathered from undergraduate business students in a southern university. The results were significant, suggesting that both Math Confidence and Computer Confidence have a significant effect on CSE, both directly and indirectly. This study extends prior research on CSE by examining the link between Math Confidence and CSE and posits that technology educators may be well-served to consider some of the same techniques and methodologies applied in mathematics education to improve CSE in college students.

Introduction

As information technology plays an increasingly important role in both academia and industry, understanding the factors that affect an individual's decision to use computers and technology continues to be a critical area of investigation among IS researchers. One important construct in this arena is Computer Self-Efficacy (CSE) (Compeau & Higgins, 1995). Derived from the more general construct of self-efficacy and rooted in Social Cognitive Theory (Bandura, 1977, 1986), CSE is defined as a person's perception of their ability to use a computer in the accomplishment of a task (Compeau & Higgins, 1995). Research has shown that CSE has a direct influence on the likelihood that an individual will use a computer for the completion of tasks (Compeau, Higgins, & Huff, 1999); thus, it is important to continue to explore those constructs and factors that should enhance an individual's CSE.

A popular area of research in the 1980's and 1990's, studies tended to focus on negative antecedents related to anxiety and CSE (e.g., Harrison & Rainer, 1992; Marakas, Yi, & Johnson, 1998; Compeau et al., 1999). Yet, today's educators are calling for a focus on building confidence in math, science, and technology, as opposed to simply reducing anxiety (Furner & Berman, 2004). Compeau et al. (1999) suggest that technology adoption results from ensuring that users have the skills they need to feel confident in their abilities. Of particular interest to the current study is support for math confidence as a significant influence on both computer confidence and CSE. Thus, in light of the growing math, science, and technology education crisis in the United States and the con-

cerns that this crisis may be affecting our nation's ability to compete in a high-tech world (Furner & Berman, 2004), this study calls for a revival of CSE research. In turn, such research focused on positive rather than negative antecedents of CSE may help in identifying pedagogy that will greatly enhance CSE in college graduates.

Research Model and Hypotheses

Research has found that, in general, anxiety has a negative effect on self-efficacy formation and development (Bandura, 1977; Sarason, 1984). Further, this link between anxiety and its effect on self-efficacy formation is widely accepted in the literature (Kavanagh & Bower, 1985). More specifically, support exists regarding the negative impacts of both computer anxiety and math anxiety on CSE (e.g. Harrison & Rainer, 1992; Marakas et al., 1998). While prior studies have focused primarily on the negative relationships associated with anxiety, Harrison and Rainer (1992) demonstrated support for a significant positive link between computer confidence and CSE. Further, calls have been made for a focus on building confidence in math and technology (National Council of Teachers of Mathematics [NCTM], 1989; Furner & Berman, 2004), suggesting that one's attitude will impact both confidence and self-efficacy. The NCTM (1989) emphasized confidence in one's mathematical abilities as one of five goals of school mathematics curricula. Thus, this study extends and enhances the body of literature on CSE through a focus on the positive-emotion factors of computer confidence and math confidence. This study posits that by increasing math and computer confidence, CSE should be improved.

Thus, based on Social Cognitive Theory (Bandura, 1977, 1986) and prior research, we propose the following hypotheses:

H1: Computer confidence will have a direct, positive influence on CSE.

H2: Math Confidence will have a direct, positive influence on CSE.

Correlational research has demonstrated a positive relationship between computer anxiety and math anxiety (Howard & Smith, 1986; Harrison & Rainer, 1992). In addition, at least one study that utilized path analysis suggested that math anxiety may have a direct causal effect on computer anxiety (Dambrot, Watkins-Malek, Silling, Marshall, & Garver, 1985; Igbaria & Parasuraman, 1989). These findings are supported by Social Cognitive Theory (Bandura, 1977, 1986) and through research that has demonstrated a person's perception of their mathematics ability influences their choice of math-oriented courses in school, as well as, their choice of math-oriented careers (Lent, Brown, & Larkin, 1984; Hackett, 1985; Cooper & Robinson, 1991). That is, because mathematics underlies most technical subjects, persons with a low perception of their math ability (i.e. low self-efficacy) have been shown to avoid technical courses involving science and technology (e.g. computing), which in turn impacts their choice of careers (Dew, Galassi, & Galassi, 1984).

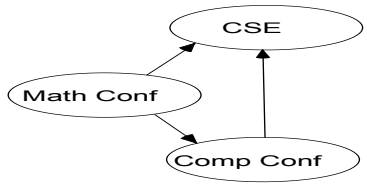
Therefore, based on prior research, we offer the following hypotheses:

H3: Math confidence will have a direct, positive influence on computer confidence.

H4: Math confidence will have a positive influence on CSE, partially mediated by computer confidence.

The above hypotheses are summarized below.

Figure 1
Hypothesized Model



Method

Participants

The current study engaged a sample of 618 undergraduate upperclassmen enrolled in one of two required courses in the College of Business at a large southeastern university. One survey was removed due to incomplete data, resulting in a final sample of N=617. Demographic information for the participants is provided in Table 1.

Table 1
Demographic Characteristics of Study Participants

Characteristic	Frequency	Percentage
Age		
19 – 22	528	85.7%
23 – 42	88	14.3%
Gender		
Male	352	57.1%
Female	264	42.9%
Class		
Sophomore	3	.5%
Junior	189	30.7%
Senior	424	68.8%
Major		
Business	83	13.5%
Accounting	134	21.8%
Finance	49	8.0%
MIS	94	15.3%
Marketing	167	27.1%
Economics	2	.3%
Logistics	21	3.4%
Entrepreneurship	25	4.1%
All Other	41	6.7%

Measurement

The CSE construct was measured using Compeau and Higgins' (1995) 10-item scale that asks if an individual could complete an undefined task using an undefined software package. If a response is negative, the individual moves on to the next item. If a response is affirmative, the individual is asked to indicate a level of confidence in their response on a 10-point scale with anchors ranging from 1 (*not at all confident*) to 10 (*totally confident*). The approach of the Compeau-Higgins CSE scale is based on the idea of forcing respondents to think about future behavior rather than past capabilities (Compeau & Higgins, 1995). Math Confidence was measured using six positive-emotion items from the Fennema-Sherman Mathematics Anxiety Scale (Fennema & Sherman, 1976). Finally, Computer Confidence was measured using nine positive-emotion items from the Computer Anxiety Rating Scale (Heinssen, Glass, & Knight, 1987). The items used from each scale are summarized in Table 2.

Table 2
Survey Items

Computer Self-Efficacy (Compeau & Higgins, 1995)	
ccse5_01	I could complete the assignment using the software package if there was someone giving me step by step instructions.
ccse5_02	I could complete the assignment using the software package if I had never used a package like it before.
ccse5_03	I could complete the assignment using the software package if I had only the software manuals for reference.
ccse5_04	I could complete the assignment using the software package if I had seen someone else using it before trying it myself.
ccse5_05	I could complete the assignment using the software package if I could call someone for help if I got stuck.
ccse5_06	I could complete the assignment using the software package if someone else had helped me get started.
ccse5_07	I could complete the assignment using the software package if I had a lot of time to complete the job for which the software was provided.
ccse5_08	I could complete the assignment using the software package if I had just the built-in help facility for assistance.

ccse5_09	I could complete the assignment using the software package if someone showed me how to do it first.
ccse5_10	I could complete the assignment using the software package if I had used similar packages before this one to do the same assignment.
Math Confidence (Fennema & Sherman, 1976)	
mconf_01	Math doesn't scare me at all.
mconf_02	It wouldn't bother me at all to take more math courses.
mconf_03	I haven't usually worried about being able to solve math problems.
mconf_04	I almost never have gotten shook up during a math test.
mconf_05	I usually have been at ease during math tests.
mconf_06	I usually have been at ease during math classes.
Computer Confidence (Heinssen, Glass, & Knight, 1987)	
cconf_01	The challenge of learning about computers is exciting.
cconf_02	I am confident that I can learn computer skills.
cconf_03	I look forward to using a computer on my job.
cconf_04	Learning to operate computers is like learning any new skill – the more you practice, the better you become.
cconf_05	If given the opportunity, I would like to learn about and use computers.
cconf_06	I am sure that with time and practice I will be comfortable working with computers.
cconf_07	Anyone can learn to use a computer if they are patient and motivated.
cconf_08	I feel computers are necessary tools in both educational and work settings.
cconf_09	I feel that I will be able to keep up with the advances happening in the computer field.

Model Analysis

The internal consistency reliabilities for each construct, as measured by Cronbach's alpha, were well above the minimum acceptable level of .70 (Hair, Anderson, Tatham, & Black, 1992). The covariance matrix and reliabilities are given in Table 3.

Table 3
Covariance Matrix of the Latent Constructs

Construct	1	2	3
1. CSE	0.91*		
2. Comp Conf	0.107	0.87*	
3. Math Conf	0.092	0.109	.92*
*Cronbach alpha reliabilities			

A number of steps were taken to assess and improve the fit of the measurement model. First, a review of the components in the model revealed that all of the path estimates were positive and significant for the model. The fact that all of the estimates were positive adds support for the hypothesized model and its underlying theory. The significance of the estimates suggests that all of the paths were statistically relevant. Second, a review of all path coefficients between the latent variables and their respective indicators showed values ranging from 0.499 to 0.871. Therefore, the path coefficients for all of the indicators suggested that they were all providing substantive value in the model relative to each other. Third, the model was tested for dimensionality. The results of this test indicated a significant difference between the chi-square for the original model versus the chi-square for each unidimensional model, thus suggesting that the model does indeed measure three distinct constructs. Finally, a review of the fit indices suggested the inclusion of four theory supported covariances between specific item-level error terms. An assessment of recommended goodness-of-fit indicies suggested a good fit for the final model as modified. The final model is presented in Figure 2, and the goodness-of-fit indices are provided in Table 4.

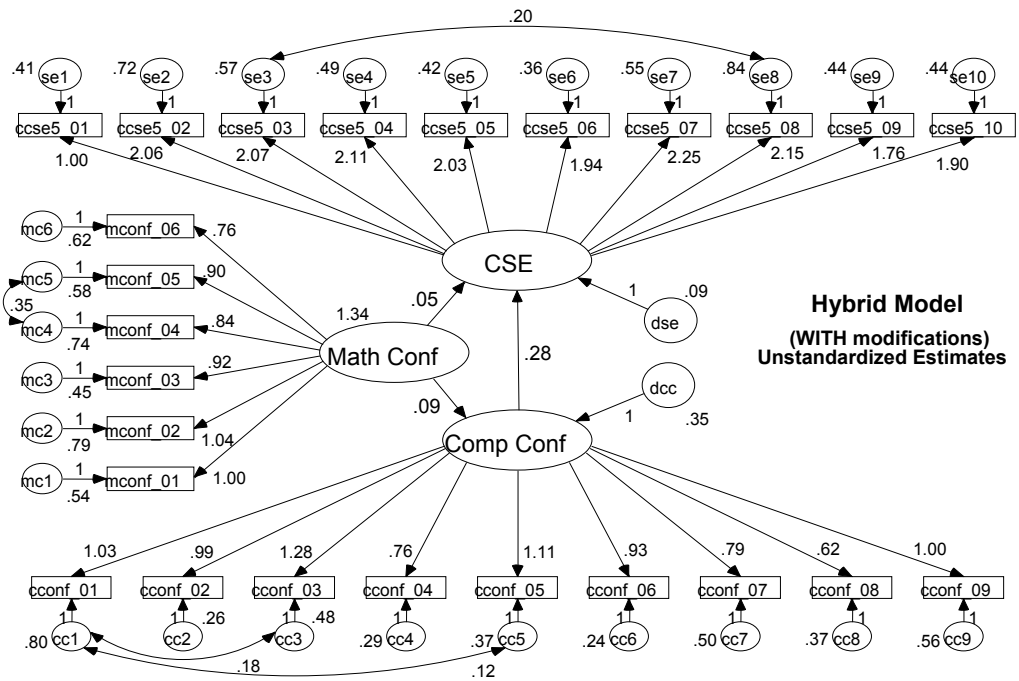
Results

The standardized path estimates for the paths between Math Confidence and CSE (0.163), Math Confidence and Computer Confidence (0.174), and Computer Confidence and CSE (0.467) were positive and significant, offering support for hypotheses 1, 2, and 3. These results support

Table 4
Goodness of Fit Indices for Final Model

	χ^2	χ^2 / *df*	GFI	CFI	NFI	RMSEA
Final Model	816.596 df = 268 P = 0.000	3.047	0.902	0.932	0.902	0.058 90% CI (0.053, 0.062)

Figure 2
Final Model



prior research that suggests Math Confidence will have a direct and positive effect on Computer Confidence and on CSE. In addition, because theory and research have suggested that there are a number of antecedent and subsequent variables that can affect CSE formation (e.g. Marakas et al., 1998), it is not unreasonable to expect a relatively small path coefficient between a single antecedent variable, such as Math Confidence, and CSE.

A review of the squared multiple correlations for the final hybrid model indicated that the model explains 27.2% of the variability in CSE and 3% of the variability in Computer Confidence. The relatively small amount of variability in Computer Confidence explained by the model suggests that while Math Confidence does have a direct and significant impact on Computer Confidence, its impact is comparatively small.

Frazier, Tix, and Brown (2004) define a mediator as "a variable that explains the relation between a predictor and an outcome" (p. 116). Therefore, in the current study, we have suggested that the impact of Math Confidence on CSE may be partially explained by Computer Confidence. To establish support for this mediation effect, we compared the goodness of fit, model components, and model parameters for a model containing mediation and a model containing only direct effects. In both models, all regression

weights were found to be significant, suggesting that there is a relationship between Math Confidence and Computer Confidence and Computer Confidence and CSE. Additionally, the relationship between Computer Confidence and CSE was comparable, but slightly larger, than the relationship between Math Confidence and Computer Confidence, suggesting the power of the mediation effect is satisfactory (Frazier et al., 2004). Therefore, hypothesis 4 was supported, suggesting that Computer Confidence partially mediates the effect of Math Confidence on CSE.

Discussion

For academicians and practitioners, this study emphasizes the importance of a continued focus on improving CSE as part of our educational process. From the research perspective, the findings provide additional evidence regarding the influence of mathematics on CSE. Most prior studies have utilized correlational analysis with regression to assess these relationships (e.g. Harrison & Rainer, 1992); but no other studies were identified that used SEM to investigate the directionality and influence of mathematics on CSE. Our findings provide supporting evidence for the idea that Math Confidence positively influences CSE directly and indirectly, being partially mediated by Computer Confidence. In addition, the finding that Math Confidence has a direct impact on Computer Confidence adds support for previous research that suggests Math Anxiety may have a causal effect on Computer Anxiety (Igbaria & Parasuraman, 1989).

An important implication for business practice is the recognition that enhancing CSE among potential employees before they enter the workforce may result in savings of both time and money. Because educational institutions offer a primary source of computer education opportunities for persons not yet in the job market, a parallel implication is that higher levels of CSE should be developed among students prior to entering the job market. The use of a student population in this study makes the results especially relevant to the area of university education, which in turn, has a subsequent and direct impact on business practice. A better understanding of the posited relationships among students offers the opportunity for improved interpretation and remediation of student-centered learning barriers in both the domains of mathematics-statistics and computing-technology (Bessant, 1997). The immediate result of such improved interpretation and remediation could serve to produce students who are better able to confidently focus on learning mathematics-statistics and on using computers to accomplish tasks, rather than having anxiety repeatedly undermine their focus and short-circuit their ability to learn and function (Marakas et al., 1998). To that end, the link between math confidence and both computer confidence and CSE suggests that some of the same pedagogy and techniques used to build math confidence may be applicable in a university setting for building computer confidence and CSE. For example, perhaps the ideas of math remediation, placement testing, and other similar techniques can be adapted for technology education to ensure that students reach an optimal level of CSE before entering the workforce.

In related research, Wood and Bandura (1989) demonstrated that individuals who have low self-efficacy within the particular demands of their environment tend to focus their concern on their personal ability to perform (i.e. self-diagnostic) rather than showing concern for what they must do to complete the task (i.e. task-diagnostic). Additionally, Tocci and Engelhard (1991) demonstrated that simply mastering the necessary skills is insufficient to ensure confidence and self-efficacy; it is equally important to help students develop a positive attitude toward the subject, e.g. math, science, technology. Skill and attitude should then combine to build a higher level of confidence (Tocci & Engelhard, 1991). Clearly, students who have not established an adequate level of confidence and self-efficacy with computer use can become employees who are less productive due to their self-diagnostic focus. Therefore, addressing and building student confidence with both mathematics and computers at the university level—or even earlier— should lead to students becoming better prepared employees who are able to focus on the business task-at-hand rather than on their fears, concerns, and/or shortcomings.

Finally, it is important to note that CSE is no longer an issue only for industry, but should also be of concern in higher education. In the 1990's when Harrison and Rainer (1992) demonstrated a positive link between computer confidence and CSE, these authors pointed out the problems that low CSE could have on job performance. In turn, these authors identified the potential issues for businesses, including employee training and selection, and the lasting impact to the employee. While these issues are indeed still relevant, equally important is the student's ability to thrive and succeed in a university setting. Today's college setting is quite different from that of the early 1990's. Technology is an integral part of the educational process, with an ever-increasing use of technology for both the delivery and completion of courses across disciplines. Thus, the findings of this study suggest that math confidence, computer confidence, and CSE should be addressed throughout the educational process to ensure that students are able to achieve a maximum level of computer confidence and CSE.

Limitations

As with any empirical study, the current study has limitations that should be noted. Bias may be present due to the research design, as the study utilized a single method and a single set of respondents. Attempts were made to reduce this possibility by allocating study variables to different sections of the questionnaire. Additionally, as a separate measure of the dependent variable, participants were asked to provide the grade they received in the university-required introductory computer course. Although a self-reported measure with a narrow range of variability, course grade was found to have a low, but positive correlation with CSE ($r = .20$, $p < .01$). Therefore, while recognizing its inherent limitations, the grade received in the computer course could be considered a rough proxy for computer skill or performance, since prior research has demonstrated a strong, positive relationship between CSE and computer skill or performance (Harrison & Rainer, 1992; Marakas et al., 1998). Consequently, the grade served as a limited, secondary measure of CSE, providing a degree of additional support for the validity of the CSE construct as measured by the cross-sectional survey, thereby reducing common method bias and same source bias.

Due to the cross-sectional nature of the data, the study does not address changes in perception or behavior over time. Also, Math Confidence was not measured prior to Computer Confidence or CSE. Therefore, while the analysis does suggest how Math Confidence may influence Computer Confidence and CSE, the study does not attempt to fully establish causal relationships among the latent variables. Finally, the study considers the affective dimension of the Math and Computer Confidence constructs, but does not include a measure of cognitive influences. However, despite the limitations, the findings of this study provide meaningful implications for research and practice.

Future Research

Though examined in some detail in the late 1980's and early 1990's, CSE remains an important issue for investigation. As educators, industry leaders, and government officials have noted, the United States is in danger of losing competitive advantage in the realm of technology innovation. And, most attribute this situation to ineffective education in the areas of math, science, and technology. The current study lends support to these concerns, through empirical evidence that links math confidence, computer confidence, and CSE. As such, further investigation of methodologies and techniques that will improve student confidence with both math and computers is of the utmost importance. Also, because studies are lacking that have investigated math confidence and its causal relationship to CSE, this study contributes new data and information upon which additional studies involving CSE can build. Finally, in light of more extensive uses of technology in the educational process at all levels, it can be important to gain a better understanding of how students' CSE may impact the effectiveness of using technology to enhance education.

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Implementing Peer Evaluation to Enhance a Cooperative Learning Environment

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ABSTRACT

An interesting occurrence in the field of education is the level of resolve by instructors to continue to explore ways to enhance the teaching and learning process. The promotion of learning is the most critical objective of teaching. In order to enhance the teaching and learning process, educators often create an environment in which students cooperate to accomplish a task. Many educators favor the practice of assigning students to groups in order to solve a given problem. The major setback in implementing cooperative learning is the evaluation of group work. The commonest approach is allocation of equal grades to all members of a group. There is an obvious flaw in the practice because the participation level of each member of a group varies. This paper proposes a reward system which combines instructor's score with peers' score to obtain an individualized score for every group member to mitigate the free-rider problem. Using the new assessment tool, there is a greater distribution of grades among students with peer assessment than without peer assessment. Finally, given the positive disposition of students to the experiment, one can conclude that the proposed evaluation instrument is an effective way to deal with free-riding in group assignments.

Introduction

An interesting occurrence in the field of education is the level of resolve by instructors to continue to explore ways to enhance the teaching and learning process. The promotion of learning is the most critical objective of teaching. Birch and Ladd (1996) identify three basic classroom goals for an educator, and these include the creation of awareness, modification of instructional approaches and reduction in boredom. In an attempt to meet these aforementioned goals, learning can be structured in several ways. As Johnson and Johnson (1994) note, learning can be structured competitively when students work against each other. Students can also work individually on an assigned task. Another approach creates an environment in which students cooperate to accomplish a task. Many educators favor the practice of assigning students to groups in order to solve a given problem. Further, employers are increasingly looking for the ability to work in a team as a key skill for new graduates. According to Colbeck et al. (2000), the use of groups in the classroom is embraced by students, accrediting agencies, prospective employers and educators.

Cooperative learning involves processes whereby tasks are broken down into sub-tasks to be completed by different learners. One form of cooperative learning has been labeled collaborative learning. Collaborative learning is a more student-oriented approach where learners share in the creation of a joint solution. Collaborative learning refers to a variety of instructional practices that encourage students to work together as they apply course materials to answer questions, solve problems, or create a product (Colbeck et al. 2006). Both cooperative and collaborative learning are examples of social learning. Learners communicate with the instructor as well as other learners as they undertake tasks or projects in which learning and cognition can be situated. In both cooperative and collaborative learning,

learners work together to achieve an outcome. The peer support system in cooperative learning makes it possible for a learner to internalize both external knowledge and critical thinking skills and to convert them into tools for intellectual functioning (Gokhale, 1995; Hudson & Gray, 2006; Colorado, 2007; Winter et al., 2008).

Cooperative learning promotes effective communication, knowledge, and trust of group members (Slavin, 1987). People of different ethnic backgrounds working together develop positive feelings for each other. They cultivate mutual respect for each other. A better understanding is developed among students (Pate, 1988). According to Whatley et al.(2004), and Mitchell et al. (2004) group diversity in terms of knowledge and experience contributes positively to the learning process. Collaborative learning increases student interaction with each other and with the learning materials (de Abreu Moreira and da Silva 2003) and helps students to build higher-level cognitive skills and interpersonal skills (Michaelsen, 1992). Yager et al. (1985) argue that students learn better in a group setting. Collaborative learning also encourages constructive conflict resolution, where team members support and challenge each other (Johnson and Johnson, 1994). In addition, the social skills developed may help students to acquire some sense of social responsibility (Vermette 1988). Overall, a cooperative learning environment produces a positive impact on student achievement (Ream, 1990).

However, one of the concerns of introducing cooperative group work in institutions of higher education is the level of fairness or lack of it. It is unfair for all group members to be awarded same score (Conway et al.1993). The major setback in implementing cooperative learning by many educators is the evaluation of group work. The commonest approach is allocation of equal grades to all members of a group. There is an obvious flaw in this practice because the participation level of each member of a group varies. One way to ensure student involvement is to reward their participation and contribution (Yueh and Alessi 1988). The objective of this paper is to explore a peer assessment mechanism that rewards students based on their level of participation on assigned tasks. Peer assessment is a way to control 'free-riders' or 'hitchhikers' in group-related tasks (Conway et al 1993, Goldfinch 1994, Freeman 1995). Students are motivated and made accountable. Students gain increased awareness of the importance of group dynamics. When peer assessment is introduced in the evaluation process, group members behave in a positively interdependent fashion, and they are rewarded on the basis of the quality or quantity of the group product according to a fixed set of standards. Conversely, peer assessment has been found to cause discomfort in students, as they perceive it as criticizing their friends (William 1993). This discomfort can be reduced by providing streamlined grading guidelines. Yet, peer review and peer evaluation, as a form of collaboration, is recognized as a very important professional duty and it is aimed at accepting and providing objective, critical, documented review of the work of others (Alexander, 2000). This paper is a result of an exploratory effort to address issues relating to assessment within a cooperative learning environment.

Experimental Design

This exploratory study spans four different undergraduate and graduate courses taught over four semesters at two universities located in Houston, Texas. One of the authors taught three of the courses in healthcare administration (HADM 3131, HADM 4531 and HADM 5232) at the University of Houston, Clear Lake and the second author taught international finance (FIN 338) at the Texas Southern University. Therefore, the data employed in this study are generated from the aforementioned classes taught from fall 2005 through spring 2007. Table 1 describes the nature of the courses and the semester each experiment was administered.

At the beginning of each semester students were asked to self-select their groups. Each group was made up of three to four students. Each student was given a written handout which described the group task for the semester. The assessment criteria of the process as well as the product were contained in the handout. Each team was expected to draw up a team contract with detailed description of members' tasks and code of cooperation. The code of cooperation required that

Table 1
Courses Employed in Experiment

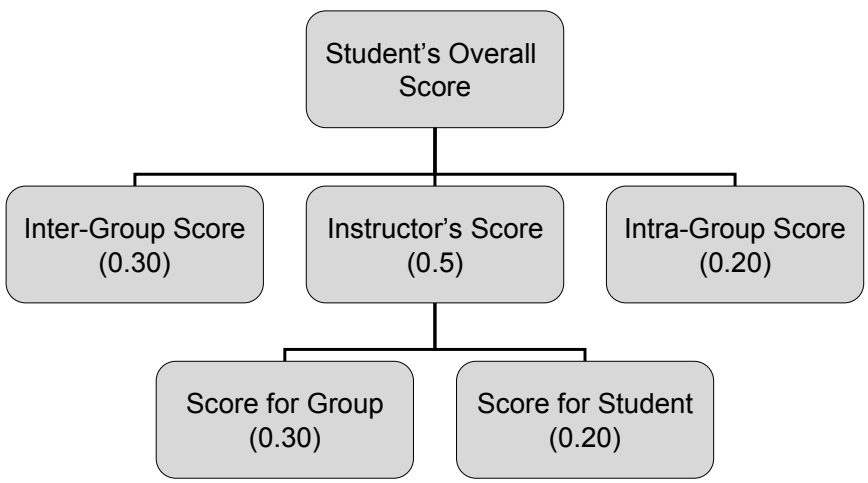
Experiment Code	Course	Semester
Exp1	FIN 338 (International Finance)	Fall 2005
Exp2	FIN 338 (International Finance)	Spring 2006
Exp3	FIN 338 (International Finance)	Fall 2006
Exp4	FIN 338 (International Finance)	Spring 2007
Exp5	HADM 3131 (Healthcare Administration)	Spring 2006
Exp6	HADM 3131 (Healthcare Administration)	Spring 2006
Exp7	HADM 4531 (Healthcare Finance)	Fall 2006
Exp8	HADM 5232 (Healthcare Finance) - Graduate	Fall 2006
Exp9	HADM 5232 (Healthcare Finance) - Graduate	Spring 2007

every member of a group be made responsible for the team's progress.

In each semester, the project accounts for between 20 and 25 percent of the total course grade. This is a pointer to the relative importance of the group assignment. Fiechtner and Davis (1992) demonstrated that at least 20 percent of the course grade should be based on group work to provide adequate group incentives. The students have about two months to prepare their projects, and they are expected to meet weekly in order to achieve the goal of a well-prepared project report. In an attempt to mitigate the free rider problem, each member of a group was assigned an individual final grade on the project under consideration. Figure 1 shows how the assessment mechanism works. Each student is awarded a group score plus an individual component to attain a final individual score. The individual score component includes an inter-group score, an intra-group score and an instructor score. The final individual score is designed such that it weighs group performance more heavily to encourage collective effort.

Each student in the class is expected to score the group when its members make their presentation in class. The inter-group score is based on three components: task content, organization and delivery. The task content includes a statement of task objective, effective summary of task,

Figure 1
Grading Mechanism



analysis of problem(s) in relation to key issues to be addressed and logical/correct answers to questions posed by other classmates. The organization component considers among other things, whether or not the presenting team provides a set of "hooks" for the audience. Other issues considered include: Are the key ideas explored? Did the team use discourse marker for key issues? Did the team provide closure by highlighting the main points? Finally, the delivery component considers the clear enunciation of words at appropriate volume, good use of eye contact with audience, appropriate use of audio/visual materials, modulation of voice of voice to catch audience attention, and delivery within assigned time.

The intra-group score is the score provided by each member of a team on each team member. This score is based on out-of-class meeting attendance, active participation during meetings, level of preparation for discussion at meetings, level of contribution toward task preparation, concern for group welfare, and motivation for input from group members. At the conclusion of a group presentation, each group member is given a hundred points to allocate among the members of the team.

Statistical Tool Employed

The *chi-square goodness-of-fit* test is employed in this study. The goodness-of-fit test is appropriate for exploring differences in categorical data. According to Holt et al. (1980), Preacher (2001) and Walker (2008), the *chi-square* statistic for an experiment with k possible outcomes, performed n times, in which $Y_1, Y_2, \ldots Y_k$ are the number of experiments which resulted in each possible outcome, where the probabilities of each outcome are $p_1, p_2, \ldots p_k$ is

$$\chi^2 = \sum_{j=1}^{k} \frac{(Y_j - np_j)^2}{np_j} \qquad (1)$$

In Equation (1), the difference in the observed and expected (or hypothesized) for each experiment is squared and summed and then divided by the total sum of expected observations. It is logical to note that the closer the measured values are to those expected, the lower the chi-square sum will be. Moreover, from a chi-square sum, the probability P that the χ^2 sum for an experiment with d degrees of freedom (where $d=k-1$, one less the number of possible outcomes) is consistent with the null hypothesis can be calculated as:

$$P_{\chi^2,d} = \left[2^{d/2} \Gamma\left(\frac{d}{2}\right) \right]^{-1} \int_{\chi^2}^{\infty} (t)^{0.5d-1} e^{-0.5t} dt \qquad (2)$$

Where Γ is the generalization of the factorial function to real and complex arguments:

$$\Gamma_x = \int_0^{\infty} t^{x-1} e^{-t} dt \qquad (3)$$

In Equation (2), P must be evaluated by numerical methods because of the absence of a closed form solution. The null hypothesis that is tested is that the difference between observed and expected occurrences is only due to chance. In other words, the *chi-square* statistic is employed to estimate the likelihood that observed values occurred only by chance. When the *chi-square* test is applied, one must note that only very small probabilities of the null hypothesis are significant. For example, if the probability that the null hypothesis can explain the experimental results is above a chosen critical level, an experiment is generally not considered evidence of a different hypothesis. As Walker (2008) notes, if a hypothesis is valid, the *chi-square* probability should converge on a small value as more and more experiments are run. The decision rule is to reject the null if the calculated probability, P is smaller than the chosen critical level of significance (alpha). Alternatively, the null hypothesis is rejected if the calculated *chi-square* is greater than the critical *chi-square* at the appropriate degrees of freedom.

Results

The data employed in this study were collected from fall semester 2005 through the spring semester 2007. Table 2 contains the summary of the analysis.

The expected number of grades is the number of groups formed in each class. Without peer assessment, each group member would be awarded the

Table 2
Data and Statistical Results

	Exp1	Exp2	Exp3	Exp4	Exp5	Exp6	Exp7	Exp8	Exp9
Observed Number of Grades	13	11	11	15	17	3	13	14	5
Expected Number of Grades	7	7	6	7	9	2	9	7	3
Chi-Square	38.46								
Degrees of Freedom	8								
Probability Value (Q)	0.00000619								

same grade for the group project, and we would expect that the number of grades would be equal to the number of groups formed in that class. With peer assessment, the observed number of grades may be different than the expected number of grades. We expect to see a greater distribution of grades among the students with peer assessment. The null hypothesis is that observed number of grades in each experiment is the same as the expected number of grades. In other words, the observed grades frequency "fit" the expected *a priori* frequency and the difference between observed and expected occurrences is only due to chance. As reported in Table 2, the calculated *chi-square* of 38.46 is greater than the critical *chi-square* (with $\alpha = 0.01$ and df = 8) of 20.09. The conclusion here is that the null hypothesis is rejected.

Table 2 shows the statistical analysis of observed and expected number of grades. The table of the observed versus the expectation doesn't show any obvious divergence from the expectation, yet the chi-square test unambiguously fingers the bias. A X^2 sum of 38.46 in an experiment with 9 possible outcomes (8 degrees of freedom) has a probability of occurring by chance of 0.00000619—about six in a million—a highly significant result, worthy of follow-up experiments and investigation of possible mechanisms which might explain the deviation from chance.

Table 3 (see page 20) shows the solicited comments of students on the overall experiment. These comments are mostly positive.

Conclusion

Educators are constantly challenged to bring some renewal into the learning environment. They are expected to bring to the instructional environment efforts which lead to the creation of awareness, modification of instructional approaches and reduction in boredom. Cooperative and collaborative learning are effective ways through which educators and students are engaged in the promotion of learning. Many educators favor the practice of assigning students to groups in order to solve a given problem. However, one of the concerns of introducing cooperative group work in institutions of higher education is the level of fairness or lack of it because all group members are assigned same score giving room to *hitch-hiking*.

In this paper, a reward system is proposed which combines instructor's score with peers' score to obtain an individualized score for every member of a group. With peer assessment, the observed number of grades is different from expected number of grades without peer assessment. Therefore, there is a greater distribution of grades among the students with peer assessment than without peer assessment. Finally, given the positive disposition of students to the experiment, one can conclude that the proposed evaluation instrument is an effective way to deal with free riding in group assignments.

Table 3 Some Student Feedback on the Experiment
Likes:
Sets standards of what you expected and will be graded on
Makes you pay attention; stay interested
Good idea to do something besides tests
Broad range on your evaluation
Gives you a change to see how your peers think you did on your presentation
Classmates may have different opinions than the teacher
Lets you know how you can better yourself with presentations
Gives a fair grade of overall efforts
Allows students to give their opinion
Measure yourself with fellow classmates
Pushes you to do your best
Helps you learn how to pay attention to details
Feedback from peers
Gives us a reason to pay more attention
Reflects how much work groups put into their presentations
Chance to grade in an organized manner
Equal chance to reflect on their views
Gives good insight
Grade based on participation
You empowered us because we are able to evaluate our classmates
We were able to complete our assignments on time because we know there is a penalty if we didn't
Our team meetings are more organized because we have to produce minutes of our meetings
Our team members are constantly in touch with each other
There was a kind of bond among the members of our team
Team members are encouraged to use their skill in the most efficient way when tasks are assigned at team meetings

Table 3 (cont.) Some Student Feedback on the Experiment
Dislikes:
Repetitive
Hard for groups to get together
One person may present better than the other
Some peers are way too critical
Don't know how to give constructive criticism
Cannot foresee individual efforts
Can be filled out on how the evaluator personally feels about a person or group
Writing bad reviews
Feel as you have to grade the groups good because you want a good grade
Peers are biased
Might be inaccurate
A tendency to show favoritism
One of my team members does not come to class regularly and caused problems for our team.

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Implementing an Accounting Honors Program: One School's Response to the Changing Landscape of Accounting Education

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ABSTRACT

This paper describes our motivation for and the development and implementation of an Accounting Honors Program (AHP). Challenged to respond to the changing landscape of accounting education, yet constrained by limited resources, curriculum inflexibility, a growingly heterogeneous student body and the pressure to maintain student enrollments, the AHP has proven to be an efficient response this challenge. We also offer our reflective assessment of how the AHP has enhanced student, faculty and employer satisfaction. It is our hope that faculty and accounting program administrators from schools facing similar financial and environmental constraints will benefit from our experiences.

Introduction

Motivated by the (then) recent trends of dwindling accounting enrollments, Albrecht and Sack (2000) called for sweeping changes in accounting education. A significant shortcoming cited in the monograph was the "cookie-cutter" approach that had been used to develop accounting curricula. A respondent cited in the monograph articulated the problem as follows: "We have been following 'a one shoe fits all' approach to curricula, to teaching, to students, and to faculty development" (p. 60).

While the Albrecht and Sack monograph called for fundamental changes in accounting education, the ability of individual schools to respond to the call likely varied. At our tuition-driven institution[1], the need to maintain enrollments was creating a bi-modal distribution in the ability levels of our student body. Given limited resources and a lack of control over admissions, we felt that we could best implement meaningful change by abandoning the "one shoe fits all" approach if we

1 Duquesne University' s A.J. Palumbo School of Business Administration is accredited by the Association to Advance Collegiate Schools of Business (AACSB) and has approximately 1,200 undergraduate students. The University's acceptance rate is around 79% and the average SAT score of incoming freshman is 1120. Our department, which does not have separate AACSB accreditation, has approximately 250 students pursuing a degree in accounting.

could minimize the growing heterogeneity in our student body.

In the paragraphs that follow, we describe the creation and implementation of an Accounting Honors Program (AHP) which fundamentally changed our approach to accounting education. We discuss our motivation, design and implementation issues encountered in developing and delivering the program. We then offer our subjective assessment of how this program has enhanced student, faculty and employer satisfaction. It is our hope that faculty and accounting program administrators from schools facing similar financial and environmental constraints will benefit from our experiences.

Motivation

Albrecht and Sack's (2000) monograph echoed concerns advanced earlier in the academic (AAA 1986; AECC 1990) and professional (White Paper 1989) communities. As Nelson et al. (1998) point out, however, student characteristics and resource limitations often constrain a school's ability to implement strategic change. Similarly, Barsky et al. (2003) stress the importance of financial and human capitals on the educational initiatives that can effectively be delivered. Schools with limited resources, more liberal admission requirements and a heterogeneous student body (such as ours), are likely encounter greater challenges in adopting the monograph's recommendations.

We also had to consider the impact that any changes might have on the satisfaction of the students in our program. Our school is a tuition-driven institution and, as a result, stakeholder satisfaction is of paramount importance. We were concerned that part of the dissatisfaction alluded to by Albrecht and Sack (2000) was rooted in the spiraling costs of higher education. Significant tuition hikes were increasing the pressure for us to distinguish our program to justify the higher educational costs.

Dramatic and persistent tuition increases also had significantly altered the competitive landscape for student recruitment. High quality students who might once have preferred a smaller, private institution like ours were now considering larger, public schools with lower tuition costs. Tuition-driven schools often need to admit a base number of students each year to maintain economic viability. Thus, economic factors were contributing to a greater dispersion in the abilities of our students and inhibiting our ability to implement wholesale curriculum change.

Our challenge can be expressed as follows: Could we (1) provide a growingly heterogeneous student body with a meaningful and satisfying educational experience, (2) attract more high quality students to major in accounting, (3) maximize the value of these students' education without alienating other students, and (4) provide a distinctive enough education to warrant our tuition premium? Adding to this mix the reality of curriculum inflexibility, we knew that these goals would have to be accomplished within our existing framework of courses.

Ultimately, we decided that the most effective way to substantively address all of these issues would be to introduce an Accounting Honors Program (AHP). Benefits of honors programs are well documented. According to Hoxby (1998), attracting high quality students without raising the price of education, in effect, raises the quality of the institution. Thus, an honors program offered the potential to attract high-quality students without significantly increasing the cost to the student or the institution. In turn, high-quality graduates reflect positively on the school; a benefit that accrues to all students, not just those in the honors program (Long 2002). From a student perspective, honors programs offer a myriad of benefits including small class enrollments, more individualized attention from faculty, and enhanced networking opportunities (Samuels 2001). As summarized by Long (2002), "honors colleges offer students a unique, high quality experience at a low cost."

Program Development and Implementation

Stakeholder Input

Prior to developing the AHP, we presented our ideas to members of our Accounting Advisory Board (AAB). Our AAB is comprised of approximately thirty individuals from various sectors of the accounting profession, although most are either employed by or have been employed by public accounting firms. Their professional experience, which ranges from five to forty years, provided us with a variety of perspectives. The AAB was very receptive to the AHP initiative. Since many AAB members represent accounting firms who actively recruit our students, these discussions also provided an initial opportunity (albeit, subtle) to market the honors program.

Program Philosophy

Before developing the specifics of the AHP, we agreed to the following guiding philosophy:

> The Accounting Honors Program will provide a unique educational experience that offers its students additional opportunities to develop both technical and non-technical skills.

First and foremost, we did not want the honors classes to be more difficult than the same courses in our traditional, non-honors track. Rather, we wanted honors sections to involve additional assignments and/or enhanced material coverage that would challenge the students in ways that we could not challenge the non-honors students. It was our hope that these "signature assignments" would provide a vehicle for developing the additional technical and non-technical skills that would define the AHP.

AHP Degree Requirements

Although we would have preferred that all ten accounting courses be required for students to qualify for the AHP degree designation, we had to acknowledge the fact that many of our accounting majors were often involved in activities (winter internships, study abroad experiences and the pursuit of multiple majors) that could create obstacles to their ability to register for the honors courses when offered.

We decided that our two sophomore level honors courses—Financial and Managerial Accounting—should *not* be required for the honors designation as there is typically a significant increase in the number of accounting majors at the end of the sophomore year. Student word of mouth appears to be an effective marketing tool for the honors program, particularly when it comes to students who may have lacked confidence at the time of registering for their initial accounting courses. We did not want to exclude qualified students solely because they had not taken advantage of an early sophomore level accounting honors class.

Ultimately, we decided to require Intermediate Accounting I and II and Cost Accounting as cornerstone courses in the AHP. These three courses were chosen because they are typically considered the most challenging courses in the accounting curriculum and because they seem to have the greatest cache amongst both our AAB members and campus recruiters. We also felt that these courses best capture the essence of the accounting degree and, for students to be lacking an honors class in any one of them, would result in a misleading honors degree designation. Students are permitted to choose any four of the remaining seven accounting courses to complete the AHP degree requirements.

Admission Requirements

Setting admission requirements presented a challenge. We were hesitant to set the bar so high that it would result in suboptimally small class sizes and send an incorrect message regarding the rigor of our honors classes. On the other hand, establishing too low a bar could result in the opposite effects and potentially undermine the integrity of the honors program.

Although no other academic department on our campus has an honors program, there is an Integrated Honors College at the university level that we used as a benchmark to establish admis-

sion criteria. Following their lead, we established minimum requirements based on a combination of SAT score and overall grade point average (GPA). We made an additional concession in that we allowed students who did not meet the specified criteria to enroll in honors classes at the discretion of the instructor. Prior to permitting the students to enroll in honors sections, the instructor speaks with one or more of the student's current instructors and asks for an assessment of the student's ability to succeed in an honors class.

Distinguishing Features

We initiallyagreed that rigor should not be a differentiating characteristic of the honors classes. However, we also accepted that it would be difficult to avoid since a natural by-product of eliminating the lower tail of the distribution allows for expanded material coverage and greater depth of coverage in existing topics. Often, weaker students introduce a "drag" on the pace of a course due to the students' lack of initiative in preparing for class and their difficulty in grasping sometimes even the most basic of concepts.

To afford our best students with the most stimulating accounting education that we could offer, staffing of the honors classes was of paramount importance. We decided to: (1) staff honors classes with our best, full-time faculty; and (2) assign a single instructor to no more than two honors classes. By doing so, the best students would be "known" by more faculty members - a quality that should later prove useful in the recruiting and award-granting processes.

Our second objective was to manage class size. While enrollments in our typical undergraduate classes sometimes approach 5Ø students, we capped enrollment in honors classes at 25, with a preferable enrollment of 2Ø or fewer students. The third objective was to schedule as many of the honors classes during the most popular time slots (between 1Ø:ØØ a.m. and 2:ØØ p.m.). While we were not afforded the luxury of giving honors students preferential scheduling times, we were able to manage this aspect of the schedule.

Signature Assignments

Arguably, the most challenging aspect in designing the honors program was the creation of a "signature" assignment for each course to differentiate honors courses from their respective counterparts. Faculty teaching honors sections were asked to develop and incorporate into each honors class a signature assignment; a unique component to the course aimed at enhancing the depth and/or breadth of desired competencies that students develop in our program. The American Institute of Certified Public Accountants (AICPA)—the professional organization of CPAs in the United States—has authored a widely-acknowledged list of desired core competencies expected of entry level accountants. While our existing curriculum adequately addresses many of these competencies, we felt that the honors classes presented the ideal setting to improve our program by providing highly capable students with additional opportunities to develop their skill set. Moreover, we felt that an audience of honors students would not only be receptive to, but would also flourish as a result of, our attempts to be adventurous in designing these assignments.

While the AICPA Core Competency list is quite extensive, our ongoing interaction with the AAB, recruiters, and recent graduates assisted us in prioritizing the competencies. We were concerned with which competencies were most highly-valued by these stakeholders, which ones would be most beneficial to our students and which ones we were best positioned to deliver. In addition, we were mindful that the signature assignments not only had to contribute to developing the targeted competency(ies) but also had to fit within the natural framework of the course.

Several high priority competencies emerged as a result of this process. We felt that two *Broad Business Competencies*—strategic and critical thinking and leveraging technology—and two *Functional Competencies*—reporting and leveraging technology—were appropriate areas to target. In addition, we felt that several *Personal Competencies*—professional demeanor, interaction, leadership and communication—could be substantively addressed by signature assignments

in several of the courses. Exhibit 1 presents a mapping of the AHP skill set against the AICPA Core Competencies.

The signature assignments are important in two respects. As mentioned earlier, they provide students with additional opportunities to develop skills that are valued by the accounting profession. Many AHP students have commented on and expressed an appreciation for the fact that their educational experience has resulted in skill sets that go well beyond those of their counterparts. Secondly, the signature assignments also serve to carve an identity for the honors program. Our honors students are acutely aware that they are being asked to do something that other students are not and are quick to share this information with their fellow students, thereby helping to differentiate the program from its non-honors counterpart

While we have developed a signature assignment for every course in our AHP, space limitations preclude a full description of each in this paper. Instead, we present a sample description of the signature assignment for one of the honors courses—Cost Accounting. However, descriptions of the signature assignments for the other honors courses can be obtained from the authors.

In Honors Cost Accounting, students are required to analyze and recast profitability reports for each of the 10 academic divisions within our university. In recasting the reports, students tackle the difficult topics of transfer pricing and cost allocation, both of which are surrounded by much ambiguity and for which no one correct answer exists.

The profitability reports must be restated so that each of the university's academic divisions is treated as a profit, rather than a cost, center. Undergraduate revenues must first be redistributed on a credit-hours generated basis, rather than the credit-hours taught basis that is currently being used by the university. A transfer price for credit hours generated by one academic division (e.g., School of Business, School of Education), but taught in another (e.g. university core curriculum classes taught in the College of Liberal Arts and the School of Natural and Environmental Sciences) must also be established. Finally, the current method used to allocate university-wide overhead must be evaluated and students must decide whether the method needs to be revised. The use of actual operating data, particularly because the data comes from their own institution, seems to heighten student interest in the project. The absence of a correct solution frustrates some, but also offers a learning experience that students enrolled in other sections of the Cost Accounting course do not get.

Promotion Strategy

We promote the program along several fronts--to potential students, current students, advisors, faculty and on-campus recruiters from area accounting firms. Our university, like many private, tuition-driven institutions, routinely holds several university and school-wide recruiting events each year. We use this forum to generate interest in the AHP on the part of both highly-qualified students and *their parents*. Program promotion also takes place during several strategically placed business school classes offered in the second semester of the students' freshman year (and immediately prior to registration for the fall offerings of their first accounting course, Financial Accounting). In addition, we personally contact business school students enrolled in the university's Integrated Honors Program to inform them of the AHP and its benefits.

Our promotion efforts are further reinforced by student advisors and the faculty. We ask student advisors to encourage qualifying students to participate in the AHP or to speak with an accounting faculty member about the program if they are undecided. Business school faculty are also helpful in identifying students who might be better served by the AHP experience. Potential students are contacted on an individual basis and invited to register for honors classes based on the recommendation of these trusted faculty members.

We also actively promote the AHP to on-campus recruiters for those firms who hire our students for internships and/or full-time employment. The honors designation helps recruiters identify the "elite" of our accounting students. Not sur-

prisingly, they have quickly learned that there is a significant difference between an AHP student with a 3.6 GPA and a student with the same GPA who has chosen not to pursue the honors designation.

Program Assessment

While we are not able to present an objective assessment of the program's effectiveness due to a lack of data from students prior to the introduction of the AHP, we do offer our subjective assessment of the program in the paragraphs below.

Student Benefits

One of the AHP's validating measures, in the students' eyes, is that a tangible payoff exists for having taken the initiative to pursue the honors designation. This payoff often takes the form of enhanced evaluations from recruiters.

Another tangible reward for students is financial in nature, in terms of scholarships and awards. While most accounting students qualify for internal departmental scholarships, preferential treatment is often given to AHP students. This is certainly the case when two scholarship applicants have similar credentials yet one has chosen the honors path while the other has not. Participation in the AHP has not only affected whether an award was granted, but also the amount of the award.

External scholarships at the state and local level are also an example of the financial rewards that AHP participation has brought to students. In our case, a number of awards are funded by the Pennsylvania Institute of Certified Public Accountants (PICPA), the Pittsburgh Chapter of the PICPA and the Pittsburgh Chapter of Financial Executives International (FEI). While we have not received any direct feedback from these organizations regarding the effect of the honors designation on their funding decisions, AHP students have received almost all of the awards granted to our students. In addition, as authors of recommendation letters for these external awards, we would hope that a student's participation in our AHP is an attribute that, when referenced in such a letter, serves to further distinguish the student.

Economic benefits are not the only benefits that can accrue to our AHP students. Simply put, we believe that the education afforded to our honors students is *better* because it capitalizes on their initiative and intellectual talents. Both depth and breadth of coverage is greater in the honors sections, even if the students are not aware of it. Their basic intelligence, time spent in class preparation and interest in understanding the course content all contribute to a faster pace, thus freeing up time for coverage of topics that cannot be covered in non-honors sections of the same course. In addition, the signature assignments expose students to a unique element that is not offered in the non-honors classes. These signature assignments are geared to developing their interpersonal, communication and computer skills, which we all are acutely aware, are highly valued in the marketplace.

A final student benefit of the AHP is an overall increase in student satisfaction with their accounting classes. This benefit comes from the reduced heterogeneity of student abilities in our accounting classes—both honors and non-honors. In the past, students capable of performing at a high level were dissatisfied when the class pace was slowed by those having difficulty grasping course material. Conversely, low performing students were often intimidated by their high performing counterparts. They were reticent about asking questions, fearing that others would perceive them as stupid. The introduction of the AHP classes minimized this effect by dividing the students into two distinct groups, thus reducing the variability of the talents in the respective classes. Our experience, to date, provides anecdotal evidence that such is the case.

Faculty Benefits

The separation of high and low performing students into separate sections of the same course has enhanced the ability of faculty to connect with their target audience. With less dispersion in ability levels, faculty can tailor their classroom activities around each class's "average" student. There is simply a different definition of "average"

between honors and non-honors sections. We are discovering that faculty, as well as student, satisfaction in *all* of our accounting offerings has improved in the process.

Stakeholder Benefits

As cited earlier, on-campus recruiters from the accounting firms make it a practice to seek out our "best and brightest" students. Quite often, they do so by initiating contact with targeted faculty members and using this input to identify candidates for their entry-level internship and full-time positions. While this dynamic will likely continue, the AHP designation on a student's resume and transcript signals to recruiters that a student has sought out a more distinctive educational path and has shown the initiative to do something to distinguish themselves from others. The AHP designation provides further evidence that the honors student has accomplished more academically (thus increasing the likelihood of passing the CPA exam) *and* has better interpersonal, communication and computer skills due to the completion of the signature assignment in each honors course (thus increasing the likelihood of succeeding in the professional accounting profession).

Unresolved Issues

Despite our success in implementing the AHP, we still have several unresolved issues that were somewhat difficult to overcome. In the following section, we describe these issues and explain our initial efforts to overcome these obstacles.

Misconceptions about Rigor

A more subtle, but problematic, dimension to this misperception is that some students prefer to be the "stars" in a non-honors section than "average" in an honors section. We have come to accept the inevitable fact that there will always be some highly-qualified students who opt out of the honors track. While disappointing, we have resigned ourselves that there is little that we, as a faculty, can do to convince these students that the long-term benefits of participating in the AHP will far outweigh the short-term costs.

We have also come to accept that our claim that "honors classes are not harder" may be an oversimplification. First, honors classes typically encompass greater breadth of coverage and/or greater depth of coverage compared to the non-honors classes, primarily because the "best and brightest" students are more motivated to prepare for class, grasp the material more quickly and engage in more insightful discussions. Second, AHP students must complete the signature assignment requirement, while this is not a requirement in the non-honors classes. Finally, the cohort dynamic of the honors courses, at times, enhances the competitive atmosphere of these classes. We find that students take greater responsibility for their education which invariably requires more effort on their part. Thus, in the eyes of some students, these attributes equate to a more rigorous class.

Lack of Grade Compensation

A second issue that has surfaced is compensatory in nature. Most high school programs adjust for the fact that a class is designated as 'honors' when determining a student's grade point average. As a result, honors students often attain a GPA in excess of the 4.0 maximum that can be earned by non-honors students. Such adjustments provide ample incentive for students to enroll in honors classes. We, however, do not have the ability to make such adjustments formally. We, as a department, do not believe that it is appropriate to do so informally, either. Faculty teaching honors classes do not adjust student grades due to the honors designation, although grade distributions tend to be higher in these classes as a natural result of the quality of students enrolled in the class. Instead, we stress to students that the honors designation on their transcripts and resumes provides more distinction than a GPA that exceeds the 4.0 ceiling to which recruiters and graduate schools have become accustomed.

Scheduling Conflicts

A number of scheduling issues can present an obstacle for students interested in registering for honors classes, particularly in relatively small programs such as ours. Scheduling conflicts arise when students participate in experimental edu-

cational programs (e.g., winter internships and study abroad programs) and/or pursue additional academic majors (in addition to accounting).

Winter internships in public accounting and semester-long study abroad programs typically require that the participating student depart from the traditional course sequence. Unfortunately, due to the relatively small number of honors students and faculty, only one honors section of each required accounting class can be scheduled each academic year. In some cases, students get back on track during the summer semester, although they usually have to take a non-honors accounting course to do so. Rather than have interested students wait a year for the next cycle of honors classes to be offered or not enroll in *any* honors classes because the honors designation could not be achieved, we decided that flexibility in the AHP requirements would the best solution. This is one of the reasons why we require only Intermediate I and II and Cost Accounting and allow students to choose as few as four of the remaining seven accounting classes to qualify for the honors designation.

Our school's flat-rate tuition system seems to have elicited a "more is better" response amongst our student body. Students quickly learn that they can complete the coursework for additional academic majors at little or no extra tuition cost and the perceived flexibility in career choices that these additional majors provides has become increasingly valued by our students. While we can ensure that the student's path to the honors degree is conflict-free with respect to accounting courses, this has been more problematic when the course requirements of other majors are introduced into the equation. Given limited resources, we have resolved ourselves to communicate to students that they must choose that path that is most important to them.

The "Pacesetter" Problem

It was noted above that an unexpected benefit of the AHP was the 'cohort' effect, where students' high initiative in the classroom seemed to set the bar for the expectations of the class and to fuel the performance of the class as a whole. Excellent students have long served as the pacesetters of our classes. In committing to the AHP we also committed to removing our pacesetters from our traditional course offerings. While this was not a desired consequence, its impact has not been as negative as initially anticipated. This problem is alleviated somewhat by strong students who have decided to remain in traditional classes. In many cases, the quality of work of these students is comparable to their AHP counterparts and thus they help set the pace in the non-honors classes.

Conclusion

Over the past several decades accounting programs have faced a myriad of challenges. These challenges include better preparation of graduates for a rapidly changing accounting profession, producing satisfied graduates and enhancing the value-proposition of students' academic experience. While some universities and colleges are well equipped to implement innovative changes in response to the "accounting change" movement, other schools are burdened by institutional constraints that inhibit their ability to do so.

The purpose of this paper is to share a curriculum idea—an Accounting Honors Program—which we believe has benefited a variety of our stakeholders. It is the product of our desire to afford our best students with the best accounting education that we can possibly deliver. The program has enriched the educational experience for our accounting students and faculty alike and has been well received by our AAB and accounting firm recruiters who actively seek out our honors students.

The AHP was our school's first attempt at delivering an honors program at the departmental level, and one that was motivated by Albrecht and Sack's (2000) challenge to accounting educators. However, we feel that the framework described and the ideas shared in this paper are not limited to the accounting discipline. With the increasingly competitive landscape of higher education, colleges and universities may find that implementing major-specific honors programs can be a cost-effective response to the challenge to improve the quality of the learning experience.

The attributes of our university—tuition dependence, somewhat liberal admission policies and heterogeneity of student abilities—were key drivers in the design and implementation of this initiative. Granted, schools whose attributes differ from ours might pursue alternative responses to the challenge to improve. However, we believe that schools facing similar external constraints as ours and are confronting the issue of how to enhance their programs may benefit from our experiences.

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Exhibit 1. Accounting Honors Program Skill Set Mapped Against AICPA Core Competencies

		214 Financial Accounting	215 Managerial Accounting	310 Accounting Info Systems	311 Intermediate Accounting I	312 Intermediate Accounting II	314 Advanced Accounting	315 Cost Accounting	411 Auditing	412 Intro to Income Tax	414 Corporate and Partnership Tax
Broad Business Competencies											
	1. Strategic/Critical Thinking		X					X	X	X	X
	2. Industry/Sector Perspective		X	X					X		
√	3. International/Global Perspective										
	• Analyzes the cultural and financial impacts of moving into new markets				X	X					
	4. Resource Management		X								X
√	5. Legal/Regulatory Perspective										
	• Describes the legal and governmental/regulatory environment in which entities operate and the significant costs and benefits of regulation.				X	X				X	X
	• Identifies and explains the political and environmental forces impacting both the accounting standard setting process and the regulation of the profession.				X	X			X		X
√	6. Marketing/Client Focus										
	• Recognizes and understands employer/client protocol and expectation.				X				X		
√	7. Leverage Technology										
	• Uses technology to develop and present strategic information		X	x			X	X	X		
Functional Competencies											
	1. Decision Modeling			x					X	X	
	2. Risk Analysis			x					X		
	3. Measurement								X		
√	4. Reporting										
	• Prepares reports with objectivity, conciseness and clarity.			X	X	X		X	X	X	X
	• Employs appropriate media in report preparation and presentation.			X			X	X	X	X	X
√	5. Research										
	• Employs relevant research skills						X		X	X	X
	• Accesses relevant standards, rules, and other information						X		X	X	X
	• Evaluates different sources of information and reconciles conflicting or ambiguous data						X	X	X		X
√	6. Leverage Technology										
	• Uses technology assisted tools to document work performed	X	X	X				X	X		X
	• Accesses appropriate electronic databases to obtain decision-supporting information			X			X		X		X
Personal Competencies											
√	1. Professional Demeanor										
	• Cultivates growth in personal conduct and capabilities.				X	X	X			X	X
	• Recognizes situations where professional ethical standards apply and behaves accordingly.				X	X			X		X
	• Objectively considers other's professional evaluation.				X	X		X	X		
	• Adheres to a level of personal appearance appropriate to the envinronment.						X		X		
	2. Problem Solving and Decision Making		X	X					X	X	X
√	3. Interaction										
	• Interacts and cooperates productively and maturely with others.		X				X	X	X	X	
	• Facilitates free expression and constructive activities of others		X				X	X	X	X	
	• Coaches or mentors in appropriate circumstances.		X				X	X	X		X
	• Commits to achievement of common goals when working on a team.		X				X	X	X		
	• Recognizes and accommodates the protocols and expectations of teams.		X				X	X	X		
√	4. Leadership										
	• Rallies the support of others to accomplish objectives.		X				X	X	X		
	• Values inputs and points of view of others and responds appropriately.		X				X	X	X		
√	5. Communication										
	• Organizes and effectively displays information so that it is meaningful to the receiving party.			X			X	X	X	X	X
	• Expresses information and concepts with conciseness and clarity when speaking.			X			X		X	X	
	• Expresses information and concepts with conciseness and clarity when writing.			X	X	X		X	X	X	X
	• Receives and originates direct and indirect messages as appropriate when listening, reading, writing and speaking						X	X	X	X	
	• Uses interpersonal skills to facilitate effective interaction.		X				X		X	X	
	• Places information in appropriate context when writing.				X	X		X	X	X	X
	• Places information in appropriate context when speaking.						X		X	X	
	6. Project Management			X						X	
√	7. Leverage Technology										
	• Acquires skills through technology-based learning modules	X		X					X		

Unique Experiences and Outcomes of an Undergraduate Student Marketing Research Project, Involving a Sensitive Community Subject

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ABSTRACT

This article discusses the unique experiences and outcomes resulting from a community based research student project. Applied research in business undergraduate classrooms is unique in any form but particularly in social causes, and specifically with controversially topics such as Domestic Violence. The purpose of the research was to gather data for strategic development and establish baseline community attitudes towards Domestic Violence prior to launching the integrated marketing campaign developed by the students of the Integrated, Applied and Social marketing classes of the Colleges of Business and Arts and Sciences. The student outcomes include the development of real skills, enthusiasm for learning and understanding of use for research in an overall marketing plan.

INTRODUCTION

This article discusses an applied learning project involving marketing research for a sensitive social cause, domestic violence. A Social marketing approach (Kotler, 2002) was used as the foundation for teaching applied research using the stages of problem definition, situation analysis, instrument design, data collection, analysis, strategic input and presentation. Throughout each step, unique experiences and outcomes were discovered in both the qualitative and quantitative aspects of the project. Due to the sensitive nature of the communications plan for domestic violence services, the experiential nature of the project was often controversial, considered extreme by some, inspiring and empowering for many, and ever changing for the students. The research itself provided significant input to the strategy and development of a mass media marketing plan for a local domestic violence service center, and, even more importantly, resulted in tremendous learning outcomes for students in applied market research.

BACKGROUND

Applied Research in the Classroom

Applied—also called "experiential"—learning has received a remarkable amount of attention in the marketing education literature in recent years (Dommeyer, 1986; Titus & Petroshius, 1993), all highlighting the significance of applied learning in offering students opportunities, advantages and experiences for key elements of learning.

Kolb (1984) says that experiential learning is the "process whereby knowledge is created by the transformation of experience" (p. 38). Experience as a key component in the learning process has been proffered as early as Plato with "compulsory learning never sticks to the mind . . . let lessons

take the form of play" (427-347 B.C.). Studies suggest that experiential learning works as it increases student involvement (Slavin 1980), encourages thinking (Bonwell & Eison 1999) and leads to better test scores (Hakeem 2001).

Titus and Petroshius (1993) say that "discovery techniques such as real world class projects have been shown to offer numerous advantages over other expository approaches such as lectures and objective exams" (p. 20) Experiential learning techniques offer students the opportunity to apply the concepts and theories they have learned to "real-life" situations. In applying their classroom-based knowledge, students practice skills in planning, problem-solving, decision-making and written and oral communication. Petkus (2000) identifies "concrete experience" and "active experimentation" as two of the four key elements of learning, along with "reflective observation" and "abstract conceptualization" (p. 64).

While much attention has been paid to the importance of hands-on learning in the marketing field, relatively few applied educational efforts are available in undergraduate marketing research curricula (Wright 2001). The experiential learning project described here was unique insofar as it used research to develop a marketing communications plan, showing the students utility of research for an applied end result. In addition to its applied nature, this project was unique insofar as it combined experiential learning with an interdisciplinary approach, a social marketing topic, and a highly controversial issue.

Interdisciplinary Approach

The interdisciplinary approach was not without its difficulties, given the differences in models and theories, media selection, and segmentation approaches of competing academic disciplines. This difficulty was further pronounced by the few examples in the literature that exist to guide team teaching approaches to interdisciplinary education (Athaide & Desai, 2005).

Cooper, Carlisle, Gibbs and Watkins (2001) found that most applied interdisciplinary projects are limited to health-care fields, although there are a few examples that combine different types of business courses or science courses together. O'Hara and Shaffer (1995) developed an experiential learning project that combined personal selling and purchasing to teach the roles of buying and selling, while Lunsford and Henshaw (1992) combined research and engineering courses in product development. None of these documented interdisciplinary applied learning projects also targeted social issues.

Social and Controversial Issues

Social marketing is the "use of marketing principles and techniques to influence a target audience to voluntarily accept, reject, modify, or abandon a behavior for the benefit of individuals, groups, or society as a whole" (Kotler 2002, p. 115). Social marketing is differentiated from other marketing behavior change approaches by two critical components: behavior change must be a stated objective; and, the primary beneficiaries of the approach must be society as a whole.

Students in a social marketing class from the Department of Communication & Theatre and a marketing class from the College of Business at a state university worked together to complete the research necessary to develop and execute this social change communications plan. Included in the plan were behavior change objectives, the results of which are indicated below. Having actual outcomes, and being able to affect such outcomes seemed to affect the student barriers to learning, motivation for applied learning, social engagement, and other valuable outcomes discussed below.

Student Apathy for Research

Negative attitudes are considered important barriers in teaching students research methodology. (Papanastasiou 2005). Student self-efficacy about research can be defined by their confidence in carrying out different research tasks such as described in the Scientific Method (Holden et al. 1999, Unrau and Beck, 2004). A study of master's students (McMillan 2008) revealed that many students learn only enough to pass the course.

One way to change student attitudes towards research is to provide explicit research opportunities (Bard et al. 2000). In an experiential learning exercise for a trade booth project within a marketing class, Bobbit et al. (2000) found that students were motivated by grades, bragging rights, peer pressure and interclass rivalry, but they did not document any evidence of effectiveness (p. 23).

A study located in a western state (Lei 2008) identified factors that would change student attitudes. This study used similar topics as the Scientific Method to measure the students learning expectations and outcomes. Lei found a strong positive correlation between students' research interest and the perceived usefulness of the project. Lei also identified a positive correlation between students' research anxiety and task difficulty.

Reduced Anxiety

Examples from the literature illustrate that student anxiety can be reduced by applying research skills to classroom-based or live projects. "One way to influence student's beliefs and attitudes toward research is to provide explicit research opportunities with the training environment. Specific interventions such as instruction in research methodology have been shown to markedly increase student's research self-efficacy, expand their perceived utility, and reduce anxiety about conducting research" (Schaller & Parker, 1997, p. 273-287). Students also need to experience the outcomes, "People form enduring interests in activities in which they view themselves to be efficacious and in which they anticipate positive outcomes" (Bard, Bieschke, Herbert, Eberz 2000).

Enhanced Research Skills and Understanding the Value of Research

According to Hopkinson and Hogg (2004), during a study of qualitative, experiential learning at Lancaster University, students found that lectures became significant to students only upon experience. They were surprised at the difficulties they experienced. "Experience brings feelings and intuitions to data collection and analysis of research, directing students' attention towards critical research issues.

A review of a situation analysis project defined as "a collection and study of past and present data with the potential to influence performance," showed it to be a realistic experience and task for students to develop important skills. The outcomes showed students strongly agreed that they had a better understanding of using research skills, understand targets, and use the situation analysis (Munoz and Huser 2008).

Business marketing instructors are increasingly finding experiential learning to be an important teaching tool (Anselmi and Frankel, 2004: Petkus, 2000; Munoz and Huser 2008). Nevertheless, few market research instructors incorporate applied exercises to show students the value of primary research in the marketing process.

Understanding the Value of Teamwork

A Lancaster University study involved groups and individuals and revealed that teams capitalized on different individual strengths but were limited in terms of individual needs not necessarily emerging. Having students exposed to the complexity and ambiguity of research intrigues them and thus enhanced their learning and skills in many ways. (Hopkinson and Hogg 2004)

Slavin suggests that group goals enhance academic achievement (1980) as long as there is individual accountability. It improves self-esteem, attitudes toward learning, and intergroup relationships, preparing students for careers upon graduation.

Enhancing Career Competency

As Bobbitt, Inks and Kemp (2000) note, students too frequently isolate concepts and skills learned in different classes without learning how to integrate them. Students may leave academia without a good understanding of the inter-relationships that exist among subject areas professionally. And, based on the lack of attention by industry to analyze competitors and consumers (in a situation analysis), Munoz and Huser found it was imperative for marketing and business educators

to stress the importance of experiential learning such as situational analysis (2008). According to Ganahl and Ganahl Search Firm (Slavin 1992), employers want work-ready employees at all levels of a business, and thus new graduates will be rated according to their skill-set upon university completion. There is plenty of evidence to show that industry would prefer that academia be providing more research experience to graduates.

PROJECT DESCRIPTION

A marketing communication campaign to address domestic violence was designed by students over the course of two semesters at a state university. The work conducted included baseline surveys, focus groups, analysis, message design, pre-testing, execution, and dissemination. By doing research in the process of developing an ad campaign, students were able to see the value of the research while they developed their skills and gained a higher degree of confidence.

Quantitative Research

A baseline survey was planned in order to obtain a pre-campaign marker of audience attitudes and beliefs towards domestic violence. This survey was originally assigned to an undergraduate Marketing Research class in the College of Business, working in conjunction with the students using strategy development in the Integrated Marketing Communications Class. Qualitative research – to design campaign messages -- was assigned to the undergraduate students of Media for Social Change class in the College of Arts and Sciences.

The quantitative effort took place in the Fall of 2005 and the qualitative effort took place in the Spring of 2006. Of the scientific method steps, students completely directed the problem definition, situation analysis, instrument design, focus group data collection, strategic input, and presentation. Professors were responsible for survey data collection and analysis.

Problem Definition

The overall project goals were to reduce violence through education and to put victims in touch with support services available through local hotlines and assault victim services.

The campaign's messages were designed to: 1) increase awareness of domestic violence as a serious problem; 2) increase perceived susceptibility to domestic violence among one's close friends and relatives; 3) counter myths that abuse must be physical to count as abuse; and 4) increase perceived cons of perpetrating abuse by showing negative consequences.

Students clearly defined their research needs based on these objectives. From a review of secondary literature on domestic violence, students defined the need for a current baseline awareness and behavior levels in order to measure changes that might occur as a result of the campaign.

The second problem definition focused on message. There were many possible approaches based on secondary research and the students needed to choose the most important messages for the communications campaign, knowing it would be limited in scope and budget.

Situation Analysis

Many sources of information were available to the students for the situation analysis. National and Montana State statistics revealed frightening statistics of the severity of the issue. Internet skills, computer skills, and library skills were utilized for several weeks in earnest as the subject buttressed student's involvement and desire to participate.

At this point in the process, the Marketing Research class came off track for several reasons. First, the subject matter distressed the professor of the research class. Second, the time and budget requirements for the data collection in one semester would have suggested a mall intercept approach, not a mail sampling. Thus, the research professor backed out of the project. There was concern for danger to the students if they attempted to collect this information in person.

Fortunately, many of the same students were in both classes. Thus, any progress that had been made with the instrument design and collection

proposal was quickly transferred to the two other professors and students involved. There was never a suggestion to stop the research. The students learned to think on their feet.

Quantitative Data Collection

Using grant money secured by the professors, the students ultimately administered a mail survey to gather responses from a stratified sample of 2,500 adults in two local counties. The quantitative instrument designed by the students is Figure 1. below, showing student outcomes of skills developed in one of the critical steps of the Scientific Method. The instrument was developed as a team, with much discussion and debate, and also interdisciplinary across both colleges. Concepts from social marketing and business marketing were utilized which would later give the campaign a "brand" oriented approach to a difficult cause.

FIGURE 1 (PART 1/2)
QUANTITATIVE RESEARCH INSTRUMENT

Domestic Violence Survey

This survey is completely anonymous and your personal answers will not be connected to any identifying information at any time. Your answers will only be used for statistical data in regards to Carbon and Yellowstone County residents' attitudes towards domestic abuse. **Do you agree that you are over age 18 and that you have read and understand the information about this survey provided in the cover letter: Yes __ No __**

Gender: Male ☐ Female ☐

Age _____ County: Yellowstone ☐ Carbon ☐

Family Status: Married___ Single___ Divorced___ Other___

Do you have children: Yes___ No___

If Yes: Number of Children under age 10_____ over age 10_____

Has anyone you know ever been domestically abused? Yes ___ No ___

If yes, did you/they use the Domestic and Sexual Violence Services?

Yes ___ No ___

Are you aware of services available for domestically abused victims? Yes___ No___

Are you aware of services offered for victims of domestic violence by the Domestic and Sexual Violence Services of Carbon County?
Yes ___ No ___

Are you aware of services offered for victims of domestic violence by the Billings YWCA? Yes__ No___

On a scale of 1 to 5, one being strongly disagree and five strongly agree, please answer the following statements.

	Strongly Agree 1	2	Neutral 3	4	Strongly Disagree 5
Domestic abuse is a serious issue that our community should focus on preventing:	☐	☐	☐	☐	☐
Domestic violence should be settled within the family rather than involving the police or government officials:	☐	☐	☐	☐	☐
Domestic abuse is a serious crime and the abuser should go to jail:	☐	☐	☐	☐	☐

Figure 1 (part 2/2)
Quantitative Research Instrument

Physical, sexual, emotional, spiritual, and economic abuse are all forms of domestic abuse:	☐	☐	☐	☐	☐
There are no real victims of domestic abuse as we all have choices and can leave at any time:	☐	☐	☐	☐	☐
Some people provoke abuse and deserve it:	☐	☐	☐	☐	☐
Domestic violence counseling and support services are good ways to help victims of domestic violence:	☐	☐	☐	☐	☐

Would you call it domestic violence for an intimate partner to:

	Always	Sometimes	Never
A. Deny household money to their partner	☐	☐	☐
B. Yell at partner	☐	☐	☐
C. Threaten the children	☐	☐	☐
D. Threaten to harm pets	☐	☐	☐
E. Smash household objects near partner/family members.	☐	☐	☐
F. Insult or demean partner in front of the children	☐	☐	☐
G. Insult or demean partner in front of others at home	☐	☐	☐
H. Insult or demean partner in front of others in public	☐	☐	☐
I. Isolate partner from others	☐	☐	☐

Please answer the following questions based on your personal preferences:

What type of media do you listen/watch the most?

___ Radio ___ Television ___ Newspapers ___ Internet

From your #1 ranking, what channel/station/site/magazine do you listen/watch/read the most? _____ (Example: Radio: Hot 101.9, TV: NBC, MTV, ESPN)

If you ranked radio or television as your #1 source of media, what time of day to you listen/watch?

1. Survey questions consisted of following types:
2. Demographic information on respondent
3. Familiarity with domestic violence issues
4. Attitudes towards domestic violence
5. Familiarity with area domestic violence resources.
6. Media preferences

The overall response rate for usable responses to the baseline survey was 17%, well above the anticipated response rates. Upon arrival, each survey response was given a tracking number and entered into a database designed to capture the possible responses listed on the survey instrument. This tracking number allowed researchers to review a specific survey to reconcile data input

errors. Comments listed on each survey were also captured.

Quantitative Data Analysis

A total of 430 usable survey responses were available for analysis from the pre-campaign survey. The data was coded and analyzed using the computer package Statistical Package for the Social Sciences (SPSS 10.0). The main steps in the analysis were as follows:

1. Descriptive statistics for the sample were derived, and a cross-tabulation of the attitudinal items by sex was performed.
2. Independent T-tests to compare means of women and men.

Qualitative Data Collection

In-depth interviews and focus groups were conducted with members of the target audience (reproductive age women living and adult men in both counties) to identify attitudes and beliefs about domestic violence in order to craft relevant messages. Five focus groups (n = 30) were conducted with men and women from the community at various business and campus locations. Expert interviews with domestic violence prevention workers and survivors also informed the campaign. Figure 2 (see page 43) is a report of one of the focus groups. This is another example of the skills developed or student outcomes in the critical step of data collection in the Scientific Method.

Specific attention was paid to misperceptions about abuse, perceived barriers to helping victims or helping oneself, perceived trust in existing support services, and attitudes towards police or government involvement in prevention.

Qualitative Data Analysis

Qualitative data results were analyzed using Witte's (1992) Extended Parallel Process Model (EPPM), which indicates that audiences must perceive a threat to be both severe and personally relevant in order to change, and that they must also have self-efficacy (personal confidence) and faith in a recommended solution.

The model states that an audience must perceive a threat to be both significant (severe) and personal in order to be open to behavior change. The common myths about domestic violence identified by the baseline survey (that victims typically deserve it, or that they can leave any time) were considered to be the perceived barriers to change that needed to be addressed. Hence, communications students identified campaign objectives that fit with the objectives identified by the quantitative data: 1) To increase perceived risk of domestic violence affecting oneself or one's family; and 2) To decrease the belief that victims can easily leave a violent situation at any time, and that victims typically deserve to be hit. It was a challenge to merge the communication students' goals with the marketing students' objectives, but through multiple conversations involving the two spring semester classes (marketing and communications students), the students agreed that the effort to change myths and increased perceived risk would fit neatly with the "think" objectives identified in the fall.

Communications students were responsible for conducting additional focus groups to pre-test campaign messages, once drafted. Message concepts were first pre-tested and refined by peers before being formally tested with members of the target audience. Four pre-test focus groups (n = 24) were conducted (two with men, two with women) to assess the effectiveness and reaction of the messages among audience members. The messages were revised according to the input received. Pre-test comments resulted in changing beer to milk in one ad, in order to disassociate the problem from alcohol, which reviewers said was mistakenly considered to be a cause of abuse. The ad was also edited to give the perpetrator more emotion – fear or regret, to highlight the consequences of his actions. Family spots tested well; the best one told the story of a family barbecue that evolved into the man hitting his wife in front of their children for "burning" the food. It was combined with an ending that showed the man eating in jail to illustrate that domestic violence is a crime, punishable by jail. Another spot illustrated the notion that abuse is handed down across generations -- by showing a little boy punching his teddy bear after observing his father hitting his mother.

Strategic Input

Students were able to use the results of the analysis for strategic input for the campaign. This part of the process enabled students to see the benefits of research. The first input involved using the focus group information to refine and prioritize the messages for the campaign. Those messages include 1) women provoke abuse and deserve it, 2) abuse is not a crime, 3) women can leave when ever they want, 4) abuse is passed on to the next generation, and 5) domestic violence kills

Other input into strategy included refining targets and setting objectives. The first objective was to make 20% of our target aware of our message and 10% take action. (reproductive-aged women in either county).

Presentation

Research was essential to the presentation to the client, primarily in justifying the use of creative messages and execution. It was this phase that brought the most enthusiasm to the students as it reinforced a lesson on how to use the research. Creative discussions became dynamic and intense with the client and between students and professors. Secondary and primary research results were used to refine the creative messages of the campaign that ultimately were considered successful and award winning. Without the research, the basis for discussion would have been based strictly on personal opinion. Figure 3 displays one TV script and one newspaper ad that were developed as a result of the strategic input of the students.

The effectiveness of the student's use of the research can be seen in the results of the campaign. A follow-up survey was conducted in June 2008 to a stratified random sample of 2,500 adults, with a 15% response (n = 374). A total of 21% (n = 78) of respondents said "yes" in response to the question, "Do you recall having seen any TV or print advertisements from the 'Open Your Eyes' campaign to prevent domestic violence?" Six percent took action. Twenty-one percent of respondents, irrespective of gender, reported that they had seen ads from the "Open Your Eyes" campaign. This degree of audience reach is particularly impressive given the non-profit nature of the project, and the fact that most of the media was obtained through donations, pro-bono rates or public service announcements.

CONCLUSIONS AND IMPLICATIONS

Overall, this project delivered many unique experiences and provided pedagogy that is now being repeated at MSU-Billings with growth in enrollment in an interdisciplinary social marketing curriculum. Figure 4 s a summary of student outcomes for the project.

In the Lei study at University of Las Vegas, experiential learning in research significantly enhanced student's research interest, usefulness overall self-efficacy and reduced their anxiety and task difficulty (2008). This was found to be especially true for research activities that prove to be useful in students' future professional lives. But Lei's work is based on graduate level work.

Our project included undergraduate students, and achieved similar results . The students that performed this project utilized enhanced skills at each phase of the Scientific Method in order to finish the project. In this, the value of teamwork came to light as class discussion and skill diversity helped to develop instrument questions, and data collections concerns. Once the results were available, the value of research was clear to the students as they applied their new knowledge in the overall strategy of the communications campaign. It was important to the creative development and presentation to the client to be able to discuss with facts, based on research, not just their opinions.

Most students cited this project on their resumes as they entered the market place for employment. Most students also got better grades in most of their market classes across the board. Student outcomes were shown by qualitative data from the communication students and quantitative data in marketing. Ninety percent of the marketing students who participated in this campaign achieved an "A" in the marketing senior's capstone course compared to 45% of the marketing students overall. Based on assessment tools, students in the applied courses learned theoretical

Figure 3
Creative Results

Video	S/F	Audio
Shot comes into kitchen. Man on phone; drinking a jug of milk Man talks to his buddy Starts to get frustrated with person on phone. Fists clench. Shot pans to woman on floor. She is lying there, lifeless. Close up of face of woman…eyes wide open…obvious brain injury Tag: Domestic and Sexual Violence Services 425-2222 OPEN YOUR EYES	Phone Ringing	Hello? Hey man, what's going on? You won't believe what she just did. She just pushes my buttons. What do you mean, "is she okay?" She should just do what I say. Vo: Domestic Violence is the leading cause of brain injuries in women. I don't know man. She's not moving. (sirens)

concepts and models better than others, lending further support for the premise that students learn better through hands-on work than through lectures and reading alone.

As far as teaching students social value, one student wrote "I have learned so much from this campaign, I have learned not only about domestic violence but also about human behavior. In creating any campaign, I have learned that it is important to put yourself in the shoes of the audi-

ence. In addressing an issue such as domestic violence, or any other social issue, it is important to realize that the public may not have ever thought about the issue that you as a social marketer may be very passionate about. It is also important to realize that not all marketers are interested in social issues and may not be as passionate about the issue as you are as a social marketer, but there is a lot to be learned about reaching the public from them."

Our objective was to teach both social media and marketing research. The subject matter used here was a controversial social issue. The outcomes here show that the effort was challenging and did help to bring research interest to the overall campaign. The limit to this approach is that a there may be less challenging approaches to teaching research that are more effective or less distracting from imparting real research skills. This was a big project for an experiential approach. There are probably other smaller versions that could be as effective.

Figure 4
Student Outcomes as a Result of Unique Project Attributes

Student Outcomes	Cause Related	Controversial	Applied Project	Interdisciplinary
Research Skills	Intensified the difficulty of bringing consistency of objectives together for the cause message and a corporate sponsor. Not an easy task.	Anonymous sources required regrouping, sensitivity to human subjects. Possible danger made it more passionate for students.	Able to see the value of research in advertising and creative strategy. Actually did all phases of Scientific Method from beginning to end.	Forced students to understand and triangulate methods and enhanced concepts of both colleges
Reduced Anxiety	Forced students to want to make a difference, found passion and concern among students. Found a need in corporate for causes and Brands, and thus the desire made them interested.		Pressure of timeline in real world left little room for anxiety, and forced team to get along and fix issues.	Forced to work together because of client demands, and importance of issue. Business vs cause must work together.
Empowerment	Students saw their potential to impact important issues.		Gained confidence to tell employers they can do research, have experience.	Understand where different skills can come together or diversity has value.

Figure 2 (Part 1/4)
Focus Group Survey

Womens Focus Group

Participants

K=Kathy (Survivor of domestic violence herself)

B=Beverly

Facilitator: Miranda

Recorder: Icoco

Note taker: Jen

1. What does the term domestic violence mean?

    - K: Control issue, power, physical, mental and emotional abuse, victim doesn't need to be bleeding. Prefer the term "Family violence" over domestic violence.

    - B: Involves everyone in the household "moneyboy"- one who controls family member by cutting off the finances.

    Who is Involved?

    - B: men women, elderly

    How often do you think domestic violence occurs in the United States? Billings

    - K: 1 in 3

    - B: We tend to live our lives assuming and thinking that everything is okay.

    - K: Tells a story of when she called a hotline in Spearfish SD and she asked what she could do to make things better and the lady on the other end told her that she had to decide right now to leave or to live life possibly paralyzed or otherwise permanently injured because nothing she did caused the abuse and nothing is going to stop it.

    What made you decide to call the hotline?

    - K: Only hotline in town and it was highly advertised-Spearfish is about the same size as Blgs.—"By the time you get hit , your confidence has been worn down by emotional abuse so that you actually believe that it is your fault and that you have done something wrong, Isolation is a huge factor".

    - B: Isolation equals control

Figure 2 (Part 2/4)
Focus Group Survey

Do you think there is anything that a neighbor or bystander can do to help if he or she sees or hears a domestic violence situation?

- K: "A group of friends knew what was going on and they had gone to the police and told them that if I were to call them to help me because I would be telling the truth about being beaten. Bystanders could possibly cause more problems for the victim if the victim is not yet ready to leave. Always have the number to the local hot-line available for victims.

Among what group of people do you think Domestic violence most likely occurs?

- K: Crosses all lines, high class have more to lose "she has all she wants she can pay the price with a beating"

- B: No group is immune, I have heard of husbands threatening to cut off insurance benefits or inheritance money.

Name three key things that you think would prevent domestic violence in the United States-Billings

- B: eliminate poverty, access to counseling

- K: Banks and Insurance Co.s should require both names to be on all accounts. Awareness of 1 in 3.

- K: Everyone should be included in target audience.

- B: Awareness of symptoms

Once you are aware of abuse what should you do to help the victim?

- K: Provide with resources-get clergy in the town involved in addressing the issue in prenuptial counseling. Especially target fundamentalists who believe that the woman should be subservient to the man. Incorporate scripture that can easily be misinterpreted and provide other scripture that can help to reinterpret them properly.

- B: It is a learned behavior

What made you leave?

- The lady on the hotlines response when I asked what can I do to make it better? Decide now!

How do you think we can reach children that sre being taught these kinds of behaviors in the home?

- B: Church

Figure 2 (Part 3/4)
Focus Group Survey

- K: both genders-good touch/bad touch, empower them with knowledge that they can run real fast and scream real loud". 1st they need to know that it is not their fault and then that it is not acceptable.

What suggestions would you provide for someone who is currently experiencing a domestic violence situation?

- K: Protect your head and visceral area so that you don't get killed and get out!
- B: People are reluctant to talk about it which is a protection for the abuser.
- K: Had contemplated killing her abuser but hadn't figured out a sure fire way to do it without getting killed first. He was a big man and had already emotionally weakened her.

What are some characteristics of a victim?

- K: Flinches easily just because it is a natural reflex.
- B: It is hard for them to come to terms with the fact that they are in a bad situation and often wonder what they have done to cause it.
- K: Victims will inexplicably cancel appointments (isolation) and rarely have any pocket change with them.
- B: Often miss school functions for kids.
- K: Have to have receipts for everything to report where they are spending money at.
- B: Some often have a curfew.
- K: When asked about the relationship, initially complains but then says but he's wonderful.

What are common characteristics of abusers?

- K: Touchy feely with the victim in order to show ownership in public, Constant eye on the victim. While dating everything was wonderful, so do not settle. Domestic abuse has had no changes in the last twenty years.
- B: "I had two canned speeches when I taught on the college levels and they consisted of the points, never hitch hike home and always be able to support yourself.

What can you say as a survivor to help me to understand why victims stay?

- K: "When you put someone at the center of your life and they whittle you down, the self-esteem that was there at one time is gone and they make sure to wait until that

Figure 2 (Part 4/4)
Focus Group Survey

point to start hitting, once your self-esteem is gone you really believe that you have no where to turn.

- B: It is hard for people to admit when they have made a mistake.
- K: "After I left I was feeling extremely guilty about breaking my wedding vows and I will never forget what my counselor at the time said, she said "By his behavior, your husband has left you nothing to break"".

If you could send one message to a woman in a domestic violence situation what would that message be?

- K: Decide Now

What types of messages would help a woman to leave an abusive situation?

- K: "Its not you fault, a bad marriage can help you to prepare for the next on e in that it provides you with a template to use when choosing your battles as well as the little tests that you next husband must pass before he can marry you". "When leaving be sure to have you ID on you, carry ash (whatever you may have been able to squirrel away, and dress in layers.
- B: "If violence happens once it will only happØen once because I will leave".
- K: "That is what I said at one point in my life".

When asked about the perceived severity and awareness of domestic violence Kathy replied that everyone minds there business because they believe that it is a private issue.

FOCUS GROUP RESULTS : MEN (Uninvolved/ Bystander)

Perceived threat	Risk	Efficacy	Barriers	Benefits	Suggested Action
Low to Med. "It's not like that's (DV) what we think about when we think of problems in this area" "Everyone minds their own business. Do not talk about it."	Low to High Depending on: *Involvement of intervention *Alcohol or substance abuse *Relation to abuser—family, friend or bystander	Low "Nobody listens" "I'm not gonna be able to change the guy, in fact, I'll probably make it worse, for HER."	Privacy issues Personal harm Legal aspects Retribution to victim or self	Saving lives Improving safety of community Positive role model for kids and men Acknowledging to self and others that **violence is not acceptable**	➢ Talk about it ➢ Make people aware of it ➢ Recognize social consequences (it's not just private anymore)

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Online Learning Readiness of Undergraduate College Students: A Comparison between Male and Female Learners

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ABSTRACT

The purpose of this study was to establish a deeper understanding of the educational needs and tendencies of online learners. This study was particularly focused on whether the readiness of adult learners has changed over time, whether they have access to broadband Internet speeds at home, and the general level of readiness for online learning among the targeted population. The participants in this study were selected from college students at one medium-sized, southeastern university. An online questionnaire was distributed to students enrolled in either of the freshman- or sophomore-level information system courses within the college of business. Participation was entirely voluntary to participate and complete the online survey questions. Participants were asked to complete a questionnaire that was based on the McVay Online Readiness Questionnaire (McVay, 2000). The results were then compared to like results from a case study conducted in 2007 targeting only a single rural county, within the service region, as its population. The intent is to compare findings from this study with that of the 2007 case study. This paper focuses on perceived differences between male and female undergraduate students using data collected in 2007 and again in 2009. Conclusions include a summary of the findings as well as recommendations for higher education institutions to take advantage of these findings.

Background

Atkinson (2008) posited that several recurring themes were critical to understanding adults' tendencies to use or not to use online learning options. This case study describes prevailing attitudes for an individual rural community in south central Kentucky, related to use the general e-readiness for online learning strategies dependent upon broadband Internet. Three research questions were the focus of this earlier research:

1. How will Internet-based, online course delivery methods be received by adult learners in this rural setting?
2. How does broadband Internet impact adult informal learning in rural areas?
3. What role do local government officials play, and what level of responsibility and liability should they accept as related to technology resources that impact the viability of community-based learning?

Seven themes were identified after an analysis of interview transcripts and questionnaire data. The seven themes are:

1. Importance of high-speed Internet availability,
2. Attraction of professionals to the area,
3. The "missing generation",
4. Common solutions & working together,
5. Lack of vision for online learning,
6. Changing cultures and demographics, and
7. State & local government's role and regulatory policy.

For the purposes of this paper, we concentrated on theme six, changing cultures and demographics. One benefit of the 2008 work is that data collected regarding gender and age seemed to indicate possible differences between male and female learners. Additional data collected in 2009 assisted in an examination of undergraduate college students using a modified McVay questionnaire (McVay, 2000) to better understanding variations in preferences between male and female learners as related to online learning. This questionnaire is used to compare against an earlier study (Atkinson, 2008) in an attempt to determine whether significant changes in perceptions among learners are occurring over time.

Literature Review

While considerable research is available on online readiness, differences between learner types, and gender differences, it remains ambiguous as to how to effectively measure the online readiness for adult learners. Smith (2005) reinforced earlier studies that online learning requires a level of self-directness by students. Smith (2001) utilized the Canfield Learning Styles Inventory to establish two general dimensions; self-directedness and students comfort level with the learning task presented to them. The significance of adult's ability to effectively manage their time and apply self-discipline to accomplish tasks in an online environment is also a concern (O'Lawrence, 2006). One premise of this work is that the feeling of isolation is a major obstacle for many learners. It was also concluded that students who struggle with their reading and writing skills in traditional courses will do so in online courses that depend heavily on chapter reading assignments and discussion boards; and that some courses are better suited for online environments than others. Irizarry (2002) posited that any form of distance education requires students to self-manage their learning but also that they tend to be intrinsically motivated. According to Campbell (1999) adults are psychologically more mature and therefore better prepared to assume the responsibility of self-directed learning.

Halawi et al (2009) used an exploratory study to evaluate e-learning using Bloom's Taxonomy, a proven model that describes an individual's level of cognitive domain. In Halawi's study, two categories used included individual factors such as gender, age, educational level, familiarity, time dedicated to study, and learning style and instructional factors that include effectiveness of tools used, interaction with the professor, and ease of use of technology. The conclusion was that these factors, including gender, indicated no significant effect on e-learning. Further, Anakwe (2008) concluded that there no significant differences in learner performance between online and paper testing when using gender as a variable.

Tanner et al (2009) surveyed faculty and students to determine perceptions of online learning. They found that students believed that online classes required more self-discipline at a "significantly higher level of agreement than did faculty responses" (p. 34). Students also expressed that online classes required them to "teach themselves" (p. 36). McVay (2000) and the E-readiness for Online Learning questionnaire was initially used in an exploratory study using Australian and US undergraduates and identified a factor describing self-management of learning (Smith, 2005). This is particularly important because it is similar to the Canfield Learning Styles Inventory results of Smith's (2001) study that developed the self-directed/dependent factor.

Current Research Questions:

1. How has Internet based learning perceptions changed among adult learners over a two-year period?
2. What is the current readiness level of adult learners for online instruction?

Methodology

The survey was delivered online using classes already formed as basic literacy and principles of information systems at a mid-sized, public southeastern university. This institution is state-funded and primarily serves a designated multiple county area although students do attend from outside of the service region. As convenience samples, it is recognized that the results of this research and the generalization of any conclusions are limited. The McVay e-readiness learning questionnaire (McVay, 2000) is recognized as

a reliable instrument for developing basic readiness among potential online learners and the comparison made between the 2007 and 2009 studies at a minimum helps to establish a starting point for additional research.

The questionnaire did not ask for any names or other personal information that might be used to identify the subject. Basic demographic data was collected including zip code, gender, income range, age range, the level of attained education, ethnicity and race. The McVay e-readiness survey was customized slightly and used to address the participant's readiness for online learning experiences. There are fourteen items on the instrument and participants record their responses on a 4 point Likert scale. This survey has been used in several studies (Smith, 2005; Smith, Murphy and Mahoney, 2003; Atkinson, 2008) and its reliability and validity is established by a study performed specifically on the instrument (Smith, Murphy and Mahoney, 2003). This study concluded that the McVay e-readiness survey is reliable with a Cronbach alpha of 0.83, although it did suggest work be performed on specific questions to "yield a better contribution to the reliability of the instrument" (Smith, Murphy et al, 2003, p. 63). The Smith (2005) study resulted in a Cronbach alpha of 0.79 which again is sufficient to assume reliability, with the understanding that reliability coefficients are difficult to state appropriately because they are dependent upon the group being tested (Gay and Airasian, 2003).

Results

The results presented in Figure 1 are a comparison of responses between male and female within two studies conducted in 2007 and 2009. A comparison between male and female responses between the two studies was also conducted. The comparison was done on the fourteen questions in the McVay Online Readiness questionnaire

Responses to each question in the McVay Online Readiness questionnaire could take the form of rarely, sometimes, most of the time, and all of the time. For analysis purposes these responses were converted to numeric values of one, two, three, and four respectively. Average response scores for male and female respondents were computed. T-tests were performed within each study and between each study for average male and female responses.

The range of responses for females in the 2007 study was 2.42- 2.85, which translates to somewhere between "sometimes" and "most of the time." The range of responses for males in the same study was 2.32-2.78, which also corresponds to the response between "sometimes" and "most of the time." The only significant difference between the two sexes in the 2007 study was on question 14 with a p-value < .05. Question 14 is "in my studies of set goals and have a high degree initiative." The average score for females was 2.82 and the average score for males was 2.55.

In the 2009 study the range of responses for females was 2.54-3.87, which translates to somewhere between "sometimes" and "all of the time." The range of responses for males in the same study was between 2.32-3.78, which also corresponds to the responses between "sometimes" and "all of the time." In this study the only significant difference between the sexes on the responses to the questions was on questions three and six at the p-value < .05.

Question three was "I am comfortable communicating electronically." The average response for females was 3.37 and the average response for males with 3.58 with a significance level of .021.

Question six was "I feel that online learning is of at least equal quality to traditional classroom learning" the average response by females was 2.54 and the average response by males was 2.32 with a significance level of .04.

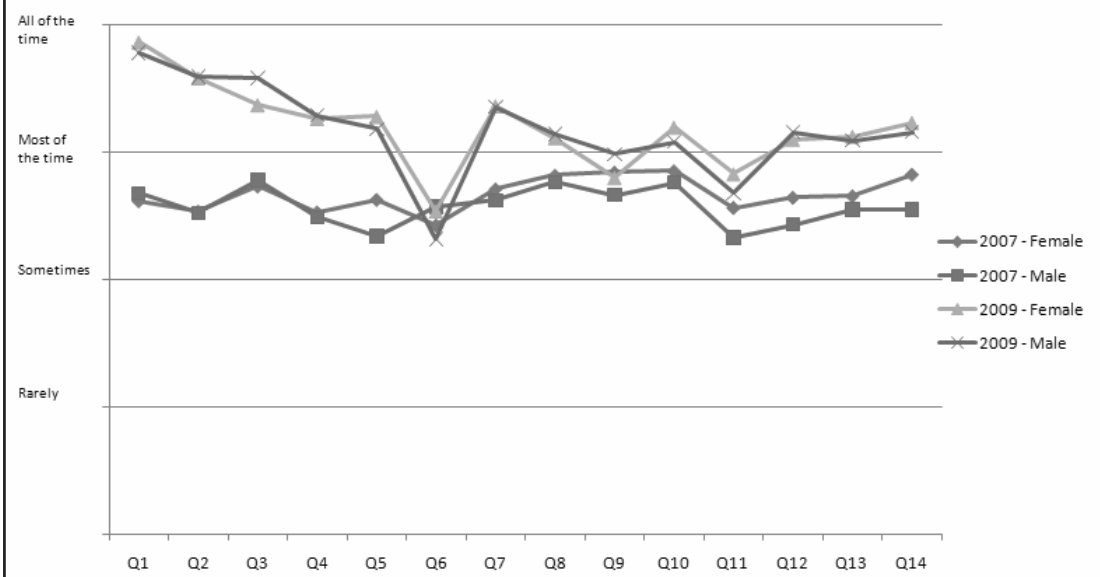
Additional t-tests were conducted between the sexes from each study. In the comparison between the females in the 2007 study and the females in the 2009 study all of the average responses for females for each question were significantly higher in the 2009 study than the 2007 study except for question 9. Question nine is "When it comes to learning and studying, I am a self directed person." The average female response in the 2007 study for question nine was 2.84 and the average female response in the 2009 study was 2.80.

In the comparison of the male responses between the two studies all of the average response scores for the 2009 survey were significantly greater than the average response scores for the 2007 study except for question six. The average response for males in the 2009 study was 2.32 and for males in the 2007 study were 2.57. This was significantly different at the .049 level. This represents a decrease in the average score for the question "I feel that online learning is of at least equal quality to traditional classroom learning."

Conclusion

In the 2007 study there was no significant difference between the response between males and females. However on question five the significance level was at .051 indicating that females were more willing to dedicate the necessary time per week for their studies. The average response of for both sexes on all the questions ranged from 2.32- 2.85. This translates into a response between "sometimes" and "most the time" for

Figure 1
Average Male & Female Responses from the 2007 & 2009 Studies



	2007 Female	2007 Male	2009 Female	2009 Male
Question 1	2.619	2.676	3.871	3.784
Question 2	2.537	2.521	3.588	3.597
Question 3	2.735	2.753	3.378	3.587
Question 4	2.531	2.569	3.271	3.293
Question 5	2.630	2.394	3.286	3.187
Question 6	2.427	2.569	2.541	2.320
Question 7	2.713	2.583	3.369	3.360
Question 8	2.821	2.753	3.118	3.147
Question 9	2.845	2.685	2.805	2.987
Question 10	2.855	2.732	3.200	3.083
Question 11	2.566	2.338	2.833	2.680
Question12	2.646	2.423	3.106	3.160
Question 13	2.659	2.577	3.129	3.093
Question 14	2.829	2.549	3.238	3.160

each of these questions. There is not a definitive explanation to this phenomenon; however, there is research to indicate that perhaps women may be more likely to see greater value in individual assignments that require less group-based activity. This is likely related to duties at home and the ability for flexibility often complicated when group projects are assigned (Marks, 2005).

In the 2009 study there was no significant difference in the average response between males and females except for questions three and six. On question three males have a significantly higher average response rate and females. This question deals with how comfortable the respondent feels communicating electronically. The average response for males was 3.58 and the average response for females was 3.37. Both of these scores are significantly higher than the reported scores in the 2007 study however in the 2009 survey, males had a significantly higher response. One possible reason for this is that female respondents have a higher need for social interaction and may not feel as comfortable communicating electronically as their male counterparts.

As for question six in the 2009 study, the average response of females (2.54) was significantly greater than males (2.32) in terms of how they perceive the quality of online education as compared to the traditional classroom. The average response for this question from the 2007 study to the 2009 study has not significantly changed for female respondents. However there was a significant drop in the average response rates from the males in the 2007 study (2.57) to the 2009 study (2.32). Thus the perception that online learning is of at least equal quality to traditional classroom learning is decreasing for male respondents. The authors do not have a definitive explanation for this finding; however, Keri (2002) postulated that males prefer applied learning styles as opposed to female's preference of more abstract approaches. If this is the case, then online courses may lack the needed connection to real-life scenarios that males require, where females deal more positively with the reading assignments, videos and other professor-centered knowledge deployment techniques.

When comparing female response rates between the two studies, the average response for each question has increased significantly for each question except for questions six and nine. Question six, as was mentioned previously deals with the perceived quality of online learning as compared to traditional classroom learning. Question nine is "when it comes to learning and studying I am a self-directed person." Thus average female responses indicate that they continue to feel that online learning is at the least equal quality to traditional classroom learning in the range of sometimes – most of the time (2.42-2.54) and their response for being a self directed learner (2.80-2.84) has not changed significantly over time either.

When comparing the male response rates between the two studies, the average response for each question was significantly different however the direction was reversed for questions six. Males in the 2009 study have a significantly lower average response for believing that online learning is at least equal quality to traditional classroom learning. There were no other significant findings when performing the t-tests between the two studies on the mail respondents.

In conclusion, the initial range of responses in the 2007 study was from 'sometimes" – "most the time" and in the 2009 study the range was from "most of the time "- " all of the time." Overall the comparison between the two studies indicated a significant increase in the readiness of the respondents for online learning.

Recommendations

All levels of education should consider providing or expanding an online component to their delivery of education, especially higher education. However, the caveat is that other skills may need to be taught at an earlier age like time management and self-directedness (Smith, 2005). Given the current economic environment university budgets are already being reduced, online offerings provide one method to curb expenses for both the institution and the student. This would facilitate better classroom utilization, decrease driving time and expenses for students and perhaps faculty.

Future studies should address the drop in the males average response rate that indicate a trend in their perception that online learning is of lesser quality than traditional delivery methods. Further analysis is also needed to see if there was a difference in response based on whether respondent lived in an urban or rural setting and if differences between sexes exist when categorized within setting.

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FIGURE 2 (PART 1/2)
MODIFIED MCVAY ONLINE READINESS QUESTIONNAIRE

Rate your agreement with each statement by circling the number that best matches your feelings.

1 = Rarely, 2 = Sometimes, 3 = Most of the time, 4 = All of the time.

If you don't believe that you can categorize your response as a "3" or "4", you may wish to reconsider your decision to pursue an electronic course. Please discuss your responses to these questions with the contact person for the program in which you are interested.

The Readiness for Online Courses survey is taken with permission from *How to be a successful distance learning student: Learning on the Internet* written by Marguerita McVay.

	1 Rarely	2 Sometimes	3 Most of the time	4 All of the time
Do you use the Internet?	1	2	3	4
I am able to easily access the Internet as needed for my studies.	1	2	3	4
I am comfortable communicating electronically.	1	2	3	4
I am willing to actively communicate with my classmates and instructors electronically.	1	2	3	4
I am willing to dedicate the necessary time per week for my studies.	1	2	3	4
I feel that online learning is of at least equal quality to traditional classroom learning.	1	2	3	4
I feel that my background and experience will be beneficial to my studies.	1	2	3	4
I am comfortable with written communication.	1	2	3	4
When it comes to learning and studying, I am a self-directed person.	1	2	3	4
I believe looking back on what I've learned in a course will help me to remember it better.	1	2	3	4
In my studies, I am self-disciplined and find it easy to set aside reading and homework time.	1	2	3	4
I am able to manage my study time effectively and easily complete assignments on time.	1	2	3	4
As a student, I enjoy working independently.	1	2	3	4
In my studies, I set goals and have a high degree of initiative.	1	2	3	4

FIGURE 2 (PART 2/2)
MODIFIED MCVAY ONLINE READINESS QUESTIONNAIRE

Additional Questions:

If you do not use the Internet, please indicate the reason or reasons why?

_____

If you use the Internet, for what purpose(s) do you primarily utilize it?

___ Email ____ surf the Web _____ buy/sell _____ entertainment _____ Other (please specify)

_____

Please discuss your experiences with using the Internet, both positive and negative. _____

_____

Would access to broadband (high-speed) Internet affect your use of the Internet?

Do you live within a city's incorporated boundaries or in the county? City ____ County ____

Zip Code: _____

Age range:	Under 18	___	Income Range:	
	18 – 24	___	Under	$ 10,000 annually
	25 – 34	___		$ 10,000 to 24,999
	35 – 44	___		$ 25,000 to 49,999
	45 – 54	___		$ 50,000 to 74,999
	55 – 64	___		$ 75,000 to 99,999
	65 or over	___		Over $100,000 annually
Sex: M __ F ___			Race: White	____
			Black	____
			American Indian	____
			Asian	____
			Other	____

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Prior to this year, the Academic Business World International Conference included a significant track in Learning and Administration. Because of increased interest in that Track, we have promoted Learning and Administration to a Conference in its own right. For the full call for papers and more information go to http://ABWIC.org and http://ICLAHE.org

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We encourage the submission of manuscripts, presentation outlines, and abstracts in either of the following areas:

Learning

We encourage the submission of manuscripts pertaining to pedagogical topics. We believe that much of the learning process is not discipline specific and that we can all benefit from looking at research and practices outside our own discipline. The ideal submission would take a general focus on learning rather than a discipline-specific perspective. For example, instead of focusing on "Motivating Students in Group Projects in Marketing Management", you might broaden the perspective to "Motivating Students in Group Projects in Upper Division Courses" or simply "Motivating Students in Group Projects" The objective here is to share your work with the larger audience.

Academic Administration

We encourage the submission of manuscripts pertaining to the administration of academic units in colleges and universities. We believe that many of the challenges facing academic departments are not discipline specific and that learning how different departments address these challenges will be beneficial. The ideal paper would provide information that many administrators would find useful, regardless of their own disciplines

Conferences

Prior to this year, Learning and Administration was a primary track of the annual Academic Business World International Conference. Because of increased interest, we have promoted Learning and Administration from a Track to Conference in its own right. For the full call for papers and more information go to http://ICLAHE.org and http://ABWIC.org.