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The purpose of this journal is to assemble researched and documented ideas that help drive successful learning and motivate business students to learn. The intention is to draw ideas from across both methods and disciplines and to create a refereed body of knowledge on innovation in business education. As a result, the primary audience includes business education faculty, curriculum directors, and practitioners who are dedicated to providing effective and exciting education.

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This particular issue includes a number of interesting classroom innovations in diverse areas.

Peter J. Billington
Editor

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Presenting Basic Concepts of Statistics with a Simple Card Trick

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ABSTRACT

A simple card trick is used to introduce the concepts of a binomial distribution, independent events, joint probability, constructing a null hypothesis, calculating a p-value, and rejecting a null hypothesis at a given level of significance. Details are provided such that any instructor can perform this card trick with very little preparation.

Keywords: statistics class exercise, card trick, basic statistical concepts

INTRODUCTION

It is very difficult in an introductory business statistics course to maintain the interest of students because the material often appears to be dry and difficult to understand from a student's perspective. Student evaluations of instructors in this course are also often lower than average. Thus, it is important to find ways to bring the material to life and spark interest in the course. One way to highlight a few of the basic principles of the course in an interesting and innovative way is to use a simple card trick as a live demonstration in the classroom.

Using a magic trick to create a memorable experience is sometimes used in the corporate world at trade shows and conferences to deliver key messages from management or to introduce new products with flair, as in Burns (2006) and Wheatley (1994). Burns (2006) particularly points out the effectiveness of using magic because it creates a memorable event from which to remember a key point, it is a good ice breaker, and it is interactive. However, to be effective, the focus must remain on the message and not just the entertainment value of the trick itself. Jung (1988) shows that executives at key meetings can also be trained to use a simple magic trick to introduce new products and motivate the sales staff. In a similar way, magic tricks can also be useful in the classroom to emphasize key concepts, especially for those tricks that work nearly automatically, have a clear learning objective, and do not require a great deal of practice to master from the instructor's point of view. The literature on using magic tricks effectively in the classroom is not extensive. Charles Windley (1976) wrote the book, Teaching and Learning with Magic, which is targeted for use in the classroom for elementary school students and their teachers. This book contains magic tricks that require no sleight of hand, and are designed to highlight basic principles in science or math. Windley also stressed that learning should be fun for both the students and the teacher. For junior high and high school students, Curon and McOwan (2008) describe their experiences of using a magic show to illustrate the principles and concepts about computer science, reporting especially good results with gifted and talented students. Simonson and Holm (2002) and Kierstead and Kierstead (1988) have effectively used a card trick in a university setting to demonstrate involved mathematical principles in an upper division mathematics course. In these two cases, the focus of the learning objective was in understanding how and why the trick worked rather than simply experiencing the presentation itself and relating the effect to the desired concepts and principles. This is therefore somewhat different from the use of magic tricks in a corporate setting at trade shows and conferences.

This paper shows how to use a simple card trick, sometimes called the "22 Card Trick", to introduce some of the basic concepts that will be studied during the semester in an introductory business statistics course. The basic effect of the card trick is presented first to show how the trick will be viewed by the students. Then a full presentation is given as a guide for an instructor to present the card trick in the classroom. The learning objective of this presentation is to introduce the basic concepts of a binomial distribution, independent events, joint probabilities of consecutive independent events, constructing a null hypothesis, specifying a level of significance, calculating a p-value, and rejecting a null hypothesis in favor of an alternate hypothesis. Once you get the idea of how the trick should work, you can modify the presentation to match your own teaching style and personality.

THE EFFECT

The instructor asks a student to randomly pick a card from a deck of 52 cards, and then replace the card in the deck. Then the instructor deals the cards into two piles of 26 cards each – one for the students and one for himself. The card chosen by the students has a 50% chance of being in either pile. The instructor picks up his pile and deals the

cards once again into two piles of 13 cards each. With two consecutive independent events and a 50% probability of success for each event, there is a joint probability of 25% that the selected card would be in the instructor's pile of 13 cards. The instructor once again picks up his pile and deals the cards – seven to the students and six to the instructor. The probability that the selected card remains in the instructor's pile is now ½ x ½ x 6/13 = 6/52 = 11.5%. The instructor once again picks up his pile and deals the cards, three to the students and three to the instructor. The probability that the selected card remains in the instructor's pile is now ½ x ½ x 6/13 x 3/6 = 18/312 = 5.77%. Finally, the instructor picks up his pile and deals the three cards one last time. The student pile has two cards, and the instructor pile has only one card. The probability that this last card is the original card selected by the students is now ½ x ½ x 6/13 x 3/6 x 1/3 = 1.923%. The instructor constructs a null hypothesis that this card was selected by chance alone. When the last card is revealed to the students, it miraculously is the card originally selected by the students. Thus, the null hypothesis is rejected at the 5% level of significance with a p-value of .0192.

THE PRESENTATION

This card trick is actually very easy to present, and it works automatically. The key to maintaining student interest is in the performance itself. Therefore, a complete dialogue is provided as a guide for instructors. The secret of the trick is very simple. All the instructor needs to do is to count 21 cards before the student replaces the selected card in the deck. After that, everything works automatically. And it is very easy to make sure that the student's card is the 22nd card if you follow the procedure below.

You need an ordinary deck of 52 cards for this trick, but a deck with large numbers works best, so that the rest of the class can see the card. You also need a table or flat area on a desk where students can see you dealing the cards as part of this trick. Begin by explaining that the course will provide an organized way to deal with probability and uncertainty, and that the history of statistics began with calculating the odds in gambling – particularly with a deck of cards. Immediately approach a target student and say, "Pick a card, any card." While holding the deck in your left hand, begin counting to yourself as you fan the cards from your left to right hand. Time it so that you have about 13 or 14 cards in your right hand about the time you arrive at the target student. Allow the student to choose any card as you continue counting to yourself and fanning the cards from your left to your right hand. When the student selects a card, remember to yourself how many cards are in your right hand. Tell the student to look at the card and show it to everyone else in the class. At the same time turn with your back to the students so that you will not see the card, and walk a few steps away from the target student. While the student is showing the selected card to the rest of the class, secretly continue transferring cards from your left to right hand until you have exactly 21 cards in your right hand. If the count goes over 21, just reverse the transfer of cards back from your right to your left hand until you have exactly 21 cards in your right hand.

After the class has seen the selected card, turn around to face the target student again, and remind the student to remember the card he chose. Then have the student place the selected card back into the deck on top of the cards in your left hand, and place the cards in your right hand on top of the selected card. From this point forward, the trick works automatically.

Move to a table or flat area where you can deal the cards while the students are watching. Deal the cards sequentially into two piles – one for the students and one for the instructor. Point out to the students that their card can be in either of the two piles. "With a 52 card deck, there are 26 cards in each pile. Thus, there is a 50% chance of the selected card being in either pile. When there are only two choices for an event, we say that this result comes from a binomial distribution. In this case, there is a 50% chance that your card is in my pile." Walk to the board and write "Deal 1: Probability = ½ = 0.5".

Walk back to the table, brush the student pile aside, and begin dealing the instructor's pile in the same manner as before into a student pile and an instructor pile. "Again this result is from a binomial distribution. There are now 13 cards in your pile and 13 in mine. The first time I dealt the cards, there was a 50% chance that your card was in my pile. On this second deal, there is again a 50% chance that your card remains in my pile. These two deals are called independent events because one does not influence the other in any way. The probability of two consecutive independent events happening in a given way is simply the multiplication of the probability of each of the two events happening separately. So the probability of your card remaining in my pile is ½ times ½, which is ¼, or 25%." Write "Deal 2: Probability = ½ x ½ = 0.25" on the board.

Walk back to the table, brush the second student pile aside, and deal from the remaining instructor pile into a new student pile and instructor pile. "Dealing 13 cards, there are now 7 cards in your pile and 6 cards in my pile. With 6 cards in my pile, if your card had been in my pile, the probability of your card remaining in my pile is 6/13 on this deal. Because this is the third consecutive independent event, the joint probability that the selected card remains in my pile is ½ x ½ x 6/13, or 11.5%." Write "Deal 3: Probability = ½ x ½ x 6/13 = 0.115" on the board.

Walk back to the table, brush the third student pile aside, and deal from the remaining instructor pile into a new student pile and an instructor pile, each containing 3 cards. "Dealing 6 cards, there are now 3 cards in your pile and 3 cards in my pile. If your card had been in my pile, there is now a 3/6 chance, or 50% of it remaining in my pile. This is the fourth consecutive independent event. So the joint probability of your card remaining in my pile over all four events is ½ x ½ x 6/13 x ½, or 5.77%." Write "Deal 4: Probability = ½ x ½ x 6/13 x ½ = 0.0577" on the board.

Walk back to the table, brush the fourth student pile aside, and deal the remaining 3 cards in the instructor's pile. "Dealing 3 cards, there are now 2 cards in your pile and only one card in my pile. If the selected card had been in my pile, there is now a 1/3 chance of it remaining in my pile. This is the fifth consecutive independent event. So the joint probability of the selected card being this last card over all five independent events is ½ x ½ x 6/13 x ½ x 1/3, or 1.92%." Write "Deal 5: Probability = ½ x ½ x 6/13 x ½ x 1/3 = 0.0192" on the board. The board should now look something like Figure 1.

Figure 1: Joint Probabilities Shown on the Board

Deal 1: Probability = $\frac{1}{2} = 0.5$

Deal 2: Probability = $\frac{1}{2} \times \frac{1}{2} = 0.25$

Deal 3: Probability = $\frac{1}{2} \times \frac{1}{2} \times \frac{6}{13} = 0.115$

Deal 4: Probability = $\frac{1}{2} \times \frac{1}{2} \times \frac{6}{13} \times \frac{1}{2} = 0.0577$

Deal 5: Probability = $\frac{1}{2} \times \frac{1}{2} \times \frac{6}{13} \times \frac{1}{2} \times \frac{1}{3} = 0.0192$

Now you are ready to reveal the remaining card. Return to the table, pick up the card and look at it. Then ask, "Would the card you selected happen to be . . .", hesitate, and then hold the card up and slowly turn it around so that the class can see it. Once it is completely visible, complete your sentence by announcing the card (this emphasizes the revealed card for those students who may not be able to see the card that well).

At this point, the experiment is completed and we can do some statistical analysis of the results. For example, you can create a null hypothesis. To set this up, ask the class if they think that their selected card remained at the end strictly by chance. They will likely say this is a card trick. Then you can ask them what evidence they have that this is a trick? The idea is to get the students to express their belief in a more objective way rather than just expressing a general feeling. The truth is that it would be a remarkable coincidence if their selected card just happened to be the last card solely by chance. The instructor can explain that, "In statistics, we do not really try to directly prove that an unusual event has occurred. Instead we formulate an opposite statement that nothing unusual has occurred. And then we try to reject this notion by showing that what has actually occurred has only a remote probability of occurring by chance alone. This statement of the status quo that we are trying to reject is called a null hypothesis, or H_o." Go to the board and write, "H_o: The card the students selected was revealed by chance alone."

If the null hypothesis is not true, then an opposite or alternate hypothesis, which we call H_1, would more likely be true." On the board write, "H_1: The card the students selected was revealed by something other than chance – perhaps some sort of card trick or maybe the instructor is some sort of a guru."

If we then conduct an experiment to find a significant amount of evidence that the null hypothesis is not true, then we can reject the null hypothesis in favor of the alternate hypothesis. And you should determine in advance what

you mean by 'a significant amount of evidence.' Recall that you selected a card, and that card was apparently revealed through a process that had a very small probability of happening by chance alone. But is it 'significantly different' from what you would expect by chance? For example, you may decide in advance that you will consider it to be significantly different if it has less than a 5% probability of happening from chance alone. We would call that a level of significance of 5%. Therefore, if you observe something that has a probability of less than 5% of occurring by chance alone, then you would consider that as evidence to reject the null hypothesis in favor of the alternate hypothesis. In this case, we determined a probability value, or p-value, of only 1.92% of occurring by chance alone." At this point, the instructor can point to the calculations on the board and state, "Since this is less than 5%, it would be reasonable and objective to reject the null hypothesis at the 5% level of significance."

A summarizing statement about the purpose of statistics can form a natural conclusion for the card trick. "One general purpose of statistics is to develop a process from which to form a reasonable and objective inference after making observations of an event. With a deck of cards, we provided an outcome with a very remote probability of occurring by chance alone. We calculated the probability of several consecutive independent events from binomial distributions and determined a joint probability of 1.92% that this could occur strictly by chance – this is a p-value. We constructed a null hypothesis of what normally would be expected to occur and an alternate hypothesis. And finally, we rejected the null hypothesis at the 5% level of significance in favor of the alternate hypothesis, because the p-value was lower than the level of significance. Apparently, something other than chance was taking place."

As a closing suggestion, it is important that the instructor should not reveal to the students how the trick works. It is only natural that the students will want to know how the trick was accomplished, and that the instructor might want to take credit for being clever. However, remember that the primary focus here is on the learning objective of introducing some basic concepts in statistics. If the instructor tells the students how the trick works, the focus will be more on the trick itself rather than the basic concepts of statistics, which is what we want the students to remember. Furthermore, the students are very likely to pass this knowledge on to future classes and diminish the effectiveness of creating something interesting and memorable for future students. Worse than that, a future student may even interrupt the instructor's presentation at a critical point in the trick for a future class, which can create a difficult and perhaps embarrassing situation for the instructor. So if the students ask the instructor how the trick works, the best response is something like, "I just dealt the cards and somehow it turned out the way it did. But the important thing is that we learned a few concepts about statistics along the way." The instructor can then list the basic concepts that were introduced as part of the trick. The instructor can also say, "That's really one of the strengths of statistics – the ability to formulate a reasonable conclusion based on observations even though we may not be able to directly see exactly why or how an event actually occurs the way it does," and just move directly to the summarizing statement about statistics as a conclusion to the trick.

CONCLUSION

This paper provides details on how to present a few of the basic concepts of statistics in an innovative and unique way through the mechanism of a simple card trick. The presentation highlights the concepts of a binomial distribution, independent events, the joint probability of consecutive independent events, constructing a null hypothesis, choosing a level of significance, calculating a p-value, and the process of rejecting a null hypothesis in favor of the alternate hypothesis. The card trick used in this demonstration is very easy to present, and requires very little preparation or training. This presentation provides an interesting and memorable event to help introduce to students some of the basic concepts of statistics.

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Fostering Transformational Leadership in Business and Health Administration Education through Appreciative Inquiry Coaching

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ABSTRACT

Although the leadership skills of *visioning, empowering*, and *encouraging* are qualities essential to inspiring and developing the workforce, they are particularly rare and difficult to develop. This article presents business and healthcare educators with a methodology for developing these competencies through the practice of Appreciative Inquiry (Ai) and specifically the technique of Appreciative Coaching. This study tests a method of teaching Appreciative Coaching in the classroom for developing early transformational leadership skills and demonstrates that it can be done. Business Management and Healthcare administration students can benefit by 1) understanding the principles behind appreciative inquiry and how they affect leader performance and 2) participating in specific activities, exercises, and methods contributing to their ability to optimize these skills. Educators can benefit by using methods based upon adult-learning theories that will create greater visionary and empowering skills. While there has been research focused on problem solving leadership behaviors in the organizational setting, this study helps fill the gap in understanding of how to develop visionary and enabling leadership behaviors in the university setting. By providing experiential, appreciative techniques, faculty members are able to enable students to learn to be more visionary and empowering.

Keywords: Leadership, Business Education, Transformational Leadership, Appreciative Coaching, Training.

INTRODUCTION

The challenge for providing graduate education in both the business and healthcare administration fields is not solely the provision of theoretical knowledge, but also the development and facilitation of leadership characteristics that are transferable to the workplace (Boyatzis, Stubbs, & Taylor, 2002; Calhoun et al., 2009). As important as it is to understand leadership theory, adult learning must take place in high-level experiential ways for high-level leadership endeavors to occur (Knowles, Holton, & Swanson, 2005). There has been little research to show that management and healthcare administration students are learning and developing their visionary and empowering skills and abilities (Garman & Johnson, 2006: Friedman, L. H., & Frogner, B. K., 2010). Although we know that adult learners learn best if theory is augmented by experience, we are challenged in our attempts to develop this experience in the university setting (Knowles, Holton & Swanson, 2005; Kolb & Kolb, 2006). Furthermore, the ability to measure improvement in transformational leadership attributes and behaviors in students is more difficult than other more 'technical' competencies. (Boyatzis, Stubbs, & Taylor, 2002; Friedman & Frogner, 2010). The purpose of this study is to show that educators are able to teach students to be more visionary and empowering by using appreciative coaching.

Most businesses today are complex and difficult to manage – especially healthcare organizations (Drucker, 2002). These institutions face unprecedented challenges as reimbursement is cut, safety and quality metrics are increased, technological, medical/ pharmaceutical changes are introduced, and reform legislation is enacted. Furthermore, Friedman & Frogner (2010) show significant gaps between the skills that new graduates possess and those that they need to be successful in the workplace. They suggest graduates are not adequately prepared to succeed in the interpersonal aspects of management because it is not emphasized in class—at least not to the same degree as other content and theory. They suggest relationship management is much harder to teach, evaluate, and improve within the graduate school context. All of these are soft skills that must be practiced by doing.

In business and healthcare education settings, higher-level visionary characteristics have increasingly been identified in competency models, as educators look for concrete, evidence-based definitions of transformative leader qualities (Boyatzis, 2006; Intagliata, Ulrich, & Smallwood, 2000). Healthcare and educational certification bodies have mandated these competencies as being critical characteristics of healthcare leaders (Stefl, 2008; Joint Commission,

2008; CAHME, 2011; Garman & Johnson, 2006; NCHL, 2005, p. 4; Calhoun, 2008). For example, the National Center for Healthcare Leadership (2005) adds the competency of 'Developing Talent': "The drive to build the breadth and depth of the organization's human capability, including supporting top-performing people and taking a personal interest in coaching and mentoring high-potential leaders (p. 7)".

TRANSFORMATIONAL LEADERSHIP IN HEALTHCARE

Transformational leadership is the ability of the leader to develop healthy relationships, a primary element of which is support (Manion, 2011, p. 53). The abilities to be e*mpowering/enabling* and *encouraging/supportive* are critical elements of transformational leadership (Whitney & Trosten-Bloom, 2010). Research conducted by Kouzes and Posner (2007) determined that *enabling others* was one of five major leadership principles. This ability to enable others is important because employees who feel powerless are not willing or able to take high performance action in their jobs. Consequently, employee feelings of empowerment enhance their success and self-esteem within organizations (Shea & Howell, 1999).

Leaders highly influence the self-efficacy and performance of their workforces, not only through their own actions, but by designing their organizations and jobs for self-determination and personal accountability (Kouzes & Posner, 2007; Walumbwa, Avolio, & Zhu, 2008). In fact, self-esteem and confidence are often higher predictors of performance than job skills and training (Saks, 1995). Being visionary and empowering is critical to having a transformative influence on the workforce (Fredrickson, 1998; Avolio, et al., 2004; Kouzes & Posner, 2007). There has been promising evidence to show that accentuating the positive in organizations is an effective method for creating transformational change (Whitney & Trosten-Bloom, 2010). In order to carry out this strategy, new concepts of leadership and influence are required (Stavros & Meda, 2003; Haizlip & Plews-Ogan, 2010); those who fill the leadership role must have clarity of vision and purpose to be able to draw the same characteristics from others (Senge, 1990). An organization's vision of the future is tied very closely to how it sees itself in the present, with its self-image greatly influencing its culture and how it performs as a system (Cooperrider, Sorensen, Yaeger, & Whitney, 2001). Their internal dialogue conditions all human systems and there have been many documented examples in athletics, psychotherapy, and healing proving that imagery affects how we view the world (Cooperrider, 1990; Neck & Manz, 1992). Like athletes, employees are affected by the imagery presented, played out in their workplaces, and demonstrated in the language used. The differences in the language are measureable by observing the positive versus negative 'image statements' between healthy and unhealthy groups. Functional groups are characterized as having an almost 2:1 ratio of positive to negative image, while even groups considered mildly dysfunctional demonstrate a 1:1 ratio (Cooperrider, 1990).

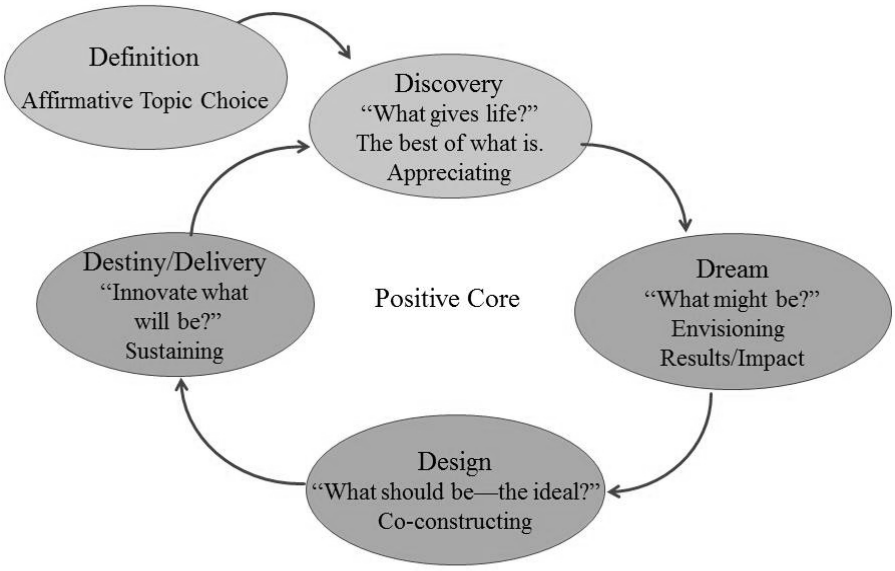
APPRECIATIVE INQUIRY

Appreciative Inquiry (Ai) is "the cooperative search for the best in people, their organizations, and world around them" (Stavros & Meda, 2003, p. 1). Both a philosophy and a systematic process for organizational development, Ai is being used in the fields of organizational change and leadership development. The common thread woven throughout Ai literature is that it helps people focus on what is going well in their lives, work, or relationships and then enables them to figure out ways of building upon those positive factors. In alignment with those themes, Ai is grounded in five core principles (Watkins, Mohr, & Kelly, 2011):

1. Social Constructionism: we create our world by our conversations with others
2. Simultaneity: change begins the moment we ask a question
3. Poetic: human organizations are open books and we can choose what we study
4. Anticipatory: images of the future guide the current behavior of any organism or organization
5. Positive: the more positive the questions used, the more long lasting and effective is the change (p. 71-75)

These five principles have inspired Ai proponents to move from theory to practice through emphasis on the positive as opposed to the traditional problem-solving process (Cooperrider, Whitney, & Stavros, 2003). There are five stages in the Ai model: Define, Discovery, Dream, Design, and Destiny (see Figure 1). It is the 'Dream' phase utilizes the visionary skills necessary to create creative, transformational change.

Figure 1- Ai 5-D Model



The language of Ai promotes vision though its consistent use of the "*positive question."* This is based upon the assumption that how leaders craft their questions "hold profound implications for changes in social practice - and that change begins at the moment a question is asked" (Fry, Barrett, Seiling, & Whitney, 2002, p. 5). In Ai, leaders ask the positive question.

APPLICATIONS OF AI

The application of Ai has migrated from the corporate setting into business and healthcare settings along a wide spectrum of Ai processes - from the broad, development of strategic plans, to the narrow, such as the decrease in errors in nurse hand-offs (Stavros & Meda, 2003; Woods, n.d.). For example, one medical center used Ai to improve patient satisfaction scores in a union housekeeping department; another large academic medical institution decreased the turnover in nurses in its Oncology Services department; while still another increased employee satisfaction scores in an already high-performing post-surgical patient unit (Lewis et al., 2006). AI has been used to overcome workforce (i.e., multidisciplinary healthcare providers) dissatisfaction in two cancer center sites of a university-affiliated health care center in Quebec; resulting in increased team work and innovative ideas from the groups (Richer, Ritchie, & Marchionni, 2009). Recently, MD Anderson Cancer Center, in response to employee surveys that showed a deficit in trust and collaboration scores, has begun using Ai in the training of its leaders and employees in order to improve the trust, teamwork, effectiveness, and performance of its workforce (J.Webb Day, personal communication, May 23, 2011).

A common criticism of Ai is the perception that it may ignore, deny, or fail to fully address the problems that an organization is experiencing. Doing so would be especially dangerous in a healthcare organization, since patient safety is at stake. Moreover, in any business, refusing to face upcoming market realities is a fundamental strategic flaw (Kaufman, 2011, p. 163). Ai asks what is going well, why that is, and how more if it can be done. It does not deny reality but focuses on what needs to occur to be successful, rather than concentrating on the negative. It thereby "intentionally shifts the focus of the inquiry and intervention to those realities that are sources of vitality" (Banaga, 1998, p. 263). Ai philosophy incorporates the dichotomous thinking that transformational leaders must possess – that ability to hold both the 'faith that they will prevail' - along with the understanding of the 'most brutal facts of current reality'.

APPRECIATIVE COACHING

Effective transformational leadership is often demonstrated through the individualized and personal process of coaching. Coaching is a critical competency for leaders in order to support the long-term growth of their employees (Dye & Garman, 2006). It is superior to sending staff to training events in the facilitation of the transfer of knowledge and skills into the workplace (Dye & Garman, 2006; McAlearney, 2008) and is productive and cost effective (Hutton, 2003; McGovern, Lindeman, & Bergara, 2001). One critical way that leaders can provide visible evidence of enabling and supporting their employees is by conducting continuous coaching conversations (Kouzes & Posner, 2007, p. 274). Leaders must integrate values into the workplace and through their influence, optimize employee self-confidence and performance (Scaduto, Lindsay & Chiaburu, 2008). In addition, by showing how the strengths of the person align to the results of the organization, people not only understand how they fit into the organization's vision and mission, but "create a powerful energy for excellence" (Whitney et al., 2010, p. 78).

Teaching the Ai coaching process to business and healthcare administration students is an important step to giving them the skills of transformational leadership. Students are able to "build a sense of their own potency and potential as creators of their own future" (Orem et al., 2007, p. 57) using it. Future transformational leaders must be positive in order to elicit 'virtuous cycles' (i.e., one good thing leads to another) and to create contagiously positive attitudes (Orem et al., 2007; Fredrickson, 2003). Equally important for the future leader is to learn how to elicit positive emotions and reflect on experiences of peak performance (Fredrickson, 1998, 2003; Seligman, 2002). The basic steps in Ai coaching include the collection of stories on the personal success of those being coached, identifying any patterns that arise, and then discussing how they can be strengthened and amplified in the person's life. The very purpose of Ai coaching is "to bring out the best of another person by discovering articulating and magnifying strengths [by] shining the light on the person being coached" (Whitney et al., 2010, pp. 73-74). We believe this can be taught to business and healthcare administration students.

This study shows the use of Ai coaching in health administration curriculum. The instructor's challenge is to provide an experiential way for students to practice these Ai coaching skills in the classroom setting. In order to incorporate transformational leadership skills in the graduate curriculum that are transferable to the workplace, the modality chosen for this study was *Appreciative Coaching* since the five practices of Ai are assimilated in its process (Orem, Binkert, & Clancy, 2007). While a transformational leader is one who mentors and coaches, the specific use of Appreciative Coaching exposes the student to appreciative inquiry principles, while it provides opportunities to not only practice critical coaching skills with fellow students, but work on their own goals and objectives as well. The hypothesis of the study is that the Ai pedagogy provided for appreciative coaching will increase the student's scores on the Leadership Practices Inventory (LPI). Higher scores on the LPI are believed to indicate a higher ability of the students to perform important aspects of transformational management and organizational effectiveness in the workplace.

METHODOLOGY

Ai coaching was introduced in the MHA curriculum of a CAHME-accredited state Midwestern university during a healthcare leadership course, which is usually taken when the students are 70-80% through the MHA program, and after taking other management theory courses (i.e., Organizational Theory, Organizational Behavior, and Human Resources). Therefore, prior to entering this course, the knowledge of leadership theories should be understood, but the affective and behavioral skills still need development. The dependent variable was the LPI - one of the most widely used leadership assessments available, having been given to over 350,000 individuals worldwide (Kouzes & Posner, 2007).

The Intervention

The concept of appreciative inquiry was introduced into the curriculum by using Orem, Binkert, and Clancy (2007) 'Appreciative Coaching: A Positive Process for Change', and viewing the video 'A Fusion of Strength: A Positive Revolution in Change Management' (Cooperrider, 2004). The students were assigned teams of four to five individuals. The experiential interventions were three-fold: 1) completing a team project with outside 'clients'; 2) filling out a project notebook that documented going through an exemplary leadership process (Kouzes & Posner, 2003c), 3) coaching classmates using Ai questions; and 4) completion of 'Coaching Forms' that were worded in Ai terminology. These assignments were explained at the beginning of the semester, and were to be completed throughout the term. The team projects were assignments garnered from healthcare providers, often alumni, who

needed small projects completed. Examples of the projects include: writing a business plan and recommendation for a charity health clinic; critiquing and developing a website for a nonprofit organization for the elderly; preparing a questionnaire and presentation on feedback for occupational and physical therapists in the city school district; and updating a for-profit clinic on the state-legislation that was applicable to its practice. All assignments can be obtained from the first author.

The process of *how* the students worked in their teams was as important as the outcome of the project itself and was documented throughout the semester in Leadership Challenge project workbooks (Kouzes & Posner, 2003a). These processes included such exercises as developing a graphic of a personal vision, writing a team vision for the project, coaching team mates, self-reflection, and giving 'kudos' to team members which, although required for credit for the assignments, are not judged on the quality of the self-reflection in order to ensure their answers are genuine and reflexive. Additionally, results of the reflection exercises are included as part of the students' professional portfolio that is presented to the faculty immediately before graduation.

Coaching was accomplished between students following the five-step Ai process, described earlier (Figure 1). The students' coaching sessions were usually done following class but could be done anywhere. The students completed four coaching forms to be submitted at regular intervals throughout the fifteen weeks (available from the first author) documenting the outcomes of the sessions. The Orem text explained clearly the assumptions behind each phase and the forms were very self-explanatory so that the skills could be easily learned.

It is the 'Dream' phase of the Ai process that encourages the visionary skill required of transformational leaders and so it this is the phase that is most emphasized in the Leadership class and in the coaching process. The sequence for facilitating the Dream state in coaching includes the following steps: 1) acknowledging aspirations and strengths; 2) anticipating the dream; and 3) declaring the dream. During the semester the students in the Leadership class learned about and followed these steps by watching the Cooperrider video, reading the Orem text, writing short essays about the applicability of the principles to their lives, developing a graphic description of their vision, and filling out Coaching forms (see Appendix) that included questions that required anticipating positive futures. In addition, students completed a self-analysis of the Leadership Practices Inventory (LPI) through the use of a workbook (Kouzes & Posner, 2003b) and listened to various lectures and examples of visionary leaders. As a team, they must also produce a vision for their project. Examples of the student responses given on the various assignments are listed in Table 1.

The Instrument

The Leadership Practices Inventory (LPI) is a widely used leadership assessment. It is a 30-item questionnaire containing five subscales for each of the 'Five Practices of Exemplary Leadership' (i.e., Model the Way, Inspire a Shared Vision, Challenge the Process, Enable Others to Act, Encourage the Heart) (Kouzes & Posner, 2007). Each subscale contains six questions, with a 10-point Likert response scale. The inventory is self-administered and takes approximately 10-15 minutes to complete. The LPI is internally reliable in that the statements pertaining to each of the five leadership practices are highly correlated with one another (Kouzes & Posner, 2002). Since the test-retest reliability is high, any changes in the scores from the pre to post LPI within the relatively short duration of the semester can be attributed to the interventions presented during the class. The LPI has high 'face validity' in that the results make sense to the students; as well as 'predictive validity' meaning that the results have been correlated with various factor analyses that are predictive of leadership effectiveness (Kouzes & Posner, 2002). Concurrent validity of the LPI is also excellent, since the leadership scores are consistent with important aspects of managerial and organizational effectiveness such as "workgroup performance, team cohesiveness, commitment, satisfaction, and credibility" (Kouzes & Posner, 2002, p.15).

The LPI was administered as a pre- and post-test to 74 graduate students in a CAHME accredited Healthcare Administration Program at the beginning and the end of a Leadership and Careers in Healthcare class. The study occurred across six semesters with 12 to 15 students per semester. The sample population is is 87% female. Although taking the LPI was a requirement of the course, the data and scores used in this analysis were anonymous and confidential. Scores are grouped into five leadership 'practices' determined by the LPI authors' Chronbach alpha (internal reliability) coefficients (Posner, 2010) to be: a) Model the Way, b) Inspire a Shared Vision, c) Challenge the Process, d) Enable Others to Act, and e) Encourage the Heart (Kouzes & Posner, 2007). The instrument was administered in the first and last weeks of a 16-week semester.

Table 1 - Examples of the student responses on the various assignments

Competency Exercise	Outcome Examples from Students
Vision: Project Team Vision	With the financial help and valuable tools that our group will provide based upon principles learned in the MHA Program, the Clinic will be knowledgeable of the worth of donations it receives and the cost of services it provides in order to make better business decisions… As a result, we will improve the overall health of the underprivileged community surrounding the Clinic.
Vision: Self reflection	I am trying to create a dream picture of success in my team. I want to align the team toward one common goal while making sure that each individual can envision his/her own dream. The result is that they have responded with energy and passion. This fosters creativity and innovation. All of us are looking forward to carrying out our team project because we see the opportunity to realize our desires. From this, I learned that is essential to establish a close relationship with my team members. We must share values and embrace the mission of the organization before we start. Everyone has his/her own language, and so communication skills and emotional intelligence are necessary to establish an effective relationship, keeping in mind the diverse background of every team member. Finally, from my coaching experience I learned that my team members are actually coaching me. By discovering them, I discover a little bit more of myself, every day different and richer. My gratification is in their happiness. There is no substitute for making others' lives happen.
Vision: Pictorial of Personal Vision	
Empower: Self-reflection	I learned that often my first instinct is negativity. I learned the significance of being positive and how positivity is contagious. I learned and agree with the text that when in positive mode, I am more productive and efficient. I will try to be positive first to improve both myself and others.
Encourage: Kudos to Team-mates	There are two facets to Emily – as individual contributor and as team leader. She plays both the roles effortlessly, and we have come to recognize her as the "closer" on our assignments. She played her role well in her assigned task as a contributor on the articles for the client's website. She is mindful of the goals that have been set out, and has the utmost passion in making sure that the product that is turned in is top-quality. Throughout the semester, Emily has displayed professionalism in presenting the team to the client. She not only ensures that all tasks are completed on time, but has offered suggestions to the other team members by editing and helping them develop a consistent product for our client.
Encourage: Coaching	I asked the team member to describe in detail a role model she most admired in order to develop her own perspective of how she would like to be viewed. She feels she has similar attributes and now appears to be more confident in her ability to be an effective leader.

FINDINGS

The interventions were appreciative coaching assignments described earlier that took place throughout the semester. The LPI was then taken pre and post–assignment. Although improvement in scores was significant for all five areas, the ones pertinent to this study were those that demonstrated vision, empowerment, and support of others.

The analysis included frequency tabulations for the identified experiences and their mean rankings of importance; this is shown in Table 2. A two-way, repeated measures Multivariate Analysis of Variance (MANOVA) (SPSS (v.15)) was conducted to assess time (pre/post) by measure (5 LPI subscales) differences. Results revealed a significant main effect of time, $F(1, 49) = 27.05$, $p < .001$, partial $\eta^2 = .356$. As shown in Table 2 and Figure 2, across the five LPI subscales, post scores ($M = 48.82$, $SD = 7.12$) were significantly greater than pre scores ($M = 45.02$, $SD = 7.42$), indicating that students overall leadership skills increased after the intervention. Results also showed a significant subscale effect, $F(4, 49) = 27.45$, $p < .001$, partial $\eta^2 = .356$. Across pre and post scores, the five LPI subscales significantly differed. Post hoc analysis revealed that enable ($M = 51.22$, $SD = 5.79$), encourage ($M = 48.59$, $SD = 7.53$), and model ($M = 47.28$, $SD = 6.42$) leadership skill challenge ($M = 44.67$, $SD = 7.95$) scores, and inspire ($M = 42.84$, $SD = 8.67$) scores were significantly lower than all other subscale scores.

Figure 2. Pre and Post scores for LPI subscales. $p < .05$.

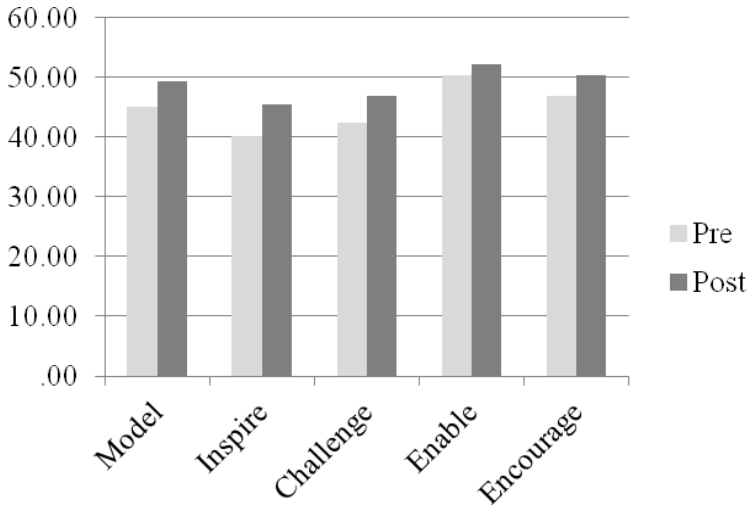


Table 2 - Means and Standard Deviations and Change of LPI Subscales

	Experimental Group				
	Pre		Post		
Subscale	Mean	SD	Mean	SD	Δ
Model	45.16	6.45	49.40	6.40	4.24
Challenge	42.48	7.95	46.86	7.95	4.38
Enable	50.30	5.39	52.14	6.18	1.84
Encourage	46.88	8.30	50.30	6.76	3.42

Note. Change scores with similar superscripts are statistically similar.

These main effects were qualified by a significant interaction between time and subscale, indicating that subscales differed in the amount of change from pre to post test, $F(4, 196) = 2.97$, $p < .05$, partial $\eta^2 = .205$. As shown in Table 1, students' scores on the enable subscale increased the least (mean $\Delta = 1.84$), followed by encourage scores

(mean Δ = 3.42). Model, inspire, and challenge subscale scores increased at statistically similar rates (mean Δ = 4.24 – 5.12, $p < .05$). Consequently, the hypothesis for the study was supported.

CONCLUSION

As business in general and healthcare industry in particular go through radical transformation, its leaders are required to demonstrate transformational skills in order to facilitate the workforce through those significant changes. This cannot be done through the traditional problem solving, 'carrot and stick' approach. Leaders who are willing to release the positive energy already within their organizations might accomplish it. When looking at what sets leaders apart, we find that demonstrations of anticipatory and positive principles lead to generating contagious positive emotions not only within themselves, but in the workforce. Appreciative leadership stresses that collaboration between people is more important than the work of the individual prowess, as well as that the power and value of the workforce is in relationships. Leaders can provide visible evidence of enabling and supporting their employees by conducting continuous Appreciative Coaching conversations showing how the strengths of the person are aligned to the results of the organization. People then understand how they fit into the organizations vision and mission, but "create a powerful energy for excellence" (Kouzes & Posner, 2007, p. 274).

This research has shown that the curriculum and pedagogy in healthcare leadership classes can be fashioned in ways that will influence students to be more visionary and positive while empowering others to do the same. This study shows that it is possible to increase positive leadership skills through the addition of techniques that both teach the theory and practice the methods of appreciative coaching. The Ai curriculum described in this study provides an evidence-based method for increasing the transformational leadership skills of 'enabling/empowering inspiring/visioning', and 'supporting/encouraging'. Results of this study demonstrate that the use of appreciative coaching concepts has a significant influence on the abilities of students to practice and improve these desired leadership qualities in the classroom setting. Due to the excellent concurrent validity of the LPI, the potential is high that when these students become managers, there will be a significant knowledge transfer into the workplace, thus improving the performance of their healthcare organizations.

Another advantage of the use of appreciative coaching is that learning the use of the appreciative techniques generates a common positive language in the classroom. It is expected that the students will also carry on these terms into the healthcare organizations they will serve in the future (but this is a future study). It is reasonable to assume that other leadership skills can be improved through the appreciative curriculum methods. Further study is warranted using similar evidence-based approaches. Just as vocabulary influences the workforce, it also influences the classroom. Instructors focus on the prevalent language, with its scarcity-rich phrases such as: gap analysis; turf wars; downtime; customer complaints; performance evaluation; bureaucratic silos; troubleshooting; low morale; burnout; groupthink, debug, etc. In contrast, Ai focuses on 'generative metaphors' that emphasize liberating aspirations, and revitalization by using words and phrases such as: innovation; shared values; peak experiences; turning point; proud achievements; best practices; leveraging strengths; empowerment; wisdom; moments of courage, capacity, hopes for the future, things to pass along, and legacies (Barrett & Cooperrider, 2001). It is, therefore, incumbent upon curriculum-builders to be cognizant of the terminology used and resist the use of deficit-based discourse when describing organizations (Yeager & Sorenson, 2001, p. 137).

Finally, it is important to outline the limits of this research and outline research needed in the future. This study was conducted in one course over six sessions at a Southwestern CAHME accredited healthcare administration program located in a large medical center with a predominately female population. Consequently, the generalization of this research can be questioned and should be replicated in other settings and with different demographics. As in most field research, there could have been a historical event that contributed to the difference in pre and post test scores; however, this research was done across six semesters. The authors polled the students involved and know of no such event(s). It is possible that there was a pre-test/intervention interaction; however, a Solomon 4-Square design was not conducted to rule out this threat to validity. The authors do not think the pre-test contributed significantly to the intervention because of the robustness of the intervention across an entire semester.

Reed (2007) suggests Ai methods are value-based rather than fitting the traditional research processes and that using and positively reflecting on the 'subjects' views are critical when implementing organizational change. In other words it is difficult to see how an appreciative strategy can be evaluated in a non-appreciative way. Although

traditional research methods may tend to simplify complex issues in order to fit the scientific model, this study does attempt to may help satisfy the objections of those who wish for less subjective measures.

Both the Ai coaching interventions and the assessment used in this study are relatively easy to use and would contribute to an educational program's need to satisfy accreditation assessment standards requiring higher-level pedagogy and assessment across the different levels of higher-level teaching. Therefore, use of Ai coaching in team-based projects seems warranted to help teach business and healthcare administration students to develop the leadership skills of *visioning, empowering*, and *encouraging* essential to inspiring and developing the future workforce of an ever-changing healthcare delivery industry.

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The Role of Supplemental Instruction in Success and Retention in Math Courses at a Hispanic-Serving Institution

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ABSTRACT

Student retention has been a challenge for higher education institutions, an urgent issue that must be reassessed and improved at these institutions. One of the biggest challenges is not only increasing retention at Hispanic-serving institutions (HSIs), but additionally supporting the Science, Technology, Engineering, and Math (STEM) courses at these institutions. Supplemental Instruction (SI) has been confirmed by multiple researchers to increase retention and academic success among students in higher education, particularly among minority students. The purpose of this study was to evaluate and discover the impact SI had on retention and academic success for Hispanic students in mathematics courses at a south Texas HSI. The results showed a significant difference in final course grades and course completion for Hispanic students between select groups. The significant main effect that impacted academic success and course completion among Hispanic students at an HSI was SI participation.

Keywords: student retention, supplemental instruction, Hispanic-serving institutions, STEM

INTRODUCTION

Student retention has been a challenge for higher education for many years (Astin, 1975) with attrition presenting itself as a costly problem (Congos & Shoeps, 1993). This is an urgent issue that must be reassessed and improved at postsecondary institutions. Although enrollment rates for Hispanic college students have been high, the achievement gap remains steep (Fry, 2002). It is imperative that Hispanic-serving institutions (HSIs), having a high percentage of Hispanic populations, find ways where they will support and retain this growing number of degree-seeking students.

Many HSIs around the country have identified the biggest challenges to be addressed in the 21st century as issues in student success and retention among their students (De los Santos & Cuamea, 2010). Low graduation rates among underserved students can be attributed to a very weak high school curriculum with lower-level math and reading courses (Twigg, 2005; Noeth & Wimberly, 2002). Schmidt (2003) reported that 17-year old Hispanic high school students have the same reading and mathematics skills as White 13-year olds in middle school. Hispanic high school students are less likely to take college preparation courses than their White peers, hence delaying them further in higher education. For those who do pursue a college education, many Hispanic students are confronted with one of the most common weaknesses that institutions possess, which is the "predominant form of collegiate instruction: the didactic lecture" (Twigg, 2005, p. 21). The lecture method assumes that all students enter into college at the same level of academic preparedness, same learning styles, and same ability to learn. Traditional lecture formats minimize the opportunity to learn collaboratively or encourage active participation (Twigg, 2005).

Also, one of the biggest challenges for HSIs is not only increasing retention, but also supporting the Science, Technology, Math, and Engineering (STEM) pipeline at these institutions (Laden, 1999, 2000, 2001; Gates, 2010). There is a need to broaden participation in STEM majors and careers by including underrepresented minorities and women, since there are a disproportionate number of both causing a leaky pipeline in colleges and universities in the United States (NSF, 2008; Blickenstaff, 2005; Seymour, 1995; Weinburgh, 1995).

Past research indicates the challenges undergraduate students face in introductory math and science courses are a result of highly competitive classrooms or a lack of active participation, deterring students from pursuing a STEM degree (Gainen, 1995; Seymour & Hewitt, 1997). Grades received in STEM introductory courses, or more commonly referred to as STEM gateway courses, are associated with a higher probability of majoring in STEM disciplines (Rask, 2010). The level of academic achievement demonstrated by students in STEM gateway courses is a good predictor of their continued progression and degree attainment in STEM disciplines (Seymour & Hewitt,

1997; Seymour, 2002). Moreover, Hammarth (2006) argues that the probability of a student achieving in STEM fields is dependent on their access and completion of rigorous gateway courses in math and science.

HSIs are familiar with the barriers facing minority students and tend to provide students with additional support, including academic support programs. Merisotis and McCarthy (2005) affirm offering high levels of academic support through faculty, peer mentoring, or tutoring programs will not only attract more Hispanic students to higher education, but also keep them until graduation.

PURPOSE OF THE STUDY

There are numerous studies that have addressed the need and importance for academic support programs in order to increase academic success, sense of belonging, academic and social integration, and retention rates among Hispanic students (Benitez & DeAro, 2004; Gastic & Nieto, 2010; Maestas, Vaquera, & Zehr, 2007). A study by Kane and Henderson (2006) evaluated several student support services through an academic learning center at a Hispanic-serving institution and found the biggest increase in success rates were from the students who chose to participate in SI versus other support programs. Holek (2008) specifically set out to discover the impact SI has on the retention and graduation of students of color and found a positive increase of retention from the four ethnic groups identified: African American, Hispanic, Asian, and Native American.

SI sessions are designed to support student interaction and help create connections that provide for collaborative learning among disadvantaged students as well as high achieving students, which cultivate diversity (Arendale, 1994). SI has not only proven to increase retention and graduation rates among students in higher education (Bowles, McCoy, & Bates, 2008, Bowles & Jones, 2004), but also to promote higher confidence levels among students, increased student engagement, and higher levels of critical thinking towards academic achievement (Barlow & Villarejo, 2004; Congos, 2002; Wilcox & Koehler, 1996; Wolfe, 1987).

The HSI in this study received a federal grant awarded to HSIs that proposed to address science, technology, engineering, and mathematics (STEM) education. One of the intents of the federal grant was to increase the number of Hispanic and low income students attaining degrees in the fields of science, technology, engineering, and math. Since research has shown that SI has been effective in increasing success in math (Kenney & Kallison, 1994; Shaya, Petty, & Petty, 1993), it was chosen as the academic support program to be implemented. The purpose of this study was to evaluate if Supplemental Instruction impacted final grades in math courses and course completion among Hispanic students at a public, four-year south Texas Hispanic-serving institution.

The following research questions guided the study:

1. Does the SI attendance level have an effect on the mean final course grades in College Algebra for Hispanic students?
2. What are the main effects and interaction of SI and gender on course completion in College Algebra for Hispanic students?

REVIEW OF THE LITERATURE

The Retention Framework

Despite years of research on retention in higher education, the college student retention and graduation rates continue to be low among minority students, particularly among Hispanic students (Oseguera, Locks, & Vega, 2009). The earliest leaders of retention theory rooted their theories on personal, individual characteristics found in psychology, focusing on the traditional population of college students (Spady, 1971). Subsequently, the retention focus shifted to more sociological models involving college student departure theory (Tinto, 1975), social integration model (Tinto, 1987), and the theory of involvement (Astin, 1977). Retention theories have evolved by centering on the institution and how it relates to student integration (Tinto, 1994).

Cerna, Perez, and Saenz (2009) examined precollege attributes and values that influenced Hispanic students to attain a bachelor's degree and found disparities between this group and their peer groups reflecting "racial/ethnic educational opportunity gaps" in the U.S. (p. 143). Previous research has shown a deficit approach to Hispanic student retention by focusing on inadequate high school preparation or financial constraint, whereas Cerna et al. (2009) focused on characteristics that are essential in the success of undergraduate completion. The study suggests

focusing on precollege aspirations, perceptions, and values by nurturing the social and cultural capital Hispanics use to complete their degrees.

Retention and the Campus Climate

A study examining non-persistent decisions of Hispanic undergraduates conducted by Gloria, Castellanos, Lopez, and Rosales (2005) found that university comfort, social support, and self-belief were significant predictors in these decisions to remain in college. Moreover, the strongest values that Hispanics perceive to help them persist are the social support of their peers, mentoring relationships with faculty, and their perception of the university environment. Implementing "community-based efforts that involve family and friends within the recruitment and retention processes" is one way to support Hispanics in their pursuit to educational attainment (Gloria, et al, 2005, p. 216). Additionally, formalizing mentorship programs between Hispanic students and faculty does affect the educational experience and students' sense of self-efficacy which leads to success and persistence (Gloria et al., 2005).

There are many factors that can affect Hispanic student academic performance and retention; some of them include: overreliance on standardized examinations causing high levels of stress and bias, stereotype threat, cultural and social isolation, low expectations from teachers and peers, and non-supportive educational environments (Oseguera et al., 2009). Retention is much more than grades. Retention is the institutional commitment to a student's intellectual, social, and educational engagement.

Community and Hispanic Student Retention

Hispanic students tend to feel a need for connection to small communities that create, support, and extend positive outcomes for their future (Hurtado & Carter, 1997). Hispanic students place importance in belonging to some kind of community to their engagement and persistence in college, whether it is a religiously-affiliated, social, or just a community to discuss course content with peers outside of class. Similarly, having connections with other Hispanic students in college can prevent students from experiencing intimidating or threatening experiences (Gloria, Castellanos, & Orozco, 2005). Hispanic students seek positive and safe environments where they can interact with others and develop academically and socially.

Academic Barriers

Underserved students commonly enter into college with lower achievement test scores and entrance examination scores (Green, 2006). Low entrance exam scores contribute to the reason why underserved students delay college attendance or continue their education at a two-year institution versus a four-year institution (Chen, 2005). According to Twigg (2005), graduation rates for African Americans, Hispanics, Native Americans, and low-income students do not measure up to the overall graduation rates of other students. Fischer (2007) suggested that in the academic realm, minority students (Blacks, Hispanics, and Asians) who were better prepared prior to college received better college grades.

Economic Barriers

The financial burden that Hispanic students face in higher education is a barrier that is prevalent, contributing to their high attrition rates. Hispanic students are entering college with the lowest average socio-economic statuses among minorities; as a result, this affects their access to information, quality of education, and educational performance (O'Connor, 2009). Kane, Beals, Valeau, and Johnson (2004) identified two main obstacles to student persistence and success in STEM programs as being financial and off-campus employment. Many students seek off-campus employment in order to meet their living and educational expenses. Hispanic students are more concerned about paying for their education and have a strong sense of responsibility to take care of family in contrast to non-Hispanics who work to network or advance in their future careers (Longerbeam, Sedlacek, & Alatorre, 2004). Also, when first-generation students engage with their peers and with the institution, it makes a significant difference on their academic achievement. Often times, first-generation students' financial burdens and family responsibilities hinder this type of student engagement in college (Pascarella, Pierson, Wolniak, & Terenzini, 2004).

The STEM Education Pipeline at HSIs

As the United States looks to reinforce its workforce to compete globally in the areas of Science, Technology, Engineering, and Math (STEM), its focus must be on the institutions that are recruiting and educating the fastest growing population in the US, which are HSIs (Gates, 2010). Undeniably, HSIs play a critical role in preparing our

students; Gates (2010) argues that they hold an instrumental role in closing the gap of STEM college graduates and must be recognized and supported in their efforts.

Whalen and Shelley (2010) sought out to compare the academic success and six-year graduation rates between STEM and Non-STEM majors; their conclusion found that underrepresented students, female and minority students, in STEM majors are more likely to not remain in college or graduate within six years compared to the Non-STEM majors. In an effort to retain and graduate underrepresented students in the STEM disciplines, institutions of higher learning should implement support systems that could include study groups with like-minded students or involvement with professional STEM organizations that could diffuse the perceptions of STEM courses being too difficult (Whalen & Shelley, 2010).

Academic Support Programs at HSIs

With the changing demographics of colleges and universities in the United States today, it is imperative to understand Hispanic students in order to meet their social and academic needs. When De Los Santos and De Los Santos (2003) asked CEOs and Presidents of HSIs around the country to share important challenges or problems facing their institution, many stated student academic preparation, retention, and graduation among the top five issues. Many of the leaders related the fact that these issues are more prevalent because of their institution being an HSI. When asked what the biggest challenges were to be addressed in the 21st century, many HSI presidents around the country identified the top issues as student preparedness, student success, and retention among their students (De los Santos & Cuamea, 2010).

In order for academic support programs to be fully integrated, HSIs must incorporate connections between faculty and Hispanic students. Faculty members are essential resources for HSIs. Many researchers show that faculty and the level of interaction they have with students is associated to their success and persistence in college (Hubbard, 2005; Hubbard & Stage, 2009; Pascarella & Terenzini, 1991). The classroom can be a place where professors and students can become co-creators of knowledge by examining their personal biographies thus helping to clarify the reasoning behind why they are pursuing an education (Nunez, Ramalho & Cuero, 2010).

Supplemental Instruction: An Exemplary Academic Support Program

SI is a nationally regarded academic support program largely due to its unique design. Created in 1973 by Deanna Martin at the University of Missouri-Kansas City, it began in response to attrition issues among minority students (Widmar, 1994). More than thirty years later, the SI model continues to impact minority student success as it provides regularly scheduled, peer-facilitated, voluntary study sessions for all students in difficult courses (Hurley, Jacobs, & Gilbert, 2006). It supports high-risk classes, that typically have an attrition rate of 30 percent or higher with high D or F grades (Martin, Lorton, Blanc, & Evans, 1977), instead of high risk students avoiding the stigma of remediation (Arendale, 1994).

There are many key features that continue to distinguish the SI program from other academic assistance programs which include the SI leader, the SI supervisor, the student, and faculty who all make positive differences in academic success and institutional retention rates (Hurley, Jacobs, & Gilbert, 2006). The SI leader is identified as one who has taken the course previously, mastered the course, and possesses sufficient interpersonal skills to facilitate a group study session. The critical elements of the leader position is to attend all class sessions, take notes, read class materials, and conduct SI study sessions several times a week to review content material with students. The student is an integral part of SI as they are placed in a more active role in processing information and they are given ownership over their own learning. The SI Supervisor acts as an external agent identifying high-risk courses, selecting and training SI leaders, evaluating SI sessions, and assessing the SI program. The faculty role is essential as they encourage students in their class to attend the SI study sessions and they assist in the success of students and the SI program (Zartisky & Toce, 2006). Each of these key people working in conjunction with one another is what creates an effective program in helping students succeed in select courses. As a result of the program structure and philosophy, SI was selected in 1981 as one of the few Exemplary Educational Programs in postsecondary education (Arendale, 2002).

SI is an academic support program that is offered at the beginning of the semester. The proactive versus reactive approach in learning content is fundamental to SI's success with students (Arendale, 1994). The heart of the SI program is to reach students before they face academic difficulties in high-risk courses. Many higher educational institutions implement early alert programs where they identify students in need of intervention; yet, many of these

interventions come when students have failed their first exam or are experiencing academic difficulties. SI, on the other hand, is deliberate in addressing student attrition before it becomes a concern to the student, faculty, or institution.

SI sessions are designed to support student interaction as they construct knowledge and collaborate with one another, which can be integrated with learning communities among students (Painter, Bailey, Gilbert, & Prior, 2006). These types of connections that form peer study groups provide for collaborative learning among disadvantaged students as well as high achieving students, which in turn cultivates diversity (Arendale, 1994). Barlow and Villarejo (2004) stated that by implementing the SI program institution-wide, graduation rates are not only increased, so is the level of confidence of SI participants. Additionally, the incorporation of SI has also been shown to create a welcoming climate for all students, particularly minority and women students who may feel somewhat isolated.

Mathematics Success

SI has shown to be effective in entryway mathematics courses by "enhancing undergraduate education and reducing attrition" (Kenney & Kallison, 1994, p. 81). In an evaluation of SI with two studies of Calculus for Business students and Calculus for Engineering and Natural Science students, Kenney & Kallison (1994) found in their comparison study that the SI group had significantly higher course grades than the non-SI student group and found that the "exposure to SI techniques appeared to help the lower-ability students disproportionately more than the higher-ability students" (p. 80). These results suggested that higher-ability students may find their own ways of learning the subject where the lower-ability students need to learn the study skills. The higher ability students find the unrelated content to not be useful or they utilize the time to become more efficient learners. SI sessions may not help improve grades for these students, but may help in less study time.

Recent research has found SI or a form of peer-assisted learning to have positive effects on performance in mathematics. Parkinson (2009) found that those students who were engaged in peer assisted learning (PAL) support in mathematics increased their performance with in-house tests in calculus, showed improvement in exam grades, and decreased failing rates in comparison to those who did not receive any support. Cheng & Walters (2009) conducted an observational study on the impact of peer-assisted learning (PAL) sessions on student success in two undergraduate math courses. The results suggested that the attendance to PAL sessions correlated with student success in mathematics.

After removing the selection bias of prior GPA and gender differences that has been questioned in SI, there still remains a significant increase in grades in mathematics for SI participants compared to non-SI participants. Fayowski and MacMillan (2008) discovered that despite student motivation, prior academic success (GPA), or gender, students attending SI for a calculus course earned higher grades due to a social and supportive context in which students are able to process, dialogue, and break down information to learn.

METHODOLOGY AND RESEARCH DESIGN

A quantitative approach was used for this study on the role of SI in academic success and retention since it is the most conducive for systematically analyzing SI data, comparing SI groups, and assessing the SI program to make inferences. The quantitative design for this investigation used archival data from the SI program for the time period beginning in the fall semester of 2009 through the spring semester of 2010. The rationale for the archived data during the 2009-2010 semesters being chosen is due to: 1) the financial funding by the Department of Education Title V grant to support the SI program, 2) the increased number of science and mathematics courses aligned with SI at that particular time, and 3) the extensive data collected during the time period.

The variables that were analyzed in this study include: 1) three groups of SI attendance, 2) final course grade, 3) course taken, and 4) gender. The independent variable that was defined as the "treatment variable" by Creswell (2009), were the number of SI sessions attended, which were divided into three groups. The non-SI group was defined as zero SI sessions attended, the low group was defined as 1-10 SI sessions attended, and the high group was defined as 11or more SI sessions attended in one semester. In addition, gender (male or female) was an independent variable. The dependent variables, "the outcomes or results variables" as Creswell (2009, p.146) refers to them, were course completion rates and final course grades for this study. According to Rask (2010) course grades in STEM

gateway courses have the most consistent and important influence on the decision to progress in a STEM related major.

Population and Sample

The population of the study consisted of all undergraduate students enrolled in College Algebra I courses during the 2009-2010 year at a Hispanic-serving institution in south Texas. SI targets courses that have been designated to be barrier courses and have a 30% or higher D or F grades or withdrawal rates among students (Blanc, Debuhr & Martin, 1983). At this particular Hispanic-serving institution, College Algebra I fell into the 30% criteria. The mathematics course that was analyzed in this study was the required College Algebra I general education course.

This study's sample was comprised of all undergraduate Hispanic students who were enrolled in College Algebra I courses during the 2009-2010 year. There were 42 possible SI sessions per semester for students to attend or approximately 84 sessions for the academic year. The sample analyzed Hispanics students' level of SI attendance, gender, course completion, and final course grade. The selection process in this study was based on students that were enrolled in the College Algebra I course and were identified with the institution as Hispanic students.

RESULTS

SI Effect on Final Grades

A One-Way ANOVA statistical test was used in order to answer research question 1: Does the SI attendance level have an effect on the mean final course grades in College Algebra I for Hispanic students. The SI attendance level variable was solely based on total number of SI sessions attended with the mean score for the College Algebra I course, MATH 1314. The mean and standard deviation for final grades based on SI attendance levels for the College Algebra I course is noted in Table 1.

Table 1: Mean and Standard Deviation for Final Grades

Course Number	Session Attendance Level	Mean	SD	N
MATH 1314	Non-SI	2.32	1.803	197
	Low	2.82	1.615	119
	High	3.21	1.626	56

The final grade mean for College Algebra I courses showed an increase in the means between SI attendance levels. As SI attendance increased so did the final grades among Hispanic students. The means for final grades increased from the non-SI level (M = 2.32, SD = 1.80), to the low SI level (M = 2.82, SD = 1.62), to the high SI level (M = 3.21, SD = 1.63). Comparing the non-SI level to low SI level in the mathematics course a mean difference of .50 was found and between the non-SI and high SI level a difference of .89 was found. The descriptive data demonstrated a slight increase in final grades between those who did not attend SI and those who did participate in SI.

A One-way ANOVA was conducted to evaluate the mean difference between the SI attendance levels and the final grades in math. The One-way ANOVA indicated there was a significant difference between the SI attendance levels and final grades F (2, 372) = 7.12, p = .001, partial η^2 = .037. The effect size for the SI session level analysis was considered small with a partial eta square of .037, meaning that 4% of the variance in the grades was due to SI.

Post hoc tests were conducted to analyze if a certain SI level (non-SI, low, or high) was more effective in increasing final grades in math among Hispanic students. The follow-up tests consisted of all pairwise comparisons among the three levels of SI attendance. The Tukey Honestly Significant Difference (HSD) procedure was used to control for Type I error across the pairwise comparisons. The results are found in Table 2.

Table 2: Comparisons of SI Session Levels Effect on Final Grades

	Session Attendance Level	Session Attendance Level	Mean Difference	Sig.
Tukey HSD	Non-SI	Low	-.50*	.036
		High	-.89*	.002
	Low	High	-.40	.325

*The mean difference is significant at the .05 level.

The results of this analysis indicated that there was a significant difference in final grade means between the non-SI level (M = 2.32, SD = 1.80) and the low SI level (M = 2.82, SD = 1.62), $p < .05$. There was also a significant difference in final grade means between non-SI (M = 2.32, SD = 1.80) and high SI attendance levels (M = 3.21, SD = 1.63), $p < .05$. However, there was not a significant difference in final grades between low SI level (M = 2.82, SD = 1.62) and high SI level (M = 3.21, SD = 1.63), $p < .05$.

Although there were no mean differences between those students in the low attendance and high attendance levels, SI participation did make a difference in course final grades for Hispanic students. The results of this comparison supported the research hypothesis. There were significant differences between non-SI and low and high attendance at SI sessions on final course grade in math for Hispanic students. There was no significant difference between low and high attendance at SI sessions on final course grade in math for Hispanic students.

SI Effect on Course Completion

A Two-way ANOVA was conducted to determine the effect of the independent variables, three levels of SI attendance (non-SI, low, high) and math course taken, on the dependent variable, final grades. The SI attendance level variable was solely based on total number of SI sessions attended with the mean score for the classes in each subject. The course variable was based on the total compilation of classes in College Algebra I.

A Two-way ANOVA statistical test was conducted. The means and standard deviations for course completion in mathematics as a function of the two factors, SI attendance and gender, are presented in Table 3.

Table 3: Means and Standard Deviations for Math Course Completion

Gender	SI Attendance Level	Mean	SD
Male	Non-SI	.57	.50
	Low	.65	.48
	High	.86	.36
Female	Non-SI	.62	.49
	Low	.84	.37
	High	.86	.36

The means showed a steady increase between non-SI to low SI and low SI to high SI attendance levels with both males and females. In College Algebra I courses, the means for course completion among male Hispanic students increased from the non-SI level (M = .57, SD = .50), to the low SI level (M = .65, SD = .48), to the high SI level (M = .86, SD = .36). The means for math completion among female Hispanic students also increased from the non-SI level (M = .62, SD = .49), to the low SI level (M = .84, SD = .37), and to the high SI level (M = .86, SD = .36). The descriptive data revealed a course completion increase between the non-SI to low SI attendance level and the non-SI to high SI attendance levels for mathematics for both males and females.

A Two-way ANOVA was performed to evaluate SI attendance levels and gender main effects and the interaction between SI attendance levels and gender on math course completion. Math course completion was defined as the

dependent variable and gender and SI session levels were defined as factors. The Two-way ANOVA indicated no significant interaction between SI attendance levels and gender $F(2, 366) = 1.26$, $p = .29$, partial $\eta^2 = .007$) and no significant main effect for gender $F(1, 366) = 2.26$, $p = .13$, partial $\eta^2 = .006$). There was a significant main effect for SI session level $F(2, 366) = 8.60$, $p < .05$, partial $\eta^2 = .045$ for math course completion. The effect size for the SI session level analysis was small $\eta^2 = .045$, meaning that 5% of the variance in course completion was due to SI. The results showed that there was no significant difference in course completion means between Hispanic males and females. Nonetheless, the results revealed there was a significant difference in the means of course completion between the SI attendance levels.

Post hoc tests were conducted to analyze the significant main effect of SI session levels to examine if a certain SI level (non-SI, low, or high) was more effective for course completion in College Algebra I. The follow-up tests consisted of all pairwise comparisons among the three types of SI session levels for math completion. To control for Type I error, Tukey's HSD correction procedure was used across the pairwise comparisons. These results are shown in Table 4.

Table 4: Multiple Comparisons of SI Participation Level on Math Course Completion

	Session Attendance Level	Session Attendance Level	Mean Difference	Sig.
Tukey HSD	Non-SI	Low	.14*	.027
		High	.26*	.000
	Low	High	.13	.206

* The mean difference is significant at the .05 level.

The results of the comparative analysis indicated that there was a significant difference in course completion means between the non-SI level ($M = .59$, $SD = .49$) and the low SI level ($M = .73$, $SD = .45$), $p < .05$. There was a significant difference in course completion means between non-SI ($M = .59$, $SD = .49$) and high SI attendance levels ($M = .86$, $SD = .35$), $p < .05$). There was no significant difference in course completion means between low SI level ($M = .73$, $SD = .45$) and high SI level ($M = .86$, $SD = .35$), $p = .206$. The results indicated there were differences in course completion between Hispanic students who participated and those who did not participate in SI sessions. Hispanic students who participated in SI have higher course completion means in College Algebra I, yet the numbers of sessions did not appear to make a difference in math course completion.

There were significant differences between non-SI and low SI levels and between non-SI and high SI level attendance at SI sessions on course completion in the area of mathematics for Hispanic students. Based on the results the null hypothesis was rejected. Conversely, there were no significant differences in gender on course completion in the area of mathematics for Hispanic students. Likewise, there were no significant interactions between gender and SI attendance on course completion in College Algebra I for Hispanic students.

DISCUSSION

In order to evaluate SI's impact on final grades in College Algebra among Hispanic students, a One-Way ANOVA was used. The statistical analysis tested the mean difference in final grades among SI attendance levels. The One-Way ANOVA results indicated there was a significant difference between the SI attendance levels and final grades. Follow-up tests were conducted and showed there was a significant difference in final grade means between the non-SI level and the low SI level and between non-SI and high SI attendance levels. There was no significant difference between low SI and high SI level. There was a significant difference in math final grades for Hispanic students who attended SI sessions versus Hispanic students who did not attend SI sessions. These results supported the literature that SI can increase final grades and success in mathematics when students attend peer-facilitated study sessions (Cheng & Walters, 2009; Fayowski and MacMillan, 2008; Kenney & Kallison, 1994; Parkinson, 2009).

To evaluate SI's impact on course completion in College Algebra I among Hispanic students, a Two-way ANOVA test was run. The analysis tested math course completion based on SI attendance levels and gender. The Two-way ANOVA indicated there was a significant difference between SI session levels on course completion. There was no significant difference between male and female course completion in mathematics and no significant interaction between SI attendance level and gender in math course completion. Follow up tests were conducted on the

significant main effect for SI session level to evaluate which attendance level was more effective on course completion. The results of the post hoc tests indicated a significant difference between the non-SI group and low SI level and a significant difference between the non-SI group and high SI level. There was no significant difference between low SI and high SI level.

There was a significant difference in math course completion for Hispanic students who attended SI sessions versus Hispanic students who did not attend SI sessions. The results supported past literature showing that SI can reduce attrition and enhance undergraduate education in gateway math courses (Kenney & Kallison, 1994), primarily among Hispanic students (Kane & Henderson, 2006). In addition, the study demonstrated there was no significance in gender, similarly, Fayowski and MacMillan (2008) found that despite gender, students attending SI for math courses had higher academic success than those who did not attend.

An interesting finding in the results indicated that there was no significant difference between the low SI level (1-10 sessions) and high SI level (11 or more sessions). The results indicated that as long as Hispanic students participated in SI, regardless of the number of times they attended or the students' gender, their retention rate in College Algebra increased. Nonetheless, the descriptive statistics should not be disregarded as it demonstrated a continued increase in mean course completion between each SI attendance level. The descriptive data pointed towards an increase between non-SI, low SI level, and high SI level. The descriptive data illustrated an increase in the course completion of Hispanic students for each SI level, pointing towards increased student success with more SI participant engagement.

Although this study's results indicated no significant difference between the low and high SI attendance groups, further research should be conducted to answer deeper questions about SI and its effect on the targeted population. Since there could be multiple factors in a student completing a course or receiving a certain final grade, integrating qualitative data into the study to determine what other factors assisted in students' success could give a holistic perspective. Examining different SI features that have positive effects on Hispanic student outcomes may offer an extensive perspective on how SI contributes the most. One feature to examine in particular is the initial impact a SI learning community offers to Hispanic students. Do Hispanic students feel a sense of belonging in a SI learning community? Does attendance level matter in increasing student confidence in the subject matter? Employing a naturalistic inquiry method may give a more in-depth understanding on why SI is effective among Hispanic students and how it contributes to their academic success, primarily their persistence in mathematics courses.

CONCLUSION

HSIs have a high percentage of Hispanic student populations, so it is important that they find ways where they can support and retain the growing number of degree-seeking students. Many HSIs around the country have identified the biggest challenges to be addressed today is student success and retention among their students (De los Santos & Cuamea, 2010). Identifying and evaluating academic support programs that increases student success and retention is vital for HSIs to assure that their students have a chance to succeed on their campuses. The reason for this study was to discover how an academic support program impacts the academic success and retention of Hispanic students at a Hispanic-serving institution.

Past literature on academic support programs and the needs of students at HSIs provided some insights into factors that have been found in the success and retention of Hispanic students. The research focused on one particular nationally-acclaimed academic support program, SI. The factors identified in this research study were level of SI engagement, gender, and final grades among Hispanic students. The purpose of this quantitative research was to evaluate if SI impacted final grades and course completion in science and math courses among Hispanic students at a public, four-year south Texas Hispanic-serving institution.

The study evaluated SI's impact on final grades and course completion in College Algebra among Hispanic students. The results indicated that as long as Hispanic students participated in SI, despite the number of times they attended, their final grade and course completion rate in College Algebra increased. The results support when Hispanic students participate in SI sessions they are more likely to succeed in College Algebra.

There continues to be a gap between institutions' knowledge and practice in understanding and serving Hispanic students attending higher education. Many institutions have programs that address minority student success, but

often the effort is not focused (McGlynn, 2008). In order to increase persistence among Hispanic students, institutions must depart from its predominantly White cultural norms to become more inclusive of Hispanic college students (Hurtado & Ponjuan, 2005).

This study supports SI as an effective academic support program for increased academic success among Hispanic students at a HSI. These findings should encourage administrators with existing SI programs at HSIs to continue to promote SI among their students, particularly Hispanic students. The study should increase interest among administrators to invest more time and resources into SI in order to better support Hispanic students. Finally, for those institutions seeking to implement academic support programs to better support Hispanic students, results on the effectiveness of SI in this study confirmed it should be considered as part of their retention strategy.

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Dispute Resolution (ADR) as an Undergrduate Business Subject

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ABSTRACT

Problem Statement and Approach: This article describes a course on alternative dispute resolution (ADR) which is offered as an elective to upper division undergraduates at Daniels College of Business, The University of Denver. It is taught as a management course, therefore in addition to the ADR processes, consideration of mitigating sources of conflict within or among business is an important part of the content. The course is interactive with simulations of ADR processes by students.

Keywords: Conflict, disputes, management, form contracts, measurement, alternative dispute resolution (ADR), simulation, negotiation, mediation, arbitration, interaction, methodology, roles, process.

INTRODUCTION

Conflicts or disputes can be ubiquitous within a business, such as among divisions or product lines, workers and managers, or unions and management. They are also common among competing businesses where product life cycles of competing products diverge or patent infringement creates disruptive product marketability [WSJ 2012]. Conflicts may also exist with other entities such as customers, suppliers, bankers, insurers or government regulatory agencies. Any of these conflicts may disrupt the operation of a company and resolution is necessary for smooth operation of any business. Yet there is a positive side of conflict: the use of controlled or Afunctional@ internal conflict (i.e., cognitive dissonance) to generate innovation, team motivation and new markets [Robbins 2003]. And the inherent definition of competitiveness requires some degree of conflict among competitors.

When one considers all these variations of conflict from a business management perspective, ADR or "alternative dispute resolution" (which includes negotiation) is simply part of a much broader spectrum of business conflict management. Generally the first solution to conflict management is eliminating or resolving *sources* of internal or external conflict [Weiss and Hughes 2005].

As a result, the design of a management course on conflict resolution in the 21st century needs to consider this broad spectrum, yet not forget the need for competitiveness and the value of internal cognitive dissonance.

THE COURSE [See Bowen 2009 and Erickson and Bowen 2006]

When I was asked to create an elective undergraduate management course on dispute resolution, the issue of competitiveness vs. conflict management was one of the keys to designing it. The crux of the first part of the course therefore considers how to avoid disruptive conflict within a business or with other entities yet be competitive. The second part of the course focuses on applying and simulating each ADR process--negotiation, mediation and arbitration--to the contents of the first part. An added reason for simulations is the fact that ADR processes have become so prevalent in resolving disputes of every sort, probably every student would, at some time in his or her life, be involved in an ADR activity[1]. (I ask that question in class and students often respond that they have already been part of an ADR activity, usually without knowing what it is.)

Another ADR component which is studied during the second part of the course is the law and regulatory environment of ADR and how they apply to the various entities which host the ADR process. That part of the course is hard for some undergraduate students as there is significant, difficult legal reading and related discussion. But it precedes and is critical to the class simulation of each type of ADR activity, scheduled at the end of the course (more about that later).

[1] When one looks at standard-form contracts, nearly every variety has an ADR clause in it: bank or credit card contracts generally have an arbitration clause in them, real estate contracts (in Colorado) have a mediation clause, auto purchase contracts generally have an arbitration clause, most employment contracts have either an arbitration or mediation clause (etc.)

All of this is done with the over-arching management framework that the more students understand the wide-ranging dynamics of conflict, the more effective they will be as executives. So the course is taught as a management course, not a law course nor an intense ADR course, but they get a large dose of each[2].

METHODOLOGY OF TEACHING ADR AT THE UNDERGRADUATE LEVEL

One of the things which I have learned as a many-year practitioner of ADR is ADR is generally a face-to-face process, and effective direct communication, controlled body language, a non-threatening environment, etc., are keys to success in any ADR process. It is certainly not an "electronic" environment. To transform that into a teaching framework is not simple, and the result has been a fair amount of experimentation over the years I have taught the course. The other issue has been varying class sizes, which has an impact on the size and structure of simulation teams.

Though some traditional lecture is necessary, particularly during the beginning of the second part of the course (the law section), the course is designed to be very interactive among students. That reputation motivates students: it is quite pejorative for a student to come to class unprepared because most structured student interaction is graded. Result: students are generally very well prepared. The interaction has two parts: during the first part of the course students report results of either team or individual projects to the class which generally results in discussion. The interaction during the second part of the course is role playing where students become fictitious participants in three negotiation simulations and the mediation and arbitration simulations. The personalities of students are very evident during the simulations: most students are very earnest and do a very good job in their role playing. But some students (often the ill-prepared ones) over-play their roles (grandstanding) and that can have a negative effect on their grade. Other students are too quiet and thus don't adequately participate which causes grading issues. I have at times individually coached quiet students.

Another activity during the first part of the course is a pair of written projects [Bowen 2008 (1 & 2)] which result in classroom discussion that connects student work experiences and mitigating *sources* of conflict. That has been very effective. Most students (many of whom are seniors) either have or currently work, at times in demeaning jobs with many conflicts; to connect those experiences with the managerial concept of mitigating sources of conflict really validates that part of the course for them[3].

The key to the second part of the course, as I noted above, is students simulate every type of ADR activity: negotiation, individually [Bowen 2012 (1), 2012 (2)] and in teams [Jebe 2009], a full mediation of a dispute case [Bowen 2012 (2)] and a full arbitration hearing of the third part of that case [Bowen 2012 (2)]. The negotiation cases which I wrote for the course and Ms. Jebe's case divide the class into divergent interest groups to negotiate solutions. For the mediation and arbitration hearings (my 2012 (2) case), there is the different division of students into interest groups with one student assigned as mediator and another as arbitrator. And "lawyers" are assigned to interest groups, as well. This is where differentiation of class sizes was an initial issue: 24 students divide nicely into 4 teams; 18 divides into 3 teams. But not so for 17 (or 11 or 7). I therefore re-wrote the working versions of the cases, so that within reason I can add or subtract certain participants, without destroying the intensity of the negotiations, mediations or arbitration hearings.

Effective locations for the simulations is also important. Projects where students report on a case or project to the full class (as the *trust* case) are easily done in the classroom, but the simulations are now set up in flat-table rooms divided into however many teams the class has. It became evident early on that it was necessary to simulate a real conference-table environment (and second room for mediations) for the ADR simulations. Though I haven't had a dress code for the simulations, students generally come to them dressed up, and I think that adds to the realism of the simulations.

[2] One of my students was so fascinated with the ADR processes, she went to work for the American Arbitration Association after she graduated.

[3] I occasionally have students from China or other foreign countries who have never worked, and that, plus occasional language issues will create a barrier to understanding some contents of the course. I usually individually coach those students.

Grading the simulations is done using many criteria. Among them are preparation, role playing, presentation, creativity, listening, reasonable solutions, etc. Criteria obviously vary for the different ADR activities and different roles. My graduate assistant and other masters-level graduate students help grade and as necessary will coach the ADR process. There has been an evolution of grading forms, which I continually edit (futz with is probably a better term) and I give them to the graders on clipboards at the beginning of the simulations. The graders are also given copies of the cases ahead of the simulations.

When a solution is reached (or not reached) by the simulation teams, we de-brief: first the students share their solution(s) with the rest of the class, then the graders critique which is usually an excellent learning experience for the students, then I may make comments. I generally float among the teams during simulations listening and writing notes on a clipboard.

MEASUREMENT AND EXAMINATIONS

Because of the division of course subject matter, a significant mid-term examination is given and a test on the ADR processes, entities, law and regulations is given just before the start of the final simulation sequence. As a result a final examination has never been given as its contents would be superfluous. There are 9-10 measurement activities within the course, the simulations providing a large percentage of the course grade. What I require, however, is a waiver document signed by the students waiving their right to take a final examination. I have found that a good practice if, for example, a student later objects to his or her posted grade (though no one ever has).

CONCLUSION

Competent management of a business, not-for-profit, academic institution, union or any other entity exists, but my observation is that for every entity that is well-managed there are perhaps a half-dozen where the reverse is the case. It is therefore critical that business school management courses have relevance to the needs of future managers. Subject matter in those courses should thus give future executives as broad a knowledge base as is possible [Bowen 2012 (3)], including understanding the sources of conflict within an entity, a knowledge of how to diminish their disruptiveness, and a method to resolve them when they become abjectly disruptive. ADR has become the desired solution to conflict in the United States and it is becoming so in other countries on other continents. This partly derives from the fact that ADR is less expensive than going to court, it is party driven—which means the combatants have agreed to resolve the dispute using ADR--and perhaps the most important key, based the complex world we live in, is the ADR processes can be fashioned to resolve the exact issues of the dispute. Courtrooms are often less able to do that.

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Integrating an Executive MBA Program

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ABSTRACT

Recent literature suggests that business schools need to do more to integrate their curricula. This paper describes the development and delivery of an integrated Executive MBA program with the goal of providing a possible model for other schools looking to address this need. The paper reports that designing layers of integration into the curriculum – at the course level, at the semester level, and at the program level – appears to be necessary to realize real and comprehensive integration. Assessment data on the integrated model presented is included.

Keywords: integrated curriculum, executive MBA, program integration

INTRODUCTION

Over the last few years there have been renewed calls for business schools to rethink their MBA and Executive MBA programs in the face of a changing business environment. Articles with titles like "How relevant is the MBA program" (Rubin & Dierdorff, 2009) and "Rethinking the Executive MBA" (Petit, 2011) and books like "Rethinking the MBA: Business Education at a Crossroads" (Datar, Garvin & Cullen, 2010) are examples of this. Joel Podolny's 2009 Harvard Business Review article provides perhaps the most concise and focused discussion of the challenges facing MBA programs going forward. In that article, Polodny describes society's growing distrust of businesses, business people and the business schools that educate them. Polodny, who is the dean and vice president of Apple University and the former dean of the Yale School of Management, offers five starting points to reducing people's distrust of business schools. The first starting point is to foster greater integration. At one point in the article Polodny even states "I'm angry about the disciplinary silos in which business schools teach management."

Part of what must make Polodny and many others "angry" is that this shortcoming of business schools is not new. Business schools have been criticized for offering functionally focused curriculum and for teaching in disciplinary silos for almost 25 years, going back to Porter and McKibbin's (1988) often cited work that first brought this issue to the forefront. Clearly some progress has been made since Porter and McKibbin's work first appeared. Hamilton, McFarland & Mirchandani (2000) and Cannon, Klein, Koste & Magal (2004) have both catalogued a number of approaches used by business schools to achieve some level of curriculum integration, including interdisciplinary courses, team teaching, multidisciplinary projects, coordinated syllabi, capstone courses, and integrated themes like entrepreneurship and the balanced scorecard. Further, there are a handful of exemplary examples of integration. Datar, Garvin & Cullen's (2010) book, for example, features a chapter on the Yale School of Management and its well integrated program. But on the whole that progress has been painstakingly slow.

At best, business schools have narrowed the gap between the amount of integration needed and the level of integration delivered. But the argument could also be made that we have fallen further behind what our stakeholders really need from us in terms of integration. As academia has moved ever so slowly toward greater integration, the pace of societal change that drives the need for integration and determines the extent of integration required (e.g., technological change, globalization) has accelerated. There remains a clear need for additional models illustrating extensive curriculum integration and for accelerated paths to achieve the integration our stakeholders need if we are to close this integration gap.

In 2007 our university launched an Executive MBA program that was designed from the ground up to be an integrated program. This paper describes how we went about achieving extensive and meaningful integration in this program. The purpose of the paper is to share our model and experiences with it so that other business schools can build on it to close the integration gap that Podolny, Datar, Garvin, Cullen and others say still exist and that has eroded the trust that society has in academia. The paper begins with a brief description of our college so that readers can better understand the context in which the program was developed. This is followed by a description of the process we used to develop the program. The paper then describes how we achieved integration in the program, which is done at three different levels (course, semester and program wide). Assessment data on our integration

efforts is then provided so that the reader can better understand the results our integrated approach has achieved. The paper concludes with recommendations for other programs looking to better integrate their EMBA programs.

THE COLLEGE CONTEXT

Our College of Business & Economics (CBE) has a somewhat unique context and history that probably gave us some advantages in creating an integrated EMBA program. The CBE is relatively small, particularly when compared to business programs at other land grant institutions. The CBE has approximately 1200 students, the vast majority at the undergraduate level, and 38 full-time faculty members consisting of 30 tenured and tenure track academically qualified faculty members and eight full time, professionally qualified instructors. We have between three and five academically qualified faculty in each of the traditional business disciplines.

Recognizing the fact that the small number of faculty within each discipline would limit our college's ability to compete as a disciplinary powerhouse, we decided to turn that apparent disadvantage on its head and pursue an advantage based on interdisciplinary research and teaching. This approach is reflected in our college's vision statement:

> We will be *a leader in integrated business education* through innovative and transformational learning experiences that prepare our students to meet the opportunities and challenges of a globally competitive world. We will be responsive to the changing needs of our stakeholders.

We have also driven this focus on integration and interdisciplinary work into our research efforts. Our requirements for promotion & tenure explicitly encourage and reward interdisciplinary research. The context statement we send out to our external reviewers, for example, reads in part:

> Given the emphasis on integrated and experiential educational programs, multiple-author and interdisciplinary research/scholarly activity is encouraged and rewarded. Pedagogical and business case publications are also encouraged and rewarded.

Likewise, our college explicitly recognizes the value and importance of interdisciplinary research in our process for awarding faculty fellowships. Our college has 10 named fellowships for faculty that provide additional compensation to faculty members beyond their state funded salary. These fellowships are awarded for one to three year intervals, depending on the fellowship. All of the fellowships place interdisciplinary work on at least par with disciplinary work, and several are specifically designed to recognize interdisciplinary work.

DEVELOPMENT OF THE INTEGRATED EMBA PROGRAM

We developed our EMBA program in response to input from companies in our region that were seeking graduate business education opportunities for their mid level managers. These companies were looking to invest in their management teams both to help their companies survive and grow as well as to give their key people new challenges and developmental opportunities in an effort to improve retention. These companies were generally small, but also included a couple of medium-sized companies.

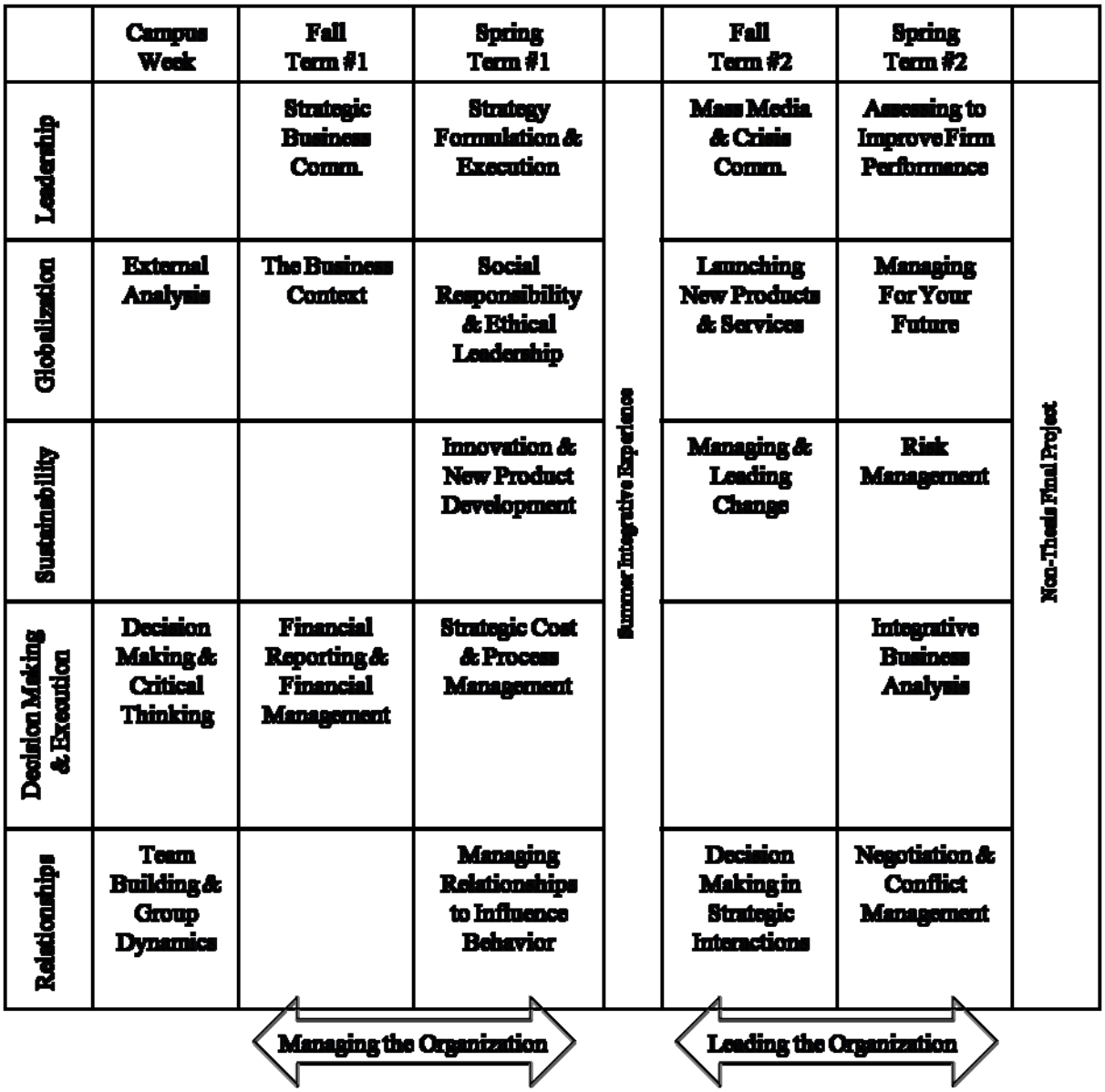
Our college is known for its integrated undergraduate business curriculum, and on accreditation visits the AACSB has commended us for our work to integrate our undergraduate program. Many of the companies that were seeking graduate business opportunities in our region employed graduates from our integrated undergraduate program. As we talked to these companies about their needs, it became increasingly clear to us that these companies expected us was to build on the strengths of our integrated undergraduate program and bring that integrated mindset to the design and delivery of a results focused Executive MBA program. As a result of both our strengths and our stakeholder needs, we set out to develop an integrated Executive MBA program.

A team that included both junior and senior level faculty members was recruited to develop the initial curriculum design. The team was selected based on their interest in curriculum design, their interest in teaching in the program, and their ability to think and work across disciplines. Throughout the first couple of months of work to design the curriculum, the focus was on designing an optimally integrated curriculum without regard to the resource constraints we would face in delivering the program. This helped us to be more creative in conceptualizing what the program

should look like. The design team considered information that we had collected from regional stakeholders, looked for examples of how other programs had pursued integration, and considered what advice the literature could offer. The design team also drew from our own collective experience integrating our undergraduate program, but recognized that we couldn't simply think about integration at the EMBA level as putting our integrated undergraduate curriculum on steroids. We fundamentally rethought what integration meant given the level of students would be serving.

The design team brought a draft of the curriculum to the full faculty for consideration. Significant discussion followed. Faculty from each discipline considered how and to what extent content from their discipline was reflected in the design. Multiple faculty meetings were held to discuss and refine the design before the faculty approved the new curriculum. The overall structure of the curriculum is shown in Figure 1. The top row represents the time sequencing, the left hand most column reflects the cross-cutting themes, and the remainder of cells contain the names of the specific courses.

Figure 1: Overall Structure of the Curriculum



A faculty team was then formed to teach the first cohort. That team worked together to take course titles and descriptions and convert them into learning objectives and detailed plans for each 5-hour session in the program. The teaching team sought input from all members of the college faculty. They drew numerous mind maps and sought out appropriately integrated teaching materials. The whole team tackled courses in turn in the order in which they would by taught. The logic was that if the program was going to be truly integrated, the courses needed to be thought through and understood by everybody. Simultaneously we considered what project could be used to integrate across each semester's courses. Our experience teaching and conducting research across traditional disciplinary lines had taught us how to value the alternative perspectives that each discipline brought to the table. The excitement of creating something new and our collective commitment to the effort kept us moving forward and helped us find ways past impasses. In August of 2007, we launched the program.

HOW WE ACHIEVED INTEGRATION – THREE LAYERS OF INTEGRATION

The key that we found to achieving an integrated EMBA program was to approach the task in multiple ways and at multiple levels. No one approach that we took was sufficient to realize the integration we sought, but by pursuing multiple approaches and essentially thinking about the integration in layers helped us to achieve the results that we set out to. As we designed the program, we simultaneously thought about how to integrate the program at the course level, at the semester level, and at the program level. In describing it here, we start at the course level and work our way up to the program level.

Layer I: Integration at the course level

Integration across two or more traditional disciplines within an individual course represents the first layer of integration in the program. Most of the individual courses in the program integrate concepts from two or more traditional disciplines, as can be seen in Table 1.

Table 1: Traditional Business Disciplines Covered in Each Course

Course	Discipline								
	Accounting	Decision Sciences	Economics	Finance	Management	Marketing	Operations / Info	Strategy / Leadership	Other
Decision Making & Critical Thinking		✓							
Team Building & Group Dynamics					✓				
External Analysis			✓					✓	✓
The Business Context			✓	✓	✓	✓		✓	
Financial Management & Reporting	✓			✓					
Strategic Business Communication								✓	✓
Strategy Formulation & Execution								✓	
Innovation & New Product Development					✓	✓	✓	✓	
Strategic Cost & Process Management	✓						✓		
Managing Relationships to Influence Behavior					✓	✓			
Social Responsibility & Ethical Leadership								✓	✓
Mass Media & Crisis Communication								✓	✓
Launching New Products and Services				✓		✓	✓		
Managing & Leading Change					✓				
Decision Making in Strategic Interactions		✓			✓			✓	
Negotiation & Conflict Management		✓			✓				✓
Assessing to Improve Firm Performance	✓	✓		✓	✓	✓	✓		
Risk Management		✓		✓					
Managing for Your Future									
Integrative Business Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓

Some of these courses, such as *Launching New Products & Services*, are team taught (in this case by faculty from finance and marketing). Other courses are taught by a single instructor who brings perspectives from multiple disciplines to the class. *Managing Relationships to Influence Behavior*, for example, draws from both the marketing and management domains but is taught by a single individual. To illustrate how we achieved this integration, we look briefly at two specific examples.

The course 'Strategic Cost and Process Management' is taught by professors from accounting and operations. The course explores how to design and manage processes to achieve organizational objectives, how to cost the outputs generated by these processes, and how to manage the budgets associated with these processes. Managing processes and costs become the context for delivering a number of core operations and cost accounting concepts in an integrated manner.

The course is delivered in nine 5-hour sessions, each taught by one of the two faculty members. After introductory sessions that clearly have their roots in the respective disciplines, subsequent sessions intertwine process and cost concepts. The professor of operations, for example, delivers sessions on capacity and outsourcing, and in both sessions helps students apply accounting concepts to understand the cost implications of the associated process decisions. Likewise, the accounting professor connects the costing tools she presents to process design concepts presented by the operations professor so students see how the combination of concepts provides the real insight needed to make better business decisions.

The course 'Managing Relationships to Influence Behavior' is taught by a single faculty member but integrates content across the management and marketing disciplines. The integration is achieved by building the course based upon the common underlying theories that help explain human behavior from the psychology and sociology domains. The course has four broad learning objectives:

- Describe the relationships among employee behaviors, customer behavior and firm-level performance.
- Identify the underlying factors that impact any human behavior.
- Apply appropriate human resource, leadership and marketing practices to influence employee and customer behavior.
- Design an employee management system and a customer management system to support the implementation of a new service.

The focus of the course is neither management nor marketing per se, but understanding and influencing human behavior. Once students have an understanding what drives human behavior and how they can influence it, the professor helps students see how this knowledge can be applied in what would be considered traditional marketing and management settings. Cases and readings in these sessions draw from both marketing and management domains.

Most of our courses tend to be integrated using one of these two approaches. Initially a number of courses were taught by three or more faculty members. Over time, we discovered that the coordination costs of such courses were quite high, and that these courses were at best only marginally better integrated than courses that by one or two faculty members. When we first offered *Assessing to Improve Firm Performance*, for example, we had five faculty members teaching one or more class sessions. Despite efforts by the faculty to coordinate across sessions, both faculty and students felt like the course was providing multiple disciplinary perspectives on assessment as opposed to an integrated perspective. One faculty member offered to take over the bulk of the course and become an expert on the process of assessing to improve performance. As a result, the course now provides a truly integrated perspective to the students.

Layer II: Integration at the semester level

Integration at the semester level is driven primarily through the use of a 'Semester Integrative Project' that is designed by the lead faculty members teaching in that semester. The projects are completed by teams of students and require them to apply concepts from two or more courses that semester. The projects receive a unique grade for each of the courses in the semester from which it draws content, and can count for anywhere from 10% to 40% of the grade in a course.

In the previous section we highlighted how we integrated two of the courses from semester two of our program, so we continue that example here and show how we developed a semester integrative project across these two plus two

additional courses from semester two. Our semester two project involves a detailed analysis of a particular process in one of the students' organizations. Students consider the role the process plays in supporting the organization's strategy (EMBA 521). They map the process and evaluate the process design and performance on a variety of dimensions (EMBA 524). They consider the employee and customer behaviors needed for the process to be effective and how these behaviors are encouraged (EMBA 525). Finally, they apply principles of kaizen and design thinking to improve the process (EMBA 522). At the end of the semester students present their projects to faculty from all four of these courses.

A secondary driver that helps us achieve integration at the semester level is the collaborative development of the monthly session schedule. All faculty members teaching in a given semester meet to lay out the schedule for the semester, trying to build on the relationships among the content of the individual sessions as much as possible given faculty availability constraints. Our EMBA classes meet once a month for three consecutive days (Thursday, Friday and Saturday). Each day is split into two 5-hour sessions, so that each month we deliver six 5-hour sessions. These sessions are never all from the same course, so we strive to order the sessions in a way that allows later sessions to build on earlier ones, regardless of whether or not the sessions are in the same course or not.

Layer III: Integration at the program level

Integration at the program level is accomplished in three main ways – through themes that run across the semesters, through a summer integrative experience, and through a second year integrative final project.

When we designed the program, we identified five integrating themes that we attempted to weave through the courses and semesters: leadership, globalization, sustainability, decision making & execution, and relationships (see the left hand column of Figure 1). Faculty collaborated on how we should approach each theme, and this provided an important mechanism to discuss and design in integration at the program level. Figure 2 provides an example of how the integrating theme of 'relationships' is woven into and connects courses across semesters. This type of analysis was carried out for each of the five integrating themes.

The second way that we integrate at the program level is to require students to complete an integrative experience during the summer between their first and second years in the program. This student designed experience requires students to engage in some project that draws upon the content from multiple courses during the first year of the program. A single faculty member approves and oversees these experiences, and students are required to deliver a presentation on what they learned to the program faculty and their peers at the end of the summer. Students have often looked outside their current employment situation for these experiences, using them to simultaneously broader their EMBA experience. Students have, for example, worked on projects with nonprofits, read three or four books on a common professional theme in a book club format, and self-organized international study tours.

While the summer integrative experience helps students to integrate concepts across the first year, their required final project requires students to integrate learning across the entire program. For this project, students are encouraged to take on a project for their current employer that draws upon a breadth of content from the EMBA program. Each project is custom designed by the student and each student is paired with a faculty member who mentors them through the project. Many of these projects have involved either developing a business plan to exploit a previously untapped market or developing plans to build or improve some organizational capability required by the business to meet some changing business context.

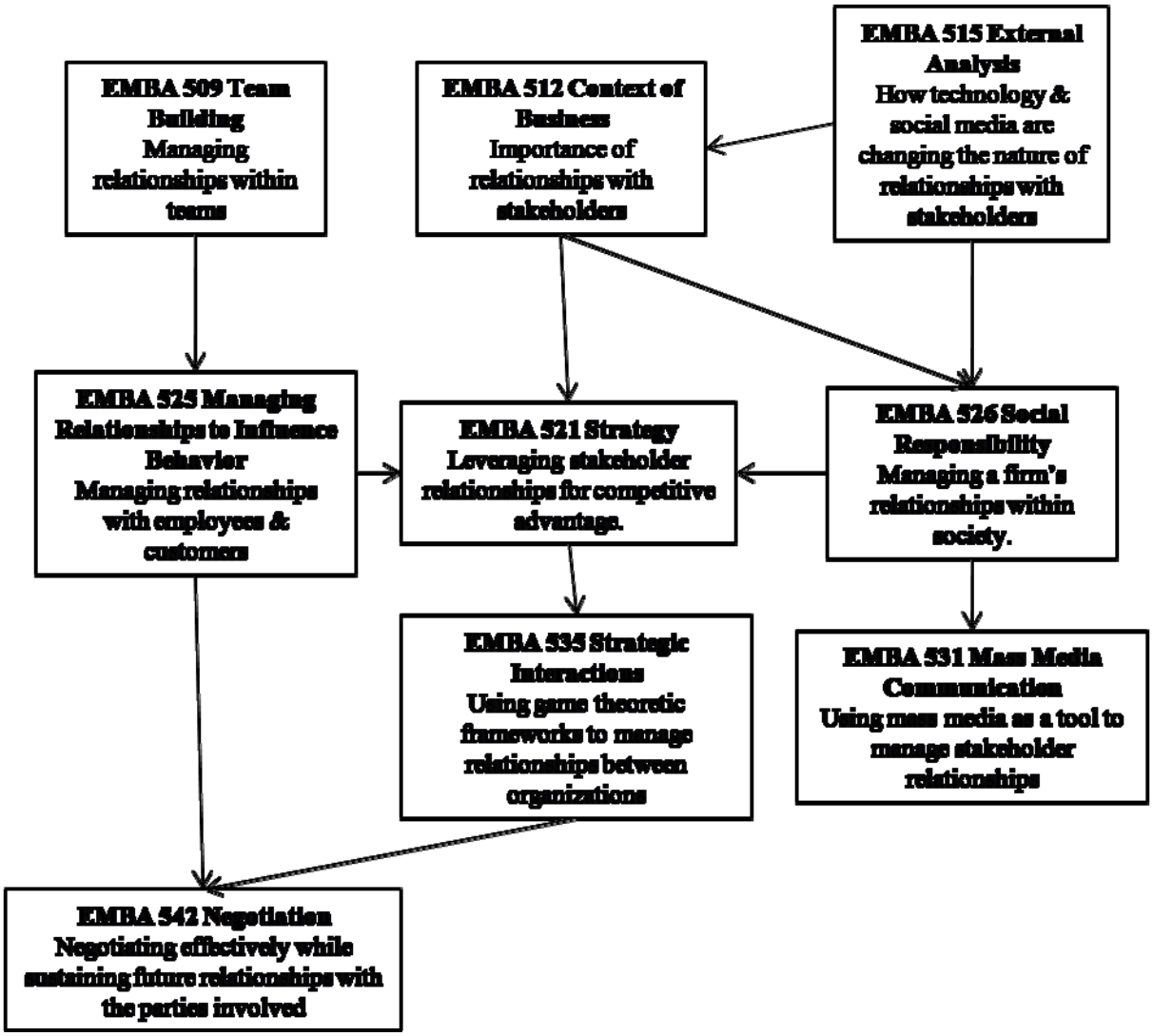
Across all of these layers of integration, we have seen evidence of a virtuous feedback loop. As we develop integrated courses, work to understand the disciplinary linkages across integrating themes, and mentor students through integrated projects, we as faculty learn more about each others' disciplines and develop greater capability to deliver business education in an integrated manner. We expect our executive students to think across disciplines and in an integrative manner – they expect the same from us. As we help them understand how to do this, we also learn from the applications and contexts they bring to us.

STUDENT FEEDBACK

We had the Executive MBA Council administer its standard student exit survey to our first two EMBA graduating cohorts. The survey had a handful of questions that proved useful in assessing integration. The relevant

assessments from the surveys of our first two cohorts are shown in Table 2. The scale ranged from performed extremely well (10) to did not perform well at all (1).

Figure 2: Integrating Relationships Theme across Semesters



Students' responses to three of the survey's questions provided direct assessments of the success of our approach to integration. Section D on curriculum asks graduates to rate the content of the core curriculum as well as the integration of the content across core courses, while section G on learning outcomes asks graduates to rate how much they have improved their ability to integrate business disciplines. As can be seen in Table 2, the first graduating class rated our integration as so-so (i.e., scores in the 6.9 – 7.4 out of 10). The fact that this was the first time we delivered an EMBA program of any type, let alone an integrated one, likely had a significant bearing on these results. The second graduating cohort benefited from what we learned working with the first cohort, and their assessment indicated strong support for our approach to integration (i.e., scores in the 8.7 – 9.0 range out of 10). The closeness of the three scores within the individual cohorts suggests that graduates appear to be seeing a connection between how well we deliver an integrated program and how highly they evaluate the overall content of the core curriculum.

Table 2: Student Assessment of Integration

Performance Dimension	Cohort #1 Response rate = 79%	Cohort #2 Response rate = 75%
Direct Assessment of Integration		
Content of core curriculum	6.9	8.7
Integration of content across core courses	7.4	8.8
Integration of business disciplines	7.4	9.0
Indirect Assessment of Integration: Relevance & Impact		
Relevance of class work to my job/career	7.0	7.9
Impact on your career	6.0	8.1
Impact on your personal goals/aspirations	6.4	9.3
Impact to your employer/organization	6.7	7.6
Skills Development along Integrating Themes		
Leadership skills development	8.1	9.2
Decision making skills development	7.6	8.8
Global sensitivity skills development	7.7	8.8
Relationships skills development	Not Available	Not Available
Sustainability skills development	Not Available	Not Available
Assessment of Some of the Integrating Mechanisms		
Quality of case studies	7.8	8.7
Quality of Team projects	7.1	8.4
Quality of Individual projects	7.9	8.8
Sample comments dealing with integration directly: "I have a greater understanding of the perspectives of other departments within the company so I can understand the needs they may have to perform their jobs" "The integrated program worked very well for me based on the point in my career" "The cooperation and work of faculty to integrate cross-discipline features into their curriculum allows the student to experience the complexity of real-world problems in business in contrast to a narrow-banded approach" "I also enjoyed learning from the integrated curriculum structure as it significantly aided in the immediate application and understanding of the content taught"		

The next four scores in the table provide some measure of impact of the program on the student's organizations and careers. We would expect that if students truly need an integrated EMBA that we would see students reporting that the integrated program we offer is relevant to and has an impact on their careers, personal goals and ambitions. Again we see that the second cohort reported a higher level of impact than the first cohort. The fact that the second cohort felt we did a much better job with the integration (i.e., the first set of scores) suggests a possible correlation between delivering better integration and having a greater impact on the students' goals, careers and organizations.

The second half of Table 2 provides an assessment of several of the approaches to integration. The first are assessments of skills development in the three integrating themes areas for which the survey contained assessments. Along each of these themes we scored somewhat higher than we did for overall integration with the first cohort, suggesting that these integrating themes were in and of themselves effective, but insufficient to achieve integration program wide. These numbers improved with the second cohort, and this improvement likely contributed to the improvement in the overall integration scores. We also used case studies and projects in our effort to achieve integration, and the final set of numbers in Table 2 provide measures of the quality of these methods. These numbers suggest that we didn't execute as well on the team projects with the first cohort, and that this may have had an adverse affect on both the direct and indirect measures of integration for that cohort. The second cohort reported

better execution on the team projects, which we again suspect contributed to the overall higher integration scores for the second cohort.

Finally, we reviewed the general comments that students provided for those relating to integration. All students mentioning integration on the open ended survey questions had positive things to say about the integration. Additional anecdotal information suggests that our students found the efforts we made to integrate the curriculum to be effective and valuable. We have heard back from graduates as well as the leaders in the organizations they work for that the integrative learning has allowed our graduates to better cope with the economic challenges that companies have been facing the past few years as well as capitalize on some emerging growth opportunities.

CONCLUSION

For us, offering a traditional, functionally organized and structured EMBA program was never seriously considered. Both because of how we approach our mission as a business college and because of what our stakeholders were telling us, we set out to deliver an innovative and integrative EMBA program that would meet the needs of the leaders of the small and mid-sized companies that operate in our region. Based on our experience, we make the following recommendations to other schools looking to integrate their executive MBA program:

- No single approach to integration seemed to produce the majority of benefit for the students – we didn't find a silver bullet. Rather, it was the fact that we integrated at multiple levels and in multiple ways that collectively produced the benefits.
- Plan for integration to take somewhat more faculty time than would be required in a functional program. It takes time for faculty to coordinate within and across classes, projects, semesters and the program. The required integrated expertise among faculty can also make staffing the integrated courses more challenging in the face of faculty sabbaticals, turnover and the like.
- Integrating the curriculum improves the efficiency of content delivery (i.e., more content in the same number of credits). Most faculty members believe they know where the boundaries are between functional areas, so they don't feel the need to talk to each other about what they are teaching when teaching in the 'safety' of a functionally structure program. Delivering the program in an integrated manner forces everybody involved to talk about who is teaching what, and this reduces duplication of effort and, where duplication occurs, it can be done in a conscious manner to reinforce critical concepts.
- While experience and success at integrating an undergraduate program is a helpful starting point, an integrated EMBA is more than an integrated undergraduate program on steroids. The couple of faculty members who tried to take what they did to integrate their content for the undergraduate student and translate it directly for the executive program were much less successful than those who started their effort to integrate the content from scratch.
- No matter how well you integrate the curriculum, food still matters! We were told by colleagues at the EMBA council that food was a high priority and frequently talked about (and complained about) issue for EMBA students. All our efforts to integrate our curriculum didn't keep students from judging us at times by the quality of our food.

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iTeaching: Using an iPad to Go Green While Supporting Teaching Efficiency

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ABSTRACT

The iPad can be used to support teaching in many facets. The author has encountered many fellow professors who perceive that an iPad could be useful to present a Powerpoint to a class, but fail to realize the other opportunities for teaching efficiency and student learning. In fact, an iPad can be used to support an instructor with preparing for lectures, managing administrative tasks outside of class, grading, supporting in-class cooperative learning, as well as presenting lectures. An added benefit is the reduction in paper that needs to be printed and transported.

Keywords: Mobile Computing, Pedagogy, Apps

INTRODUCTION

The use of tablet computers, such as the iPad, has been growing in many industries. Physicians are using it to help make diagnoses, (Henderson, 2011), corporate America is taking notice (Castelluccio, 2010; Drew, 2011; Geyer and Felske, 2011), and professors are trying them out for student use in K-12 classrooms (Waters, 2010; Pamplin, 2011) and college acoustics courses (Faber, 2011). This study examines the use of an iPad to support classroom instruction and cut down on the amount of paper that has to be printed. An iPad is a small computer device that allows the user to interact by touch. The iPad has a large array of Apps (applications) that can be installed that each accomplish a specific task. The iPad can be connected to the internet through a WiFi connection or by an account with a phone service provider such as AT&T or Verizon. The iPad has been marketed as a consumer of information, allowing users to check email, surf the web, catch up on news feeds, watch movies, listen to music, and play games. An advantage to harnessing the power of the iPad for use in the classroom is its small size and its long battery life. This study will document an iPad's use for preparing for lectures, managing administrative tasks outside of class, grading, supporting in-class cooperative learning, as well as presenting lectures.

At least anecdotally, when I approach professors who have iPads at my school and at conferences, I have found very few that use the iPad during class. Those that do use the iPad for instructional purposes use it to display PowerPoint presentations. And most do not use it outside of class to support instruction except for responding to email and grading/marking up papers submitted as pdf files. I feel that I have methodically designed my use of the iPad over the last year during 3 quarters to take advantage of its potential. I feel that the use of the iPad has enhanced my own efficiency as well as my students' learning, and that by sharing this information with other professors, that they can easily implement similar tasks to support their own teaching.

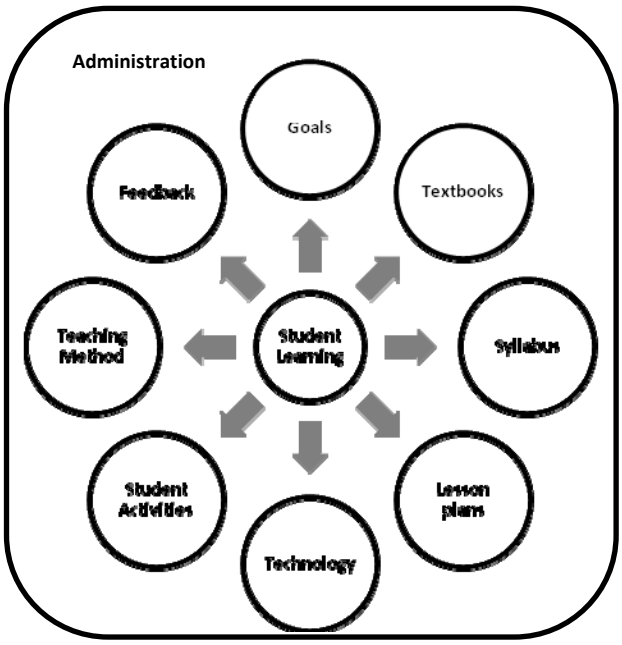
In this article I will summarize relevant literature, discuss how I have used the iPad to support 9 facets of student learning including Goals, Textbooks, Syllabus, Lesson Plans, Technology, Student Activities, Teaching Method, Feedback, and Administration, and document my conclusions about using the iPad and provide implementation suggestions for other faculty.

PREVIOUS RESEARCH

In examining what impacts student learning, McKeachie and Svinicki (2006) proposed 7 items that included Goals, Textbooks, Syllabus, Lesson Plans, Technology, Student Activities, and Teaching Method as shown in Figure 1. I have expanded this to include Feedback and an overall container for Administration of the course. The iPad has the ability to support each of these items and, therefore, can impact student learning.

The use of the iPad to display "marked up" lecture notes was my initial foray into bringing the iPad into the classroom. Lecture notes should contain *signposts* that give the instructor direction and reminders as the lecture progresses such as when to point out *transitions*, when to ask questions, and what to emphasize as the most important *key points* or *concepts* (McKeachie and Svinicki, 2006).

Figure 1: Course Preparation Components (This Figure is adapted from Figure 2.1 on p. 10 (McKeachie and Svinicki, 2006) by adding the circle for Feedback and the overall Administration frame.)



Another important part of my class is the use of cooperative learning. Cooperative learning activities can "increase concept retention because they have an anchor in an active experience, they emphasize judgment and accountability rather than knowledge recall, and they counter the student boredom and apathy in lecture-based courses" (Koppenhaver and Shrader, 2006). An integral part of students learning from each other is the continued interaction and direction from the professor as these cooperative activities are taking place (Inman, Kerwin, and Mayes, 1999). Leidner & Jarvenpaa (1995) point out that the role of the instructor changes from controlling the content and delivery of learning to facilitating the maximum amount of information and knowledge sharing. Being able to constantly walk through the room with my iPad allows me to be mobile and interact and direct groups while taking advantage of any "quiet time" to check email or mark attendance. And Nemanich, Banks, and Vera (2009) note that the students' enjoyment in the course is related to high levels of "interactivity among teachers and students, feedback, and immediacy of interaction—all attributes that sustain student motivation."

In my opinion, the use of the iPad in the classroom rivals the introduction of the Tablet PC almost 10 years ago. Gill (2007) documents several uses for the Tablet PC related to the classroom including rapid multimedia development, grading, lectures, and collaboration. I have been using a Tablet PC since 2005 in the classroom focusing mostly on grading, marking up lecture notes, and using it during actual lectures to work out statistics problems. While I am not ready to give up my Tablet PC, for me the integration of using the Tablet PC alongside with my iPad has increased my efficiency as an instructor and has improved student learning.

SUPPORTED FACETS OF STUDENT LEARNING

In designing the use of the iPad to support my efforts as an instructor, I focused on the 9 areas in the diagram in Figure 1. I will discuss the areas in order of my integration of them into my class.

Lesson Plans

In prepping a brand new Data Visualization course in winter 2011, I stared at my big pile of notebooks of notes for my other courses that I would lug around (to class, to office, to home, and back…) and wondered if there would be an easier way. I decided to create pdf files of my "marked up" class notes (created in Word) and lecture from them on the iPad using the GoodReader App instead of creating a new notebook.

There are two ways the "marking up" of student notes to create lecture notes was accomplished. One was using my Tablet PC to write on Word Documents with the *signposts* referenced earlier from McKeachie & Svinicki (2006)

that included talking points, screenshots of computer demonstrations, and answers with work to problems I would present. A second was to put the pdf files on the iPad in GoodReader and mark them up directly on the iPad. I would suggest using a stylus if you plan to do a large amount of "writing" with the iPad because I found my finger to be limited when I wanted to try to actually write rather than just draw. The best part of using the iPad for my lecture notes was that I never printed anything out, and I could easily make changes at the "last minute" as I would review the lecture one final time before class. These changes could be implemented immediately on the iPad and saved and I didn't have to worry about reprinting my notes or fixing them by handwriting on a page where I potentially would lose those changes for the next time that I taught the course.

Student Activities

The second component supported by the iPad was the cooperative learning time that I incorporate in each of my classes. My class length is 110 minutes which lends itself to having the first half of class involve lectures and problems that are worked out either as a class as a whole or in groups with immediate feedback from the entire class. After a quick break, the remainder of the class involves the students solving problems in small groups (same groups for the entire quarter) that typically involve using a computer for analysis.

My roll during this time is to interact with each group to identify potential misunderstandings, be available for questions, and generally prod them through the problems. Therefore, I typically walk around the classroom for about 50 minutes. Preparing my worked-out answers or screenshots of what I did on my computer to solve the problems ahead of time while I am preparing my lecture notes and carrying these around on the iPad has been a great timesaver because I can stay very organized. I can create hyperlinks in the pdf file so that I can link right to parts of the class notes, to worked-out answers to the problems, or to computer screenshots as I interact with a group.

Another benefit is that if a group is having computer trouble, I can leave my iPad with them for a few minutes showing screenshots of output they should be getting to help move them forward. The students really think this is helpful. And I haven't had to print any of this out!

The major benefit for me is that as I wander around, if there are no immediate issues, I can take care of other administrative tasks such as marking attendance on my Excel gradesheet in DocsToGo, checking my email, or going to Blackboard, our content management system, or my online homework system while being available at any moment when a question arises or if I hear students struggling with a concept. In the beginning of the quarter, I also have the photo seating chart at the front of the lecture notes pdf file so I can browse their pictures as I wander to help me learn names. I like the ability to be constantly available for questions around the room but yet have a tool that allows me to take advantage of any down time to focus on miscellaneous administrative tasks.

Feedback

There are four methods that I currently use on the iPad to assist with grading. First, since all my classes are designed with cooperative learning groups, each class has an Excel grade sheet that is organized by student group. This allows me to quickly grade their in-class assignments and give a score to all group members. I can grade these as they are turned in while walking around the room. I also have the students put their group numbers on any paper that is turned it to me. Then I sort the papers into the groups which allows me to grade them and pass them back easily. An alternative method is some classes post their work to their Group Wiki pages on Blackboard and, again, I can grade them as they are submitted. A side benefit is that I can learn their names quicker because they are in groups of 2-4 and I begin to associate the group members together.

A second grading method I use is marking up homework submitted by the students that is in pdf files. In the past I would exclusively do this on my Tablet PC, which is still a great benefit (Gill, 2007), but now I have the flexibility to grade with the iPad as well. Most assignments that are completed by my students are now submitted online, with only a few in-class assignments that still have "worked out" portions that are submitted by hard copy.

A final method is specifically for my classes where the students present Powerpoint presentations. I have some classes where there are 1-2 short presentations at the beginning of each class. Most of the time, the students will use my computer for the Powerpoint because it is already hooked to the projector. I have had an Excel gradesheet for these presentations for 10 years, but I have had to create a paper scoresheet that I would use to write comments that I would later have to transcribe back to the Excel sheet to distribute the grade to the student. With the iPad and DocsToGo, I can now grade simultaneously as they present.

A key component that makes these grading methods work is the use of a cloud-based storage service. I use DropBox, which creates a folder on my laptop that programs such as GoodReader and DocsToGo can sync with. This is the easiest way to get content to and from the iPad. The alternative methods would be to email the file to the iPad or use iTunes to sync the files.

A final feature that can be used for grading is the use of an App such as AirDisplay to turn the iPad into a second monitor. This works great for putting your sample answers or the key on the iPad and then having the student work and/or the gradesheet on your laptop or desktop computer.

Teaching Method & Technology

To support lecturing, I currently use my Tablet PC to "write" on the screen and work out problems on the class notes. I like this method because I can have the iPad as my lecture notes "on the side" that I can look at to keep me on track. But the iPad does have the ability to display via cable to a projector or TV screen. It is noted that the iPad 2 and 3 are better for this because the original iPad had some limitations about what would be displayed. The iPad only had a few applications that would support the display while the iPad 2 and 3 will display almost everything on the iPad screen to a projector or TV. An advantage to using an iPad to lecture where writing on the screen is involved is that it is less expensive than investing in a Tablet PC. A disadvantage is that you are not able to show software such as Excel or a specialized statistics package like JMP during your lecture. There would be a way to get around this limitation by using an App such as LogMeIn to display what is on your desktop or laptop in another location. Connecting to LogMeIn through wireless can be slow, but I have found a wired connection works fairly well. Relying on this technique would require testing and practice to get the hang of manipulating the mouse with your finger or stylus on the iPad screen

Administration

There are many administrative tasks that can be completed with the iPad. For creating short to-do lists, there are several options. Notes is an App which allows me to jot down things to do that come up either during a lecture or while I am wandering around during class. This keeps me from having to tell the students to email me the question/request, which was my typical response, because I knew I would not remember without a reminder because writing on an errant piece of paper tends to be fruitless. There is a Reminders App that will sync with my Outlook tasks. Another option is using PlainText which allows you to sync text files with DropBox. With this method, the To Do list file is transferred to your laptop/desktop.

Other administrative tasks include checking and responding to email, managing my online homework system, managing Blackboard (there are limitations with this but it works well for posting announcements and downloading course materials when I am away from my laptop but need to help a student), and marking attendance.

Textbooks

Now that more textbooks are being supported with online versions, the iPad also becomes the textbook. Most online textbooks are either accessed through a web browser (which requires access to the internet), an App such as CourseSmart or Kindle, or come in .pdf file format that can be viewed by Apps such as GoodReader or DocsToGo.

Goals & Syllabus

To support general planning for courses, including creation of goals, learning objectives, and designing the course syllabus, I like to use an App called NoteTaker HD with the stylus for brainstorming. If you have used OneNote before, particularly with a TabletPC, this is comparable but not as advanced or easy to move/reorganize items. But it continues to get better with updates. It is the best handwriting supporting App that I have seen so far.

CONCLUSIONS

The iPad has had a great impact on my ability to be efficient in the teaching process and, therefore, has increased my ability to enhance student learning through the 9 facets in this article. While all facets have been helpful to me, the ones that have been enhanced the most with the iPad are 1) replacing my notebook of lecture notes and the portability and easy access to these notes during lectures and the cooperative learning portions of class and, 2) enhancing and streamlining my feedback and grading processes, all without printing out hard copies.

I feel that many educators could benefit from this tool. To implement the use of an iPad, the starting points are the purchase of the iPad along with a few Apps, a stylus, and the installation of a cloud-based storage service. The Apps themselves require minimal "setup time" and are easy to use for professors who are comfortable using a computer. I think that as Apps continue to be developed that are focused specifically on education, that there will be even greater benefits. The areas of improvement I would like to see are with notetaking and organizing tools and a more advanced spreadsheet application that has more features of Excel.

Table 1: Examples of iPad Apps and Other Support Items and their Associated Teaching Uses

Item	Developer	Description	Teaching Use
Apps:			
Notes	Apple (Built-in)	This tool allows you to type notes.	Administrative
Safari	Apple (Built-in)	This is the browser for the iPad.	Administrative (Blackboard, Homework Manager), Textbooks
Mail	Apple (Built-in)	This program allows you to set up mail accounts, including exchange servers.	Administrative
PlainText	HogBay Software	This is a text editor software. It supports connecting to DropBox.	Administrative
GoodReader	Good.iWare Ltd.	This is a pdf reader that supports a wide variety of annotations. It supports connecting to DropBox.	Feedback, Lecturing, Lesson Plans, Textbooks
DocsToGo	DataViz	This is a package that allows you to view and do some editing of these file types: Excel, Word, PPt, and pdf. It supports connecting to DropBox.	Feedback, Lecturing, Textbooks
Air Display	Avatron	This allows to you turn your laptop or desktop into a second monitor.	Feedback, Lesson Plans, Textbooks
Note Taker HD	Software Garden, Inc.	This is a note taking program that supports handwriting, drawing shapes, and typing in text boxes.	Goals, Syllabus
LogMeIn Ignition	LogMeIn, Inc.	This supports remote desktop/laptop connection.	Lecturing
Other:			
DropBox Cloud Storage	DropBox, Inc.	This supports file transferring from desktop/laptop to the iPad.	Feedback, Lecturing, Lesson Plan
Stylus	Boxwave	This allows you more control over handwriting on the iPad.	Feedback, Lecturing, Lesson Plan

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The Rewards and Challenges of a Required Freshman Business Seminar at an Open Admissions, Public University

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ABSTRACT

Begun as an experiment 15 years ago, Exploring Business has become the cornerstone of the undergraduate business degree. Created to meet the needs of our students, the course aims to introduce students to the world of business, the Williamson College of Business Administration, and their future careers. Results indicate that the course is achieving its objectives in terms of providing knowledge about business and careers along with building skills needed for the students' educational and career success. However, the course has also presented a number challenges.

INTRODUCTION

Beginning with the Fall Quarter, 1997, the Williamson College of Business Administration (WCBA) of Youngstown State University required a freshman level business course of all students enrolled in the college. The evolution of this course, "Exploring Business", has been the result of our recognition of the needs of our students. However, it has also been shaped by our limitations in delivery of the course. In this paper we examine the needs for a course of this nature in the business curriculum, with special attention to those that made this course more urgent in our college. Next, the goals of the course and its current design will be discussed. Finally, we evaluate the success of the course and the challenges it presents.

FRESHMEN BUSINESS SEMINARS

The need for a freshman course that provides an orientation to college has been long documented. The National Resource Center for the First-Year Experience and Students in Transition at the University of South Carolina estimates that over 70% of all campuses offer a first-year seminar (Barefoot). While some campuses have long histories in freshman seminars, recent trends in higher education have force many other colleges to consider such courses.

While many campuses have recognized the need for a freshman course, the resulting courses have varied drastically. Some have required courses while others offer the course as an elective. They also vary in the degree to which the course emphasizes skill development vs. socialization. Finally, there have been a number of critics of these stand-alone courses. While these courses serve as a good orientation to campus and college in general, as long as the courses stay on the margin and are not part of the curriculum, they have little impact (Tinto).

A number of campuses have allowed for college specific courses, such as business or engineering. In those cases the courses are often a modified version of the university-wide course (see Belcher, 2010, and Erickson, et.al., 2010 for two recent examples). They are generally offered by a combination of staff and faculty with specific topics addressed by specialist or business professionals.

COURSE ENVIRONMENT

The development of Exploring Business was, and is, heavily dependent upon the environment of Youngstown State University and the Williamson College of Business Administration. Youngstown State University is a comprehensive urban state university with degree offerings at the associate, bachelor's, and master's levels and, most recently, a doctorate in educational leadership. Located in Youngstown, Ohio, the university provides a wide range of opportunities in higher education primarily, but not exclusively, to the residents of northeastern Ohio and western Pennsylvania. In serving the needs of the community and the state, YSU provides open admissions to all Ohio residents with a high school diploma or its equivalent. One consequence of the open admissions policy is the large number of students who are under-prepared for college level work. Over the past 5 years, as a result of placement on the English Composition and Reading Exam, approximately 25% of all incoming freshmen were required to take at least one remedial course.

The majority of YSU students are commuters, with only 8% of the student body residing on campus. In addition, the majority of students, whether full-time or part-time, work the equivalent of a full-time job. The net result of these two facts is a student body that spends little time on campus, and has little time off campus to successfully complete course requirements.

Youngstown State University is located in the heart of what has historically been called the "Steel Valley". Unfortunately, the most significant event in the history of Youngstown occurred on September 19, 1977. On that day, known as Black Monday, the Youngstown Sheet & Tube Co. announced that it was closing immediately. The area's largest employer, this signified the beginning of the end of steel manufacturing in the valley. Over the next 10 years, approximately 10,000 manufacturing jobs were lost and the unemployment rate in the area reached 30% (Wypijewski, 2002).

Today, the outlook for the city is mixed. In 2009, Entrepreneur Magazine named the city as one of the top 10 cities for entrepreneurship (Daley). Unfortunately, in 2011, Forbes named Youngstown as one of the "20 Most Miserable Cities in America" (Forbes.com). This rating was primarily for an unemployment rate that continues to exceed both state and national averages. Finally, the city continues to lag in terms of education. The 2010 Census reveals that Ohio trails the nation in the percentage of adults with a bachelor's degree or higher, 24.7% vs. 28.5%. The situation is significantly worse in the Youngstown-Warren Metro Area, the center of YSU's service region. Here, only 19.5% have achieve at least a bachelor's degree.

The Williamson College of Business Administration offers both Bachelor's and Master's degrees and is accredited by the Association to Advance Collegiate Schools of Business. Freshmen who are interested in business enter the university as pre-business majors. They may declare a business major after they have completed the Tools Course Requirements (English, Professional Ethics, Communications, Math, Economics, Statistics, Business Law, Financial Accounting, and Managerial Accounting) with a 2.5 GPA. As with most business curriculums, undergraduates typically do not begin to take courses in their majors until their junior year.

The net effect of all of these factors is that freshmen entering the school of business are primarily first generation college students, many of whom are underprepared, who are not engaged in their education, and who would not typically have contact with the school of business or their majors.

COURSE GOALS

In 1995, as part of a major curriculum revision, a freshmen course was proposed. The initial development of the course was a team effort with representatives of each of the three departments within the college. The course was developed with two goals in mind. The primary goal of the course was, and is, to retain and prepare academically viable student for careers in business. It was assumed that if students had a clear understanding of the requirements for academic success and the nature and rewards of their intended profession, they would be more likely to succeed academically. However, given the nature of our student body, the team recognized that many freshmen would not be able to successfully complete the Tool Course Requirements and become business majors. Additionally, a number of students, having been exposed to the world of business, would choose to major elsewhere in the university. Thus, given the nature of our student body, retention of all pre-business students was not a goal of the course.

A secondary goal of the course was to set the bar in terms of the requirements for success for students, in both their academic and professional careers. This course was seen as an opportunity to clearly specify the nature of the professional environment and to begin the development of these necessary skills.

Based upon these goals, a number of objectives were developed. These include an introduction to the world of business and entrepreneurship, an introduction to the college of business, and a link to the students' majors/careers.

In addition, key skills introduced include:

- Oral communication
- Written communication
- Group/Team Work
- Information Gathering

COURSE DESIGN

From the initial offering of this course in Fall, 1997, the "Exploring Business Team", representing each of the three departments of the college, has monitored and revised the course on an on-going basis.

An early version of the course was a blended format which incorporated both business content and student success skills. The team recognized the advantage of providing topics typically found in freshman seminar classes as there is no university course of this nature. However, experienced showed that the school of business had neither the expertise nor the resources to provide this content.

The current course design has a number of key components. A major element of the course provides coverage of business content. This coverage is similar to most Introduction to Business courses. In addition, two class sessions are dedicated to meeting the objective of introducing students to the business college. The Dean of the college makes a point of presenting one class session of each section of the course. She spends this time welcoming the students and indicating the opportunities available to them. Her major theme is for the students to begin their career involvement and development as freshmen not as seniors. She spends much of her session emphasizing the need to join professional student groups. A second class, the college majors fair, provides a description of each of the majors offered in the college, including the nature of course work, the professional student organizations linked to the majors, and the career options available from each. Further career exploration is provided through a required assignment outside of the classroom. Each student must complete three activities from the following:

- attending meetings of the professional student organizations
- performing an informational interview
- and/or doing career interest assessments

In addition, a number of business skills are developed through a library research assignment and a follow-up company current events paper. Finally, the course concludes with a group business plan which requires both a formal paper and presentation.

The last design requirement is that the course be offered in relatively small class sizes and be taught exclusively by faculty. Currently, enrollment is capped at 40 students per section. A copy of a current syllabus is provided in the appendix.

IMPACT OF THE COURSE

As indicated above, the nature of our student body makes measurement of retention meaningless. However, a survey of students, both at the end of the course and prior to graduation, has shown that the students find the course to be valuable in terms of achieving the stated objectives. Additional measurable results include the increased membership in student professional organizations of the college.

The highest measure of the success of the course in the on-going support the course has received from the college faculty. While the initial proposal was met with some resistance, once the course was established it has survived a number of curriculum reviews. Most significantly, when the university converted from quarters to semesters, requiring a reduction in the number of required courses, Exploring Business was recognized as making a major contribution to the undergraduate curriculum.

A secondary impact that this course has had is to introduce a model of cross-departmental course offerings While faculty within the college participate in cross-functional teams for a number of efforts, historically the departments had remained quite autonomous with respect to activities in the classroom. While initiating a course of this nature represented a challenge when initiated, it has established a model which has been repeated with the development of several cross-departmental courses.

It is interesting to note that, while not considered in the development of the course, the design meets all four of the keys to retention identified by Vincent Tinto (1999)

1. Clearly Communicated Academic Expectations
    a. Teamwork assignment, oral and written communications
2. Clear Information about Programs and Careers
    a. College majors fair and career assignments
3. Interaction with Faculty, Staff, and Peers
    a. Dean's welcome, College majors fair, advisor presentation at College Fair, attendance at student organization meetings
4. Learning Opportunities that Increase Involvement with Other Students
    a. Team Business Plan

Unfortunately, the success of the course has not been without challenges. The broad range of academic abilities of incoming freshmen at our university presents a dilemma. Designing a course which both encourages and motivates our best students while simultaneously meeting the need of the underprepared students has been problematic. While there is a desire to reach all students interested in business in their first semester as a means of guiding and directing their career, this group contain a large number of underprepared students. So while early versions of this course admitted all freshmen students interested in business, experience showed that majority of the underprepared students were not able to complete the tool courses necessary to be a business major. As a result, rather than admit all of these freshmen, the college has required that the students complete any remedial courses before they can register for this course.

A second concern is the staffing of the course. Early in the development of the course the team committed to using only faculty, no staff, in the delivery of the course. This has presented several challenges. The breath of coverage in this course requires faculty to teach outside of their specialized areas of expertise. In addition, as the only freshman-level course in the college, many perceived that teaching this course carries the implication of equally low status for the faculty member. Consequently, most of the faculty have been reluctant to teach this course.

CONCLUSION

The development and delivery of Exploring Business has been both a rewarding and challenging experience for our college. It has provided an opportunity to orient freshmen students to our college and their future careers. Feedback from graduating students indicate the positive impact of the course. And while it has presented several challenges, it continues to be recognized as a success within the college.

It should be noted that this course was designed based upon the specific needs of the students in our college. Those developing courses at other institutions should assure that their course meets the needs of their environment.

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APPENDIX

YOUNGSTOWN STATE UNIVERSITY
Williamson College of Business Administration

EXPLORING BUSINESS

Business 1500 - - 3 S.H.

Course Description:

The external, competitive, and internal environments of business are examined. The skills required to succeed in business, such as team building, information gathering, communication, professionalism, and an appreciation of career search will be explored.

Objectives of this Course:

Provide entry level students the opportunity to explore business knowledge in preparation for their academic and professional success.

Purpose of Course Lab Fee:

The purpose of the computer fee is to provide access to the WCBA computer labs, primarily for Internet use.

Course Requirements

EXAMS:

There will be a total of three exams in this course. The last one, non-comprehensive, will be given during finals week.

LIBRARY ASSIGNMENT:

During the first few weeks of the semester we will attend a session in the library concerning doing research on the internet. You will be required to complete an assignment that requires the use of the tools learned during this session.

COMPANY CURRENT EVENTS PAPER:

Once you have completed your library assignment, you will write a paper that discusses the current status of your corporation. You will utilize business periodicals/journals identified during the library presentation. A separate handout, including a due date, will be distributed later in the semester.

CAREER-RELATED ACTIVITIES

You are to select **three** assignments to complete from the following:

MYPLAN - CAREER PLANNING PROGRAM:

Instructions for the completion the MyPlan Career Planning assignment are available on the Blackboard page. You are to complete the on-line assignment and print out sections identified. If you choose to do MyPlan, you must also do a debriefing with one of the career counselors. There will be a number of group sessions scheduled in Williamson throughout the semester. In addition, you can schedule an individual session with a counselor in Jones Hall. To get credit for this assignment, you must submit your MyPlan printouts along with the activity form signed by a counselor.

WCBA FUNCTIONS:

You may choose to attend a function sponsored by the Williamson College of Business Administration or a student organization of the College that includes a **speaker** or **formal presentation.** Proof of attendance will be obtained by getting the speaker's or attending faculty member's signature. In addition, you are to write at least a two-sentence summary of the presentation. Forms will be provided to you for this purpose. Completed forms are to be turned in no later than **one week** after function attendance.

INFORMATIONAL INTERVIEWS

If you choose to interview a business professional for one of your outside activities, you must follow these guidelines. The objective of this assignment is for you to learn more about your prospective career. As such, you should select one of the areas of business that interests you and conduct a personal information interview with an individual who works in that area. The individual you interview must be a college graduate in a professional position. To avoid any problems, be sure to get approval of your interview subject from your instructor prior to conducting the interview.

Normally, your interview should be 1 to 1.5 pages long, and include answers to all of the following questions:

1. What do you do in your current position?
2. Describe a typical day.
3. What are the most satisfying aspects of your work? Least satisfying?

4. What is your educational background?
5. What was your first professional job (after college)?
6. How did you go about getting that position?
7. How did you go about getting your current position?
8. What advice can you give that would make my college studies more beneficial?

Feel free to add questions as you see fit or, if a question clearly does not apply, to omit it. In writing the paper, the form should be as a biography of the professional, **not questions and answers.** Make sure you make an appointment to interview the individual you have chosen. Conclude your paper with the person's name, place of employment, job title, and how or why you decided to interview him or her.

NOTE: ALL OF THE ACTIVITIES MUST BE SUBMITTED BY THE END OF THE 14TH WEEK OF THE SEMESTER

MINI-BUSINESS PLAN

You and the members of your group are required to create a hypothetical new business with no more than $40,000 to spend to get it started. You are to prepare an abbreviated business plan, a precise statement of the rationale for a business and a step-by-step explanation of how it will achieve its goals. It will be your responsibility to develop this plan and present it as both a written paper and an oral presentation to the class

Preliminary proposal (40 points)

The instructor must approve the selection of your business in advance. Because similar business ideas between groups will not be permitted, you are encouraged to submit your business ideas for approval as soon as possible. Your proposals will be graded on the thoroughness with which you show you have considered the idea. The key element of this preliminary proposal is the Marketing Plan for your firm. As such, you should include a brief explanation of the following

Requirement: Preliminary Marketing Plan

Identify the tentative target market for your offerings and the strategies you will use to generate customers. Include the type of segmentation you used to identify this market (demographic, geographic, psychographic, and/or product-use/benefits).

a. Describe your specific products or services.
b. Identify a tentative location for your business and why you chose it.
c. Describe how you intend to promote your business.
d. Identify the price you will charge. It must be an amount your customers will be willing to pay while providing a profit for your firm. Be realistic.
e. Include a brief, but specific, competitive analysis. That is, identify competitors by name.

Key: Your marketing plan should show why customers would want to purchase your good or service.

Final Plan (80 & 80)

Your paper, which you will present, will be a mini version of a business plan. Each group member must participate in the presentation and all aspects of the group effort.

In addition, each individual must submit a team evaluation of both their peers and their personal efforts on this project. You will not receive an individual grade if you do not submit your team evaluation.

Grading:

Your paper will receive a single grade (80 points). However, the grade that you receive will be based on the group paper grade and your level of effort in the group. The grade on the presentation will be divided in two. 60 points will be based upon each individual's presentation. The remaining 20 points will be based upon your groups' overall ability to present your concept.

For your presentation, at least one visual aid is required. You may use note cards but you are not permitted to read your presentation. **Business attire is mandatory.**

Written Requirement

The written business plan should follow the layout below. It should include material from your preliminary proposal, updated and corrected.

- Business Description
  - What is the mission of your firm? What type of business you have chosen (manufacturer, merchandiser, or service provider) and what products or services you will offer?
  - Describe the proposed form of your organization; either partnership or corporation. This should include details about ownership percentages and a rationale for the form chosen.
- Industry Analysis
  - You must research your industry. While it is ideal to find articles about your industry, you may use profiles of firms like yours. As this information is from outside sources, be sure to include your sources.

- Target Market Analysis
    - Describe your manner of segmenting the market. You must also include information that you have acquired about your target.
    - Marketing Strategy
        - Include here a revised and expanded version of your preliminary proposal.
    - Competitive Analysis
        - You should include detailed information on your competitors, including their strengths and weaknesses.
    - Name Selection
        - Make sure the business name says something about your business and the specific products or services you provide. Create a name that is ear-catching as well as eye-catching. Avoid Joe, Bob, & Sue's.
    - Samples of flyers, ads, logos, or other advertising tools you will use.
- Operations Descriptions
    - How will you make products/provide services? Describe the actual steps which are needed to deliver the item to the customer.
- Staffing Descriptions
    - A listing of the management team, explaining the rationale for each individual's position based upon their actual experience and competence.
    - If you will need additional personnel, include a discussion of plans for hiring and training.
- Financial Projections
    - While most real business plans include projected Income Statements and Balance Sheets, your requirement is to account for the $40,000 you have been allotted. You need to provide a detailed explanation of how you will spend you startup funds.
- Appendix
    - Include items such as map of location, brochures, business cards, etc.

Format: As a formal paper, your business plan should include the following:

- Title Page (with names of all team members)
- A table of contents
- Page numbers
- Consistent formatting throughout Business Plan:

COURSE POLICIES

Attendance

Due to the nature of this course, attendance is mandatory. You are allowed to miss three classes without penalty. After three classes are missed, fifteen (15) points will be deducted for each subsequent class missed. If you are more than five minutes late for class, you will lose five (5) points for each class you are late.

Class Participation:

Class participation is strongly encouraged, although it is not directly graded.

Missed Exams/Assignments:

It is your responsibility to get assignments and notes for classes missed. Only documented illness, death in your family, or extreme hardship will be considered valid excuses for missing an exam or an assignment deadline. To qualify to get a make-up exam or new deadline, you must notify me **prior** to the time of the exam or deadline to be missed and your excuse must be approved. The new exam time or deadline will be determined in conference with the instructor. Otherwise, no make-up exam will be given.

Assignments turned in on the same day but received after class will be considered late and will be docked 20%. An additional 10% will be deducted per day for each working day the assignment is late. Unexcused missed oral presentations will be automatically rescheduled for the next class session and docked 50%.

Grading **Final Grade**

Requirement	Points	Total	Grade
Exams (4 @ 150)	600	900-1000	**A**
Library Assignment	40	800-899	**B**
Activities (3@30)	90	700-799	**C**
Company Current Events Paper	70	600-699	**D**
Mini-Business Plan	200	⇓ 599	**F**
Total for Course	**1000**		

The *e*persona: Improving online communication, and developing *e*friendships

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ABSTRACT:

This paper examines how college students use the online world as a communication medium, and create *e*personas to navigate that world. The authors surveyed students to determine how Facebook, Twitter, YouTube, blogging and other social media phenomena impact the type of friends they make, what qualities they look for in traditional friends (versus online *e*friends), and indeed, the very definition of friendship in today's world. Findings show that there is a clear distinction between how students define *e*friendships and traditional friendships.

Keywords: *e*-personality, *e*-friend, marketing, organizational behavior, social media, online, friendship, Facebook, consumer behavior, persona

INTRODUCTION

This paper examines the psyche of an individual as it relates to his or her ability to use masks as tools for versatility during in person and online social interaction. These masks allow for certain scripts to be used according to the audience and participants. Notable Skinnerian thought examines the idea of operate subject (author and actor) with the person as subject-actor of the behavior. The affinity of behaviorism with persona in its radical (etymological) sense,s as derived from the theatre (persona = mask = role = behavioral repertoires) is significant, as the person presents a face (mask) to others according to socially organized contingencies- , scripts, norms and rules (Perez-Alvarez, & Garcia-Montes, 2006; Bradberry, 2009). This allows allowing for fluidity of adaptation in multiple settings.

DISCUSSION

The immediacy of communication has evolved significantly over the past twenty years, making the transference of information easier, quicker and seemingly more efficient. Our culture's desire to communicate and interact with "real people" versus the passive consumption of traditional marketing and advertising messages has increased. Because of this, men and women around the world are turning to blogs, Twitter and Facebook for the information they once received from the evening news (Shane, 2001).

But as the saying goes: you have to take the good with the bad, and social media is no exception. When examining social media interactions amongst the youth of today, there has historically been a certain level of skepticism regarding the validity and sincerity of messages transmitted via the internet. Facebook is used by many to stay in touch with family and friends; privacy controls ensure that only selected individuals are able to access certain types of information. Yet, speculation still lurks in the minds of many parents as to what, and more importantly with whom, their children are communicating. Most social media platforms allow for *friend*/*follower* type interactions between the owner of the site and others, with some people securing well over a million friends or followers.

The topic of social media is becoming increasingly more relevant in classroom instruction, as many professors now examine social media as a relevant (and necessary) aspect of successful marketing. As we all know, marketing is not only Business-to-Consumer (B2C), but most often Consumer-to-Consumer (C2C). Consumers post their reviews of restaurants and blog about their fashion interest in order to communicate with their "friends." Traditionally, a friend was a person that was considered to be a loyal confidant that one could rely on in a time of need. Although historically there have been many interpretations of the term friend, it would be safe to say that traditional friendships were often the result of a certain level of intimate communication and/or interaction. Now that social media is such an important and influential part of our culture, this is no longer the case. Users are not only making friends that they have never met in person, but also developing these friendships based on the respective personas that are communicated online. Thus, friendships created using faux-personalities have increased significantly.

For illustrative purposes, we can use the example of an introverted student, Susan, who lacks the confidence to interact with new people when placed in socially driven settings. Let us further imagine that Susan has just enrolled

in her local university and has a strong desire to meet new people by joining a popular sorority. In order to join any sorority at the university, students must participate in rush week, which requires prospective members to attend numerous mixers and networking events with current members. Herein lies a dilemma for Susan -- her role as a socially active college student does not correspond with her innate personality. Susan can decide to honor her desire to participate in less socially driven situations by simply going to class and not attending the social mixers for rush week, or Susan can adapt. Her innate self and her role in different settings, personal and professional, necessitate the design and use of new persona masks. The new persona(s) provide Susan with tools that assist her in developing an ideal self. While Susan's ideal self is the image that is actively projected upon those in her new environment, her actual self, introverted and socially awkward, returns to the forefront when family members and old friends surround her. Correspondingly, Susan may still find it challenging to approach a stranger and strike up a conversation in a social setting, if that social setting is outside of her comfort zone.

For Susan, the persona that she has created can be a healthy coping strategy, because she is aware of both her ideal self and actual self. Problems arise when a person allows a persona to absorb into the foundational blueprint of his or her innate personality, making it difficult to separate the persona from the innate. The mask, per se, is a double-edged sword. It can be used in daily interactions with family, co-workers, and friends, and has the ability to create a successful and often enjoyable environment when the actor utilizes the various masks appropriately. On the other hand; trouble occurs when, for neurotic reasons, one tries to assume a persona that does not fit or tries to maintain a posture that is not sustainable (Hayakawa, 1953; Stevens, 1990; Blake, 1995).

Susan's mask is transferable to online community interactions. Although the interaction occurs online, the creation and maintenance of the persona mask necessitates the same level of attention. The need to adapt to expectations is the same, however, the ability to be creative in how one presents oneself is limitless. Although people are aware now more than ever of faux personas that lurk on the internet, manipulation of the real self is now easier, and often, more tempting.

This method of social and psychological communicating has become a habitual activity among many people today. Media now not only influences behavior, but is impacting the psychological development of the *e*-persona. In a personal essay, Fischoff (2005) examines media psychology as "the social and psychological parameters of communications between people (or people and their organisms) that are mediated by some technology or conduit other than simple air." (2005) The author goes on to characterize this type of interpersonal communication as being "accomplished by way of something other than face-to-face, oral-aural communication." (2005) This persistent form of communication and influence of social media has created an open casting call for personal branding and the development of various *e*-personas. Not only have social outlets such as Facebook, YouTube and LinkedIn provided a platform for individuals to network and communicate, they have invited a gradual, yet incessant number of faux *e*-personas. Creating our personas as products, reflects an increasingly competitive society in which the best way to stand out is to develop an engaging and easily defined image. Yet there is a fine line between putting your best foot forward and creating a new self that could later be exposed (Lee-St. John, 2006; Ekstrom, 2004; Gallagher, 1997).

> The result of all of these online interactions is the result of the unwitting creation of an e-identity, a virtual whole that is greater than its parts and despite not being real, is full of life and vitality. Unfettered by old rules of behaving social exchanges, etiquette, or even netiquette, this virtual personality is more assertive, less restrained, a bit on the dark side and decidedly a bit sexier. (Aboujaoude, 2011)

The individual is no longer subjected to the individual perceptions projected on them by society, but rather has creative control over his/her traits (actual or perceived). These characteristics can be communicated via a multitude of different and distinct *e*-persona masks. Unlike one-on-one interactions that hold those participating in the interaction to some level of personal responsibility; the *e*-persona removes all responsibility on the part of the communicator. Consequently, words and thoughts flow without restraint. Plator writes: "Let people begin writing and they won't deal with the truth, only the semblance of the truth." (360 B.C.E.) He also expresses that "once a thing is put into writing it rolls about all over the place, falling into hands of those who have no concern with it just as easily as under notice of those who comprehend, it has no notion of whom to address and whom to avoid." (360 B.C.E) Unlike traditional writing that may have taken days, months or even years to be discovered by those eyes for which the writing was intended; social media allows for written thoughts to be instantly public. One can pretend to be an expert and provide advice to a stranger in a different country -- all from the comfort of a living room sofa. Instant ratings of services, tangible goods and individuals (doctors, professors, or even the company that

maintains your front lawn) are all acceptable topics for discussion.

The Participants
In order to examine social media and the relevance of social media platforms to the *e*-persona and the adaptation *e*-friendship online, an informal survey was completed with forty marketing and organizational communication students from Woodbury University in Burbank, California, and Chapman University in Orange, California. Participants were male and female students between the ages of 18-45.

Methodology
Two weeks prior to taking the survey, students were asked to keep a social media journal and note the amount of time spent daily on each social media platform. Students were also asked to keep a log of who they communicated with, and note if the communication was of a professional or personal nature. This was done in order to limit the potential for respondents to provide guesstimates and increased the likelihood of more accurate responses to each question. Additional questions that explored *e-friend* interactions were also incorporated into the survey to learn not only how much social media is being used, but also to understand who the online communication was directed towards.

Phenomenological research methodology was utilized to identify trends in the data and identify phenomena. The authors selected this approach as a viable means of interpreting the data, since the overarching goal of this research is to examine experiences from the perspectives of the participants. The authors are mindful of the importance of distinguishing between statistical and qualitative validity and, thus, implemented a phenomenological research methodology.

Findings
When examining the "purpose" of social media, while all respondents appear to agree that they consistently use social media throughout the day, 70% of respondents stated that they use social media for personal reasons.

> *"I follow my sisters on Facebook and tumblr while I'm away at school and can't talk to them as often as I'd like to."*
> *"I mostly use social media in order to contact my friends easily; to keep in touch with current and old friends."*
> *"[I use social media] to socialize."*
> *"I think the idea is always there for a work purpose, but it ends up turning out the opposite."*

Thirty-five percent of respondents estimate that they use some form of social media 3-5 hours per day, while 27.5% admit to using some type of social media 6-10 hours per day. Thirty-two and a half percent estimated usage of no more than 2 hours per day, with 5% stating usage of more than 11 hours per day.

Defining a Friend (Traditional versus e-friend): Common Traits
For this research, the authors developed the term *e-friend* and have defined it as "a friend that you only communicate with online or via social media, and have never met in person." For the study respondents were asked to select the top three traits that they look for in an *e-friend*. Findings show that *sharing the same interest* topped the list at 82.5%; *being a good communicator* and a *sense of humor were* next, tied at 67.5%; h*onesty* accounted for 47.5% of the responses, and *loyalty and trust* scored 35%.

Next respondents were asked to select the traits that they look for when defining a *traditional* friend. The results displayed a different perspective. Eighty-five percent placed *loyalty* and *trust* at the top of their list, followed closely by *honesty* (80%); s*hare the same interest* (50%); *humor* (60%) and *being a good communicator* coming in last with only 25%. It was interesting to see that loyalty and trust appeared to be more of a concern for traditional friendships than online friendships, and *being a good communicator* was of the least importance.

When asked to discuss the aspect(s) of their personal and/or professional life for which social media has been influential, the trend in responses pointed toward *improvement in communication* with friends and family, and *speed and convenience* of communication. It was estimated that communicating for professional reasons represented 25%

of total time spent on social platforms. Personal communication represented approximately 70% of intention for communication through social media platforms.

A free-response question (limited to 150 words or less) allowed for students to express their reflections on the influence social media has had on them both personally and professionally. The authors examined the response patterns of this question and discovered that there appeared to be 7 themes: *Efficient Communication*, *Convenience*, *Staying Connected*, *Online Vs. Offline Worlds*, *Networking*, *Generational*, and *Social Media Issues*. Their answers were revealing and illustrated that students know what social media can and cannot do, as well as the advantages and pitfalls.

Efficient communication: Participants appeared to regard effective and efficient communication as a key factor that plays into friendship development. Participants communicated the difficulty that was associated with communicating online versus in person.

> *"You can be misunderstood online, so it makes me practice good communication."*
>
> *"It has helped me be more specific while communicating because it's not visual so in order to explain a situation or communicate fully I have to be more specific and detailed in my online communicating."*
>
> *"Before really using social media I was far more reserved in voicing my opinions. When using social media I have the ability to say what I'm really feeling without feeling as vulnerable as I would in person. However, since I became used to voicing my opinions through social media, I now find that I feel much more comfortable voicing them in person as well."*
>
> *"I believe that you become more open to communicate because you are not worried of certain physical or behavioral aspects that are involved in face to face interaction. I also believe I am funnier when I am interacting with someone because I am not worried about their reactions or the body language feedback I receive from them."*
>
> *"It has made it easier to communicate, share information, photos, and thoughts."*
>
> *"Because I am a visual artist, people can see my art online and tell me what they think."*

Convenience: Participants see *e*friendships as convenient and entertaining. There are not as many stressors involved with communicating online because the formality of the interaction is limited due to the technology component.

> *"I think the most influential thing is how simple and quick it is to say what you have to say to a person. For something as small as telling your friend to bring drinks before he comes over. Just a quick text message and nothing too formal. It also helps you to keep in touch with people that really aren't too close to you. You don't really need to plan a day to meet somewhere and stay in touch. It's just a quick message on email, Facebook, or even a text message."*
>
> *"Instead of meeting face-to-face or even calling my family and friends I use the Internet (Facebook, tumblr, text, etc.) to completely bypass actually communication with them. It's sometimes easier, faster, and more efficient given my busy schedule."*
>
> *"Social media has influenced me to communicate in a more efficient way. Also, it has helped me to keep in touch with people that are overseas like my bother- in- law and my sister."*
>
> *"Social media has taught me how to abbreviate my written language."*
>
> *"I usually buy things that I need and then buy other things that I see on TV. Communicating more often to friends . Appointments or events are created and communicated via social media due to a smartphone [being] reachable all the time."*

"Social Media has affected and influenced the way I will initially meet or socialize with people. Social Media acts as a "background check," a way to weed out someone with minimal interests, or someone that may not adapt to my ideologies or values."

Staying connected: Participants communicated that staying in touch with family and friends is very important to them. Indeed, many participants indicated that they attended college in a different state/country to the one in which they were raised. Social media allows for continued communication and relationship development and maintenance.

"Having studied at many different schools in different parts of the country, social media aids me in keeping those ties strong with friends in distant places."

"Social media has helped me stay in touch with friends near or far. It's a good way to organize events and let people know you still care about them in your life."

"People who are long distance or that I had a relationship with in the past; social media makes it easier. Also family who I can't often see."

"Due to the fact that all my family and friends are in another country, it is easy to keep in touch with them through a social network."

"I am able to stay in touch with people all over the country and world that I have met through different organizations and leadership conferences."

"Social media is a way for me to keep in contact with friends that I have met in person that do not live in the same area as me. It is also a way to keep in contact with my family that lives all around the world."

"I don't utilize social media for my job, but it has made keeping in touch with friends and relatives extremely convenient, especially since a lot of my family lives overseas. I often find out important current events just by checking on my friends' status updates."

Online (vs. offline) worlds: Although traditional ways of communicating are still widely utilized in the career world, social media and online communication has greatly impacted and changed how individuals communicate, as well as how often they communicate.

"I now am working to complete a bachelor's degree which I hope to use to work for a social media consulting firm. I also discuss topics that come up on social media in my offline life so there is a coexistence between the two. They are in no way mutually exclusive."

"I feel that social media has forced us to communicate more through email and these social media sites instead of face to face."

"I find that I communicate similarly through social media and in my personal/professional life. I like being honest and I enjoy having a voice, whether online or in real life."

"Communicate more online than normally."

"Social Media (Facebook) has had the most impact on me through people posting pictures. Many times you may hear about someone going somewhere or doing something that is totally foreign to you but when they post a picture, then it becomes more tangible."

"I am sharing my ideas, thoughts, pictures, videos, and story on my Facebook page easily."

Networking: With websites such as *Linkedin*, *Facebook*, *Pinterest*, and even *Foursquare*, individuals are provided with additional methods for networking and building professional relationships. The internet, in general has allowed

for a more in-depth communication avenue and participants consistently commented on the benefits of these resources.

> *"Professionally, it has helped me build a greater network."*
>
> *"Made it easier to get to know someone."*
>
> *"Social media has helped me to keep in touch with friends easier, especially older friends or friends I don't see often face-to-face. I think it's helped the way I communicate because chatting online has allowed me to become closer to many of my friends, especially at the beginning of the friendship."*

Generational: Today's students have grown up with social media so new technology *is* "traditional" to them, however the younger generation is not the only group participating in online communication. Social media has become a society in its own right. Users from ages 4-99 are learning effective social media language and shorthand. Because of this new generational trend, some participants felt that social media was in fact, making them less social.

> *"Social media affects the way I communicate greatly. The popularity of social media has changed the way my generation communicates as a whole and is an inextricable part of our communication practices."*
>
> *"Social media has influenced the way I connect to people as well as how I utilize and consume media. As far as social media sites, I use YouTube the most to participate in the discussions about particular videos."*
>
> *"Learning to get right to the point. However most of the time 150 words does not cut it. In most cases it has to be in 140 characters or less. Sometimes, and more often then most, it needs to be a little more lengthy. The interaction that has sparked over the last few years mainly involving Twitter and Facebook has sparked us as a society in new ways. I believe that interaction will one day be on a digital frontier and this is only the beginning."*

Social media issues: Social media has benefits as well as threats. Participants generally acknowledged that they approached social networking with a certain level of suspicion. Many participants even noted that the increase of social media has made them *less* social.

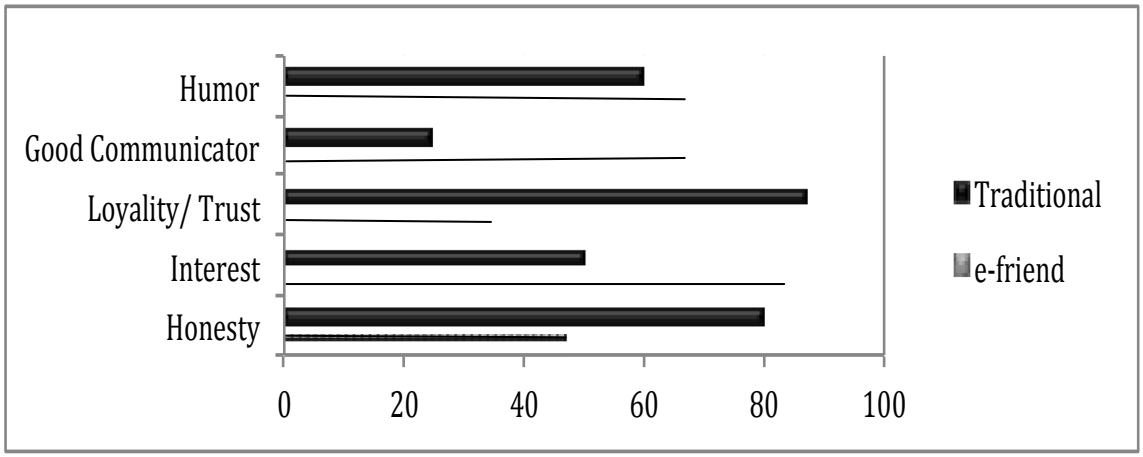
> *"Because of texting and IM I use abbreviations when I talk face to face with friends. I also find myself and friends sometimes having to explain what was meant in a text or IM because people read other meanings and emotions in our words than we meant for them to."*
>
> *"I don't really know that it has, I personally do not have Facebook or Myspace or any of the above. However I do communicate a lot through texts and email. I often wonder when I lost my ability to communicate verbally with my boyfriend who at times happens to be only five feet away from me."*
>
> *"All my friends are constantly on their cell phones texting other people while we are hanging out and it makes me so mad. I actually end up communicating more because of it."*
>
> *"It's made certain personal relationships worse and/or much less personal. Some friends have now become just e-friends"*
>
> *"I don't put much information about myself on there. Because everybody wants to know your business and not their own."*
>
> *"I am very careful with what I put up online because I know it will affect how people will treat me in the real world."*

"Only one of our respondents admitted to not using social media, and another said they used it to catalog the "random things I encounter throughout my uneventful life."

Analysis

The findings suggest that criteria differ for traditional friends and *e*friends, reflecting the disparity between how each type of friendship is formed, and the nature and intensity of appropriate intimacy. The characteristics important to either kind of friendship are determined by its *purpose.* The findings also show trust and honesty are important traits for a traditional friend, yet desirable traits for an *e*-friend are vastly different. According to students (see graph 1), sharing the same interest and humor are the more important traits when considering an online relationship. This is both interesting as well as a bit disconcerting, as honesty only secured 47.5% of the vote. This data supports the assertion that *e*-persona development is now easier than ever, and seemingly a more desirable method for those who are more introverted and socially awkward. If one has a sense of humor and effectively communicates that they share the same interest (whether it's true or not), their ability to capture the attention of others online is limitless.

Figure 1: Top Three Desired Traits: Traditional Friend vs. *e*-friend (reported as percentages)



CONCLUSION

When analyzing the data collected for this study, the authors are mindful that phenomenological research methodology can be robust in indicating the presence of factors and their effects in individual cases, but must be tentative in suggesting their extent in relation to the population from which the participants or cases were drawn (Lester, 1999). Additional studies are needed to determine whether the findings of this study are applicable to social media participants globally. Another limitation to this study is the demographic make-up of the participants -- university students matriculating at Woodbury and Chapman University. Both institutions are small private universities in southern California.

It would be interesting to see if the preferences and habits of university students matriculating at larger public institutions would display the same trait preferences and usage habits. Yet, when examining student understanding of social media and the pros and cons of this technology, it appears that we need not overly worry about students. Fears regarding student addiction to online communication and/or their ability to communicate are appeased by the results. This survey points to the idea that students appear to understand both how to use social media, as well as its limitations.

Implications of this research suggest that the traits measured differ when comparing an *e*-friend to that of a traditional friend. Moreover, the idea that individuals are better equipped to develop certain persona types as a means for developing and securing friendships online is supported. As honesty is not as important as sharing the same interest, trust is less critical in friendship formulation while humor is more critical. Additional studies are needed to examine these phenomena.

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Reducing Textbook Costs: An Unconventional Approach

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ABSTRACT

While college tuition and textbooks continue to rise and state appropriations decline, students shoulder the growing financial burden. The authors examine the reasons for higher textbook costs, legislative inroads to control textbook prices and alternatives to purchasing. A unique way to lower textbook expense and directly involve students in the learning process is to have the students write the book or certain parts that improve comprehension. How the student-written textbook project was initiated, customized, continued into future semesters and reduced costs are discussed. Students responded to survey questions giving an overall rating to the student-written textbook, comparing it to commercial textbooks and whether the project should continue.

Keywords*:* business law, e-textbook, electronic, textbook, tutorial

INTRODUCTION

In 2011-12 students paid, on average, $1,168 for textbooks and supplies (College Board, 2012). One survey of students at Daytona State College reported that 29% of their students did not purchase a required textbook at least once due to cost, 24% blamed textbook prices for taking fewer credit hours, and 15% said that textbook expenses was an influence on their choice of major (Graydon, Urbach-Buholz & Kohen, 2011). This is in addition to escalating tuition costs. Tuition and fees increased for the past decade (2001-02 to 2011-12) at four-year public institutions at an annual inflation-adjusted rate of 5.6%. This reflects a more rapid increase than during the last two decades. The average increases in tuition and fees at four-year public colleges and universities have risen more than for private nonprofit four-year colleges. This is partially the result of a deteriorating economy which has forced states to reduce appropriations to public four-year institutions. So while families face a poor economy and erosion of their wealth caused by low interest rates and declining stock markets, public colleges and universities are ever more reliant on tuition dollars (College Board, 2011).

Rising textbook costs have been the subject of much debate. A handful of companies sell almost all primary, secondary and higher-education textbooks. To get an idea of scope, at colleges and universities 19 million students spent a staggering $4.5 billion in 2010 on textbooks (Kinsley, 2012).

The focus of this paper is to examine a student-written textbook for an introductory business law course. We will look at student involvement, copyright issues, cost savings, student reactions, error correction capability as well as customization options for state and local issues. First, the authors will briefly examine the current model for textbook selection. Second, the authors will look at the factors that affect the cost of textbooks as well as recent legislative solutions. Third, we will examine various lower-cost alternatives. Fourth, we will introduce the solution of a student-written, self-published textbook. Finally, we will draw conclusions and offer suggestions for future research.

TEXTBOOK SELECTION

The current model for choosing textbooks is problematic. Imagine an economy where other people chose what goods and services you should buy. This would mean that users (buyers) would receive neither the benefits of nor the efficiencies inherent in a capitalist supply-and-demand structure. Even more than that, users may find features they do not want or elements that are absent. This argument is somewhat flawed when applied to textbooks because presumably students are not equipped with the knowledge to make the selection. This scenario is comparable to the prescription drug market where healthcare professionals select the drug the patient has to purchase. In general, when the selector is not the actual purchaser, the tendency is to make purchasing behavior less responsive to price increases (Koch, 2006).

COST OF TEXTBOOKS

A 2005 General Accounting Office report found that textbook prices had increased 186% between 1986 and 2004 while general inflation had risen only 72%. The report indicated that the primary reason there has been a rise in textbook prices was the result of increasing demand for products that accompany the textbooks such as CD-ROMs, web-based tutorials, self–assessment tools, videos, etc. (GAO, 2005).

Textbook publishers, citing development costs, would typically include these supplements as part of a textbook bundle. The practice of bundling and the resultant complaints are similar to those articulated by customers of the cable television industry. The increased use of cost-saving adjunct faculty may impose additional costs on students. In general, adjunct faculty require greater support and the bundled instructional supplements that accompany a textbook help respond to that need. (GAO, 2005; Koch, 2006). Thus, colleges and universities pass along part of the cost to support part-time faculty via higher textbook prices (Koch, 2006). Supplemental materials have also become more popular with an increasing population of students in need of remediation (Mui & Kenzie, 2008).

The GAO report also indicated that the more frequent revision cycle for textbooks has also contributed to increased costs. A perfunctory examination of consecutive editions affirms that many revisions are more about competition from used books than about inclusion of new-information that rises above mere cosmetics (Horvitz, 1965). After the first year of publication, the secondary market of used textbooks flood sales outlets with enough used copies to significantly affect the sale of new editions. Because publishers make no money on the sale of used textbooks, they will print a new edition and discontinue sales of the previous edition. The bulk of the used textbook market is controlled by a handful of textbook publishers and wholesalers who together possess the ability to eradicate the competition from previous editions. This is in contrast to say car manufacturers who are unable to simply eliminate the used car market (Koch, 2006).

Finding textbooks has become much easier with a number of search engines that help students find the best price for a current or older edition (e.g., affordabook.com; bookfinder.com, bigwords.com). While currency of material and error correction may arguably be motivators for the publisher to print an updated version, the typical update has only marginal value to the student. Upon publication of the 13th edition of Shakespeare, one parent understandably took issue with whether the playwright was still revising his works.

The GAO also noted that publishers sell identical textbooks in other countries at lower prices. According to publishers, the cost of printing and selling a book overseas is less expensive and that they base the price they charge on local market conditions and competition. Publishers have strong contractual relations with their overseas partners to prevent them from bringing the lower-cost texts back into the U.S.

Reimporting textbooks sold overseas has become much easier for two reasons. First, because of entrepreneurs (sometimes students) who created web-based companies that sold textbooks from abroad to students in the United States. Second, a 1998 Supreme Court Ruling that said federal copyright law does not protect U. S. publishers from having the products that they sold overseas at a discount from being shipped back and sold to students in the United States (Carbaugh & Ghosh, 2008).

Because of the high cost of textbooks, between 2005 and 2007 some 34 states had proposed more than 100 bills related to textbook expenses (USDE, 2007). In July 2008, President Bush signed into law broad educational requirements under the Higher Education Opportunity Act–H.R. 4137. The purpose of the bill is to get more pricing information into the hands of students and instructors and require supplemental materials to be unbundled. Now, for example, if a publisher wants to sell a textbook and DVD together, it must also sell the book and DVD separately. In addition, the bill encourages colleges and universities to provide institutional programs for renting books or buying books back, as well as guaranteed buy-back programs, and other cost-cutting strategies.

A textbook purchase allows a student to participate in a bookstore buy-back program. Unfortunately, textbooks depreciate at an alarming rate. After a typical semester, about 125 days, the price will have dropped by 50% or more depending on condition (USDE, 2007). Professors may adopt an earlier edition of a textbook to reduce costs for the students. Earlier editions sell for a fraction of their newly revised brethren. Faculty may supplement critical changes with handouts. In lieu of purchasing, student may have the option to rent, use electronic textbooks or gain access to

open educational resource remedies.

OPTIONS TO PURCHASING

Renting

One option to outright purchase is to rent textbooks. While this may lessen the cost, rental agreements often have restrictions on how the students may use the book. It certainly reduces the likelihood that a student will keep, or even be allowed to keep, the book for future reference. Most rental contracts are only active for one term (typically 125 days for a semester and 90 days for a quarter).

Like the music and media industries, the Internet is transforming the textbook industry. A number of entrepreneurs have come to embrace the Netflix business model where students can go bargain hunting beyond their campus bookstore (Gorski 2010).

Many college bookstores, who have partnered with for-profit book sellers such as Follett or Barnes & Noble, did not have to invest in setting up a rental program which can be a very expensive alternative. Students whose college or university does not partner with a for-profit book seller can still take advantage of rental sites (e.g., Rent-A-Text.com, bookrenter.com, collegebookrenter.com and campusbookrentals.com). A number of the textbook rental search engines were created by price-frustrated students (e.g., booksatyale.com or booksatumd.com). Not to be outdone, one of the largest publishers, Cengage Learning, began renting directly to students in 2010 and is expanding its online inventory (Gorski, 2010).

Rentals, while less expensive than outright purchase, still face the frequent influx of new editions which typically rent for more than twice the amount of their earlier-edition counterparts. Another drawback to purchasing or renting is the ecological impact of a paper-intensive product whose life cycle is relatively brief. One of the popular attributes associated with electronic-textbooks is that they are perceived as environmentally friendly.

Electronic-Based Textbooks

Electronic textbooks (e-books) currently come in three different configurations, textbooks converted to PDF files, textbooks with embedded links to external material, and textbooks that provide an interactive experience. With the introduction of e-books, publishers worry that a Napstar-like loss of content, their largest asset, will diminish profit margins. New companies have sprung up that offer encrypted platforms of distribution that have alleviated some of this concern (Young, 2009). The biggest push to digital migration of textbooks came about with Apple's introduction of the iPad.

In January of 2012, Apple, which has a long history of working with education, announced its gambit for its share of the $8 billion dollar higher education textbook market with the introduction of iBooks 2 app. In a press release, Philip Schiller, Apple's senior vice president for worldwide marketing said, "With iBooks 2 for iPad, students have a more dynamic engaging and truly interactive way to read and learn." Some of the features include the ability to highlight text, take notes, create study cards as well as interactive images, embedded video, and study aid tools (Lytle, 2012). In addition to iBooks 2, Apple also introduced iAuthor which allows Mac users to create their own textbooks incorporating video, interactive diagrams, audio and imported text which they can then publish in the iBookstore (Lazarowitz, 2012). The price of these books will be around $14.95 which will be popular with students who have spent ten times that amount for a single book, but publishers will need to get use to Apple's 30% commission on all sales (Chen & Wingfield, 2012). Pearson, McGraw-Hill and Houghton-Mifflin have all introduced iTexbooks. In addition to iBooks 2 and iAuthor, Apple expanded its popular iTunesU to K-12 (Education Marketer, 2012).

Because students cannot physically share e-textbooks there is no resale to recoup their initial costs. The cost of individual devices (such as an iPad) for each student may be prohibitive. Several in the industry have called for device agnostic e-books so students can use them on any device (Kinsley, 2012). According to an article in the Chronicle for Higher Education, for an e-book to be successful in the textbook market, a standard will need to emerge so that adoption of a digital format does not result in more work for the faculty member and his or her students (Young, 2010).

In 2009, Daytona State College began a two-year experiment implementing four textbook distribution models. Some

of the major issues they had with e-textbooks included issues with Wi-Fi access, problems with publishers web site and the functionality of the e-reader (e.g., being able to toggle between portrait and landscape) and unreliable connectivity. Several positive aspects included students having their textbooks in hand the first day of class, portability, keyword search features, cost savings (admittedly at variable amounts) and the positive environmental impact (Graydon, Urbach-Buholz & Kohen, 2011). Alongside the paper-saving, waste reduction positives that e-textbooks facilitate, they also offer a boon to auditory learners. ESL students can use the auditory function of their tablets to either substitute or bolster their own reading of the text (Larson, 2002).

Open Educational Resources and Free College Textbooks

Previous generations of students saved their college textbooks as markers of accumulated knowledge. Today, textbooks are no longer laudable touchstones of accomplishment, but a disposable resource. Frequent editions quickly make them obsolete and the Internet has changed attitudes about the very nature of printed materials (USDE, 2007).

Amazon, who recently reported that its total sales of electronic books exceeds that of print book sales, is able to control distribution by offering their books only through their own proprietary software via the Kindle or the Kindle app (Hamblen, 2011). In addition, Amazon will publish 122 books this coming fall in both e-book and traditional forms putting the retailer in direct competition with New York publishers who also serve as Amazon's most prominent suppliers (Streitfeld, 2011). The nearest alternative to skipping the publisher for textbook writers is the ever-more popular open educational resource textbook.

The proliferation of open educational resource materials is, in large part, due to the creation of Creative Commons a nonprofit organization founded in 2001 (creativecommons.org). Creative Commons allows authors to offer their work for modification and distribution while keeping whatever rights the author chooses to maintain. This is much less restrictive than traditional copyright which protects the work from all alterations and distributions not sanctioned by the copyright holder.

Open educational resource materials has received financial backing and promotion by the Saylor Foundation (saylor.org) which offers free online courses and textbooks and Twenty Million Minds Foundation (20mm.org) whose mission is to support making education more affordable. Web sites such as Connextions (cnx.org) and Merlot.org offer ways for faculty to selectively choose learning modules along with the ability to add or edit content. Massachusetts Institute of Technology's OpenCourseWare (http://ocw.mit.edu) offers course content such as lecture notes, videos, etc. free to the public for virtually every course they offer.

Boundless Learning is another purveyor of free learning materials. Boundless creates a textbook from an array of open educational resources such as Wikipedia, government publications, Creative Commons' licenses and other free sources (Novack, 2012). Unfortunately for Boundless, three major publishers filed a lawsuit in federal court claiming that Boundless was creating 'shadow-versions' of their copyrighted works (DeSantis, 2012).

A number of professors have written their own textbook and made it available directly to their students either free of charge or for a modest price (Baker, Miller & Tucker, 2011). Another avenue to provide students with a quality learning experience and eliminate the angst of steep textbook prices is to let *them* write the book.

STUDENT-WRITTEN TEXTBOOK

At our university, we created a student-written textbook for the Legal Environment course. The motivation to start this project arose because we observed students who simply could not afford to purchase the assigned textbook. A number of these students were already recipients of need-based scholarships and yet struggled with their studies primarily because a lack of funds forced them into what we saw as an untenable position. The Legal Environment course is a support course required of all business and accounting majors. The most recent purchase price available for this course's official textbook is $252. If we multiply that by 280 (the average enrollment during a typical academic year) the price tag for textbooks alone is $70,560.

The participants included our own undergraduate and graduate students. The obvious and considerable disadvantage was that students are neither lawyers nor have they attended law school. Thus, they are learning as they write. Still the subject is not "rocket science." It is a beginner's course with no prerequisites. We are fortunate to have excellent

students (average 27+ ACT) and for the most part, they are good writers. The students know the audience because they *are* the audience. The students were motivated by their dislike of high-priced textbooks and as with most people their age they are "tuned in" to the idea of free material. They were also willing to try something a bit avant-garde. Our university encourages faculty-student collaborative learning and because we do not have any science labs in the business area, this presented itself as an interesting experiment.

We started the project in the summer of 2008 and students worked alone or in pairs. They worked from outlines created by the faculty member. They used their own notes, the Internet, and various business law textbooks as resources. Obviously, the students were strictly forbidden to copy, but because the law in this area is generally known in the legal community, there did not seem a need to footnote well-known legal material. Students turned in drafts, got comments, and then turned in final drafts. Students in subsequent semesters have improved the chapters by redrafting and by creating examples, cases, and tutorials.

The students signed a copyright release that allowed others to revise the materials and for students to use the final product. We listed anyone working on a chapter as a contributor, regardless of how much of their product was incorporated into the final version.

Our school advocates internationalization throughout our curriculum so we encouraged our international students to write about the laws of their own country. One student wrote a very good piece on Indian labor law, a second on the Chinese court system, and a third on Vietnamese courts. Others have written general material about the law of their home country.

The chapters are available at no cost on the school's website. Students may also acquire a paper copy for the cost of printing (around $25 for a 400-page book). The student-written textbook has been redone, expanded, and revised over several years. Currently, the text is in its fifth edition. It is a good fit for the class as taught and is written in a language that students understand.

Unlike textbooks written for a national audience, our text (with students predominantly from Missouri) has a chapter on the courts that explains both the federal *and the Missouri courts*–with examples of other state courts. Generally, traditional texts have little on particular state courts. In a chapter on landlord-tenant law, the text explains the general law of the area as found throughout the United States; but it also includes the peculiarities of Missouri landlord-tenant law. It also references the building and apartment code of the city where the university is located. Thus, the text provides immediately relevant and useful information to the student.

After the first edition was published in the fall of 2009, the instructor conducted a survey on the efficacy of the textbook. Of the 43 respondents answering questions on a five-point scale with one being poor and five being excellent; students were asked three questions. Question one was about their overall rating of the textbook. Question two asked them to rate this textbook relative to commercial textbooks they have seen in other classes. Finally, question three asked whether they thought the project was worth continuing. The responses were very encouraging.

To the first question one student rated the textbook experiment as poor, ten rated it as average and 32 rated it as above average. For question two, three students rated it below average compared to commercial textbooks, seven rated it as comparable, and 36 rated it better than similar type textbooks. The reasons they gave were primarily that it was easier to understand (23 responses), it was less expensive (11), matched well with the lecture (8), and the rest ran the gamut from liking the examples to the fact that it was well written. For question three, one student said the project was not worth continuing, three students said maybe, and 39 thought the project was definitely worth continuing. The instructor also asked the students what they would like to see changed or added. The students responded that they wanted more examples, questions and problems to help them study. The rest of the responses were about formatting issues, typos, and grammatical items.

Generally, the students were pleased with the content, as well as the price. At the present, the text is in its fifth edition. The students have steadily improved the textbook and it will continue to evolve in future semesters. In the current semester, more sample problems and some hyperlinked tutorials are being added by the students. While editing was done earlier, we assigned a few students (some working for one of the instructors) to examine the books for typos, poor grammar, badly worded sentences, and charts or textboxes that were out of alignment.

Faculty do not have to tackle an entire textbook to boost student engagement. Writing a chapter or a few pages on a tough topic would be useful not only for the writer, but for the students who will read it as a secondary source later. Another way to engage students is to have them create tutorials to go along with the current text or as stand-alone learning modules. These are particularly useful with difficult topics. Once the student has satisfactorily explained the subject matter, the student creates one or more questions to test the user's knowledge. If the student user answers the question correctly, they are sent on to the next tutorial, if not they go to a tutorial that provides additional explanations and examples.

CONCLUSIONS

Prior to the invention of movable type, scribes copied each tome by hand. This labor-intensive process meant that only the wealthiest of patrons could afford to own a book. The introduction of movable type radically altered the landscape and crushed the monopoly the wealthy had on the dissemination of culture (Godine, 2011). Personal computers brought about the capacity for anyone to write and print a book. As reading devices drop in price so more of the public has them in hand, this will likely be the catalyst needed to shake up higher-education's publishing world.

The authors do not suggest that all courses would lend themselves well to a student-written textbook or that all e-textbooks should be free. There is, however, value in having students be a part of the learning process. As many faculty discovered during their initial years in teaching, nothing helps solidify the understanding of the law as teaching it. Perhaps writing about a particular subject matter can also have a similar effect to understanding the subject matter. There are modifications between the model of having students write the book and the model where the professor writes the book.

Instead of trying to do a full-fledged textbook, faculty might consider whether students could write partial chapters or tutorials relating to such things as difficult-to-understand subject matter (which might then be useful to other students in later semesters).

More generally, because faculty make the decisions about the required textbooks for a class, it would seem that they should be concerned with both the quality and the cost to the students for learning materials. With the rise of digital e-book readers, there should be an increase in lower-cost and even free textbooks. It may even be possible to have students, if they are in need, look at a number of sources to learn the materials. Learning the material in different ways may increase the ability of the students to understand and retain the information.

Fruitful research beyond the scope of this paper would include conducting learning assessments of student-written books, chapters or other significant assignment associated with replacing all or part of a commercial textbook.

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The authors have provided the following link to the textbook as described in this paper:

http://brycej.sites.truman.edu/free-legal-environment-textbook-chapters/

Using Video Capture Technology to Enhance Student Performance

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ABSTRACT

A variety of technological advances have made it easier to deliver course content to students both in person and in archived formats. Lecture capture technology (LCT) platforms enable instructors to capture and post class materials with very little effort. Several studies have shown that students strongly favor the use of such technology. These facts help explain why the use of LCT has increased dramatically in recent years. This paper examines the experience of two business faculty members who used lecture capture technology in their classes. In addition to promoting the use of LCT, we also examined the relationship between lecture capture viewing and student performance on extra credit quizzes. The results suggest that while offering incentives to students did increase viewing of lecture captures, enthusiasm quickly faded, and the impact on quiz performance was not significant. We conclude with lessons learned and suggestions for future research and practice.

Keywords: video capture, student performance

INTRODUCTION

Gone are the days of blackboards and chalk. Today's classroom includes many technological advancements, and many schools offer courses online or in a hybrid format. Audio enhancements are becoming more common, and the use of video capture is on the rise. There are "smart boards" for capturing the day's written lectures and learning management systems to provide easy access to additional resources and communication outside the classroom. And now there are a number of lecture capture systems, such as Echo360, Tegrity, and Accordent, which allow the entire classroom experience to be recorded and reviewed by students and faculty at a later time. This paper presents the results of a project designed to promote student use of lecture capture technology and to measure its effects on learning outcomes.

PREVIOUS RESEARCH

The use of lecture capture technology (LCT) has increased dramatically in recent years (Zhu & Bergom, 2010), and several authors provide overviews of LCT and their experiences using it. Given the relative newness of the technology, current studies often exhibit completely contradictory results. Below are sample studies broken into positive, negative and neutral categories on the impact of the technology. First, the negative outcomes. A column written by an anonymous author in *Business Education* in 2011 records the reasons faculty do not use the new video capture technology. Results of a survey found the reasons for not using included fear of decreased attendance in their live classes, lack of infrastructure and support in case of problems using the technology, and the uncertainty of the market. Basically, faculty were afraid of investing time in learning new technology which would not be supported after a short period of time because a competing product could be supported in the near future. This was an issue at our institution as one product was used for three years, then over the summer term, technical support disappeared in favor of an alternative product.

Cooke, et al. (2010) found that students not surprisingly preferred live lectures to recorded lectures. Recorded lectures were found useful as an introduction to the university for younger students. Bollmeier, et al. (2010) looked at both the number of views and the actual time spent viewing videos. They found no enhanced performance related to watching of videos or time spent watching videos, which is not an encouraging finding given the time required to prepare presentations for video recordings.

Positive responses were found by many other researchers. Although several studies have shown that most students strongly favor the use of podcasts or other LCT (Bongey et al., 2006; Fernandez et al., 2009), what is the impact of their use on learning outcomes? Shaw et al. (2011) found the use of lecture capture-supported techniques resulted in significantly higher student test scores, than achieved historically using traditional techniques without capturing the lectures. Rogers et al. (2011) found similar results, and positive student outcomes were reported using lecture

capture technology from both quantitative and qualitative data analysis. Vajoczki et al. (2011) found not better student outcomes, but increased course satisfaction and better retention of knowledge in courses with traditional lectures augmented by lecture capture. DeSantis et al. (2010) started using video capture technology in their business courses to accommodate student athletes who had to miss class due to games and other events. Although the technology was originally adapted for a subset of students, other students found it useful as well. Dey et al. (2009) focused on the importance of seeing an image of the faculty member, rather than just the PowerPoint slides. Live groups looked at the professor more than the video group. When comparing video techniques, findings suggest that more personalized images are better. Interestingly, they found students captured more knowledge in video vs. when students were in a live classroom. McKee et al. (2008) found that students had a limited attention span. They emphasized that the recordings, be they video or audio, had to "easy to edit" technologies for them to be useful, including both videocasts and podcasts. This finding is echoed by Forbes (2011) who suggests a better use of lecture capture technology is to record small pieces, rather than entire lectures. He further suggests that students themselves enjoyed creating reflective podcasts of video captured material. Smith et al. (2011) used the technology in a different way — rather than capturing faculty lectures, they captured student presentations. Students viewed their presentations made using lecture capture technology, and it was helpful to them to critique themselves and improve in future presentations.

Owston et al. (2011) traced student viewing of captured lectures and compared the viewing patterns to student performance. Interestingly, they found that high achievers view the videos less than low achievers. This may be because they have better study skills as they tend to fast forward through the material with which they are familiar.

In the institution of the authors, an older technology (Camtasia) has been replaced by a newer, easier to use technology (Echo360). From the users' perspective, the major advantage of Echo360 is that it is seamless. Camtasia required an external drive, and the instructor had to follow certain prompts to start the recording. In contrast, Echo360 is scheduled remotely, and does not require any additional action on the part of instructors. In our case, the recordings begin automatically and are stored on a remote server, making it impossible for the instructor to forget to activate the recording.

RESEARCH DESIGN

Despite the fact that students favor the concept, anecdotal evidence in our classes suggests that relatively few students actually make use of recorded lectures. Students have many conflicting demands on their time, and study tools, such as review of video recap of a lecture, all too often fall to the bottom of the activity curve, and few use its capabilities. Upon closer examination of published studies, we find that most statistics regarding LCT are based on students self reporting — that is, the students' perceptions of the technology rather than the actual impact (e.g., Veeramani & Bradley, 2008).

Given the apparent gap between the availability of LCT and the actual use of captured lectures, we designed a small research project that sought to achieve the following objectives:

1. Perform a systematic analysis of if and when students access the captured lectures.
2. Explore methods to increase student use of captured lectures.
3. Evaluate the impact of LCT on student performance.

In brief, the objectives were accomplished as follows. In addition to using video capture, both faculty members made extensive use of a learning management system for posting notes, sending email, and interacting with students on a regular basis. In fact, lecture notes were activated through this learning management system, in our case Blackboard. We monitored the access to course capture through Blackboard. This is easily done using the tracking tools within Blackboard. We then promoted access to the captured lectures to one group of students and did not promote the lectures to a second class of students who we used as a control group. We then assessed the impact of the LCT through before and after surveys, as well as student performance on extra credit quizzes given to the students. Further details of our methods are discussed below.

Each of the co-authors taught teach two sections of the same class in the fall 2011 term. The course is required for all students in the Bachelor of Science in Business Administration degree program. Our first objective was to systematically observe when/if students access the course captures. One study found that students tend to access the material right after the lecture and just before exams (Copley, 2007). Do these results hold for our students? These data were collected by placing links to course capture materials in specific areas of our Blackboard course sites.

Blackboard has extensive tracking functionality, enabling us to monitor precisely what is being accessed, by whom, and when.

The second objective of the project was to study ways to promote student use of captured lectures. To accomplish this objective, each instructor developed ongoing quizzes for their own classes. We administered short, three-question quizzes on course material throughout the semester. Answers to the quiz questions were easily answered by reviewing clues revealed in the captured lectures; however, the answers may not be as obvious to those who have not reviewed the lecture. The quizzes counted for extra credit in all of our classes. Second, we continued to promote the use of Echo360 by providing weekly reminders to the students and offering multiple demonstrations of the technology in one section. The other section (one for each instructor) was given access to the same quizzes, but not the same amount of reinforcement, thus served as a control group.

The third objective of this project is to evaluate the impact of LCT. This objective was achieved by comparing the quiz performance of students in the "active promotion" sections versus the "passive information" sections. While it is not feasible to control for all variables in this situation, this experimental design enabled us account — to some extent — for factors such as instructor ability/style and class day/time. This approach is similar to the recent (and ongoing) work of Cyr (2011).

Hypotheses

The following hypotheses indicate the results that we expected to see from the study:

H1: *Given extra motivation, students are more likely to use course capture technology.* To test this hypothesis we measured average number of accesses ("hits") per week prior to the extra credit quizzes being offered, vs. the average number of "hits" per week once the quizzes were offered. This was independent of whether students took or how well they performed on the quizzes.

H2: *Students will use accessible technology if it is made available.* We did not collect any hard data to test this hypothesis, but instead relied on anecdotal conversations with students.

H3: *Students performance will be enhanced by using course capture technology.* To test this hypothesis we measured the average quiz performance of those who used made at least once access to the technology vs. those who did not use the technology, only evaluating those who attempted the quizzes. We had originally planned on comparing the performance of two sections from each instructor, but this turned out not to work for several reasons.

Data analysis

In one professor's case, five quizzes were given for extra credit. Students were given 24 hours to review the Echo360 recordings prior to the quizzes being made available. Students had to agree that the outcomes of the assessments were completely voluntary to comply with Institutional Research Board (IRB) rules. Interestingly, only 70% of the students agreed that they would participate, even though it simply required them to check a box before proceeding to the quizzes. Of the sixty-six (66) students who agreed to take the extra credit quizzes, on average a little over 40% took the first four quizzes during the allotted time frame. About half that number (20%) took the final quiz, a drop off probably due to exam fatigue and the fact that the quiz was offered the day before a holiday (Thanksgiving).

Some other interesting data can be generated by viewing participation. These data are summarized in the table below:

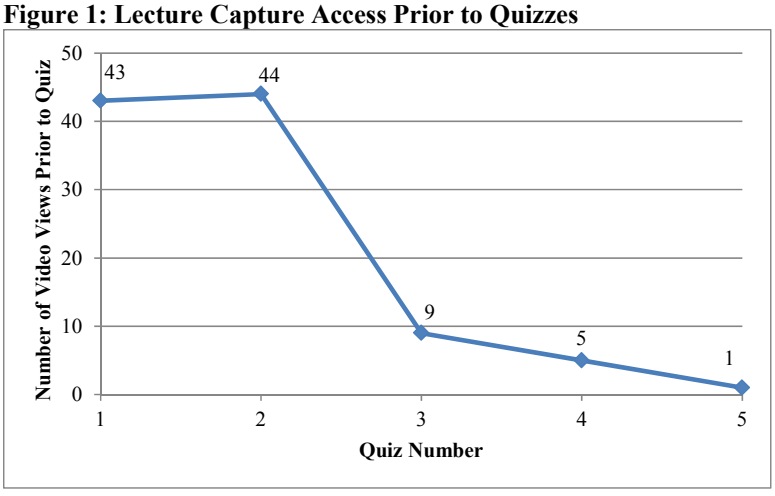
Table 1: Number of Extra-credit Quizzes Taken

Quizzes taken	Responses [%]
0	18 [27%]
1	11 [17%]
2	12 [19%]
3	12 [19%]
4	8 [12%]
5	5 [8%]

These data suggest that the perceived reward (a maximum of 15 points out of 500, or 3% of a student's grade), was not enough of a motivating factor to even participate in the study. Overall, only 27% (25 of 95) of students even bothered to take more than two of the five extra credit quizzes, lowering the possible sample of students who potentially would watch the Echo360 recordings to a relatively small sample size. In the future, the instructors will have to rethink the "carrot" to the students; that is, how will they entice them to view the recordings. One possibility is to make the quizzes worth more of the grade, or to make the first quiz mandatory so that the student's performance is linked to the review of the recordings. We believe one aspect is to change student behavior, and that once the initial change has been made it is more likely that the students will use this additional tool, even if they do not see an immediate benefit for doing so. In retrospect, the instructor did not reiterate when the quizzes would be available, just indicating at the beginning of one of the two classes, that watching Echo360 may be helpful in responding to the quizzes.

Next we looked at the actual viewing of the Echo360 recordings. The following data is overall. To get a feeling of how many reviewed the video capturing of the lectures, the Blackboard system allows you to identify the tool usage over specific periods of time. The instructor taught on Tuesdays and Thursdays from 12:30 to 3:15PM. Quizzes were made available from 6 to 11PM on the day after a chapter was completed. Thus, we recorded the access to the recordings from noon the day the lecture was completed to 11PM on the day the quizzes were due. Figure 1 shows the number of views prior to each quiz.

Figure 1: Lecture Capture Access Prior to Quizzes



Obviously, for the first couple of weeks after the extra credit assignment was given, there was some enthusiasm for the project. There was a precipitous drop off in viewing the recordings after this time. This result could be because students did not have time or did not see the reward for viewing the recordings. A drop off in tool usage often occurs after the initial enthusiasm for "something new" wears off. A general conclusion is that when using this technical tool as with any other course enhancement, students have to be reminded of its value and availability.

Quizzes were given over material from the second half of the course. A comparison was made to the views over the same time frames earlier in the class, between the finishing of a chapter and midnight the following days. Over similar time frames, there was a total of three views over the entire class. This indicates that at least for this professor, who includes attendance as part of his grade, that either his lectures are so clear that review is not necessary (one which the instructor does not profess), that students do not have the time to review immediately after classes, or that the instructor is unclear making viewing of the lectures a waste of time. This data could be obtained using an anonymous survey in the future. At the very least, it seems that students need some additional motivation to review the lectures.

DISCUSSION

Below we discuss how well the hypotheses were supported.

Hypothesis 1 (motivation to review lectures): The discussion above indicates that students do not readily see the value of this technology on a regular basis. It may be that reinforcement of the key concepts has to be made clearer. It could be that students who are required to come to class do not see the value of revisiting or reviewing the same material. Or, it may be that the professor is ineffective in person, thus reviewing this ineffectiveness is not seen useful. We will have to revisit how to make the technology more useful to students.

Hypothesis 2 (use of technology): One comparison which is interesting is to compare total views between faculty requirements. One faculty member required attendance, the other did not. Anecdotally, based on the conversations after class with some of the better students who the instructor felt comfortable with, students liked the technology for quick reviews. This instructor spent the first couple of minutes each class reviewing what was expected during that period and the following week. A couple of students found this useful but re-viewing the lecture not as useful. In addition, this class was fact-based, rather than problem-solving, in nature. Students indicated that they found the technology to be more useful when reviewing concepts with which they were having trouble, rather than reviewing a general discussion as was the case in this class which was pretty conceptual in nature. The authors did not control for differences in teaching style, which may be an important differentiator.

Hypothesis 3 (impact on performance): The third hypothesis tests the value of the video capture technology. We can get a potential impact by looking at the scores of the students who participated. First, we look at the overall mean score on each of the quizzes, for all students who participated. Note that a score of 3 means students got all 3 questions correct, and a score of 0 means none correct. Overall means for the five quizzes are given below:

Table 2: Overall Performance on Quizzes

Quiz Number	Average Score (out of 3)
1	2.4 [n=28]
2	1.8 [n=31]
3	2.0 [n=24]
4	2.6 [n=29]
5	2.0 [n=14]

Certainly, these five quizzes were not of uniform difficulty. From above, we see that the number of views of the video capture technology dropped off sharply after the first two quizzes, we will compare the scores of those who viewed the lecture capture to those who did not for these two quizzes. Given how the data are captured through Blackboard, this turned out to be a time-intensive procedure, as each individual student had to be examined as to whether he/she viewed the Echo360 recordings during the predetermined time intervals. The results follow:

Table 3: Lecture Viewing and Quiz Performance

	Average Score (out of 3)	
Quiz Number	Viewed video prior to quiz	Did not view video prior to quiz
1	2.4	2.3
2	1.85	1.7

Initial findings show a slight benefit from watching the video, but not a significant difference.

CONCLUSIONS

The authors received a small research grant whose goal was to identify unique ways to try and improve the usage of video capture technology. Our previous experience as evidenced by views as recorded through Blackboard summary data was that students have not used the technology extensively in the past.

The authors decided on using a rewards-based approach. That is, if students viewed the video capture recordings, they would get a reward. In this case the reward was extra credit as measured through on-line quizzes. To access the quizzes, the students had to go through a two step process, first they had to consent to being part of a research project, a step which simply required checking a box. Second, they had to access a three-question quiz, which they could access over a 5-hour (later extended over a 6-hour) time frame. They were given 5 minutes to complete the quiz.

The authors spent a significant amount of time setting up the exercise, starting with compliance with the IRB, setting up the rules for access within Blackboard, creating the quizzes, and then adding the appropriate constraints on the quiz access, including availability (e.g., allowing sufficient time after the class was delivered to process and post the recordings), but soon enough after the class so that there was a direct relationship between the actual class delivery and availability of the recordings and the delivery of the quizzes. Initially we had intended to have a control group, that is one where students were reminded of the quiz availability the other not, but this was not effective because of interclass student communication and inconsistent reminders for the active class.

In addition, the instructor made a conscious decision not to remind students beyond an introductory discussion and email of the upcoming quiz dates. This decision may have been to the detriment of the study as there was a sharp decline in participation between the second and final three quizzes.

These outcomes have led the authors to adjust their thinking for the following term. The following changes will be made.

- Students will be reminded a day in advance of when the quizzes are to be offered.
- Quiz questions will be reviewed by the instructors prior to their lectures. Instructors will make a conscious decision to directly answer the quiz questions during the lectures, with at least one answer being in the first 5 minutes of the lecture, and at least one answer being given in the last 5 minutes of the lecture.
- Quizzes will be lengthened to five questions. Three did not seem to be enough of a "carrot" to get students to participate.
- The first quiz will be easier. This is will be used as a hook to get the students enthused about the benefit of taking the quizzes and watching the lecture capture technology.
- A short survey will be given anonymously to students where we will solicit their opinions on the value of the technology

We feel that LCT has the potential to be helpful to students in the long term. The question remains as to how effectively to get them engaged. One extreme is to prerecord all the classes, so that students do not have to come to class. Another issue is to determine which types of material are best suited for this capture. We will continue to

experiment to see where it may be used to add value to the students while still maintaining the value of the traditional face-to-face instructional methodology.

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MBA Concentration Assessment Using Knowledge Management

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ABSTRACT

For-profit organizations understand that knowledge management plays a critical role in new product and service development and environmental adaptation. Yet, the entire process has yet to utilize to support course development. This omission may be revisited, as some critiques argue that graduate management education has not adapted to the changing environment and does not prepare students to practice management. The goal of this paper is depict how knowledge management can be used to assess an MBA concentration. Knowledge management provides a framework through which knowledge can be acquired and integrated into course and concentration design to complement existing management education techniques to create a vision-centered, environmentally responsive, and competency-driven course. This paper puts forth a four-phase knowledge management assessment that involves acquiring knowledge from competitive and internal environments, updating competency listings, and soliciting stakeholders' inputs.

Keywords: MBA, knowledge management, adaptation, and assessment

INTRODUCTION

For-profit organizations have long realized the importance of using knowledge to create unique products and services that support the development and maintenance of a competitive advantage (Grant, 1996; Earl, 2006). Yet, integrating knowledge management into designing graduate management education has received scant attention. This omission may need to be revisited, because some business school assessments paint an unflattering picture of management education as nonadaptive — being out of touch with and failing to prepare students to engage in the practice of management. Knowledge management can play a critical role in course design because it requires organizations to extend their boundaries to acquire the knowledge that is needed to facilitate environmental adaption. A general sentiment is that business schools are isolated and have failed to make important changes to remain relevant.

Bennis and O'Toole (2005) put forth the notion that business schools have adopted "the faulty assumption that business is an academic discipline like chemistry or geology" (p. 1). The approach to teaching management begins with data, which imparts a level of abstraction, and the data is then used to test hypotheses. This process is disconnected from how business is practiced in real life. Given this misalignment between teaching and practice, Pfeffer and Wong (2002) propose that business schools should pay attention to the environment to ensure that they are imparting skills to students that will prepare them for management practice. To do so involves acquiring knowledge from various sources to develop cross-functional courses that will enable students to work in a complex, global environment (Aurand et al., 2002); mimic actual business practices by integrating simulations into courses (Li et al., 2007); and use competency-based models to prepare students with the knowledge, skills, and abilities (KSAs) they need to become managers and leaders in a global environment (Boyatzis et al., 2002; Dreyfus, 2008). These suggestions propose that business schools utilize multiple knowledge sources to create innovative courses that impart practice-based knowledge and skills to students.

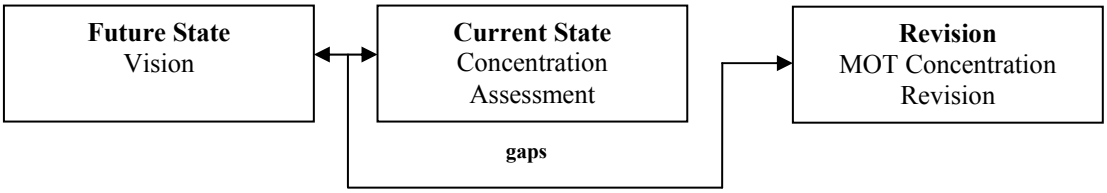
Assessment plays a critical role in knowledge management (Davenport, De Long, & Beers, 1998). This activity facilitates the acquisition of knowledge and information that allows key decision-makers to ensure that (1) assumptions used to make decisions are valid and (2) value-creation strategies align with internal and external conditions. Employing a knowledge management framework involves acquiring knowledge and information by assessing concentrations and courses to determine whether existing offerings align with department goals and that they provide the requisite competencies to students.

The goal of this paper is to depict how knowledge management can be used to assess an MBA concentration. The University of Houston - Clear Lake's (UH-CL) proximity to NASA provided its business school with an opportunity to leverage its "Management of Technology" (MOT) concentration, which includes two core classes, "Management of Technology" and "Managing R&D Professionals," both of which are well received. Students can also select two electives from the following offerings — project management, groups and teams, and human resources. However,

NASA's mission changes and increasing local competition for students provided an occasion to reassess the concentration to ensure its continued viability as well as its ability to provide students with competencies that will enable them to be outstanding technology leaders and managers.

In this discussion, knowledge management is a management function that creates or locates knowledge, manages the flow of knowledge, and ensures that it is used for an organization's benefit (Darroch & McNaughton, 2001). The MOT assessment depicts the current state of the MBA program by soliciting key stakeholders' inputs, reviewing competencies, assessing internal capabilities, and evaluating the competitive environment. The current state is then compared the department's vision, which represents the future state. Discrepancies between the current and future states represent an opportunity to revise and adapt the MBA concentration. Figure 1 depicts this model.

Figure 1: MOT Assessment Process



LITERATURE REVIEW

A review of the literature reveals two general advantages related to knowledge management: value creation and adaptation. When an organization relies on only its knowledge, it has limited resources and ideas that can be used to create new products and services. By actively managing knowledge, organizations can enhance their value-creating activities such as new product development and competency creation (Davenport et al., 1998). While new product development involves acquiring and transforming knowledge into saleable output, adaptation requires managers to assess the environment and determine whether its operating assumptions are still valid. These assumptions shape any organization's behavior, dictate its decisions about what to do and what not to do, and define what the organization considers to be meaningful results (Drucker, 1994, p. 95). Organizations that manage their knowledge are able to adapt and create value in an environment because they are able to connect to an environment characterized by shorter product lifecycles, more operating complexities and uncertainties, and higher levels of competition (Qian & Li, 2003). By managing knowledge, organizations can simultaneously create value by supplying new products and services that are appropriate for their competitive environment.

At UH-CL, the MOT MBA concentration has been very well received, and our intention was to maintain its relevance. The knowledge management approach used for this assessment consisted of a four-phase knowledge audit to assess the MOT concentration. An audit is a major phase of the knowledge management process that involves a fact-finding analysis to unearth knowledge that can be leveraged by the business (Hylton, 2002). First, a competitive audit was performed to identify and gather external information and knowledge to determine the concentration's fit with the current environment. Second, an internal capability audit was executed to gauge the department's capability of delivering the concentration. Next, a competency audit was carried out to ensure students were still acquiring relevant knowledge skills and abilities (KSAs) when taking MOT courses. And fourth, a stakeholder audit was administered to solicit cross-functional input on the continued relevance of our concentration. Figure 2 depicts our knowledge management framework. The following discussion describes this process.

MOT ASSESSMENT

Competitive audit

The competitive audit involves acquiring knowledge and information about how to best position the concentration and whether it is still relevant. This audit consisted of three activities: (1) examining concentrations in other technology clusters, (2) assessing MBA concentrations at regional and peer schools, and (3) studying enrollment trends. First, the initial phase of the audit focused on identifying incidences of MOT MBA concentrations across the country. A Google search was conducted to identify incidences of MOT concentration. A brief review of the findings described the uniqueness of the MOT graduate concentration, which is often found at universities located in or near technology clusters; however, outside of specific geographical areas, it is as popular as other concentrations.

Although the list of universities is not exhaustive (See Table 1), it illustrates how environmental factors influence university and college MBA offerings, a suggestion put forth by Pfeffer and Fong (2002). In addition, most technology clusters specialized in one or two types of technology. Houston is different from these areas. The region is not a homogeneous technology cluster. There are various technology clusters in the region such as oil and gas, chemicals, biotechnology, and aerospace. This information influences the degree of specificity in the MOT courses.

Figure 2: MOT Knowledge Management Assessment

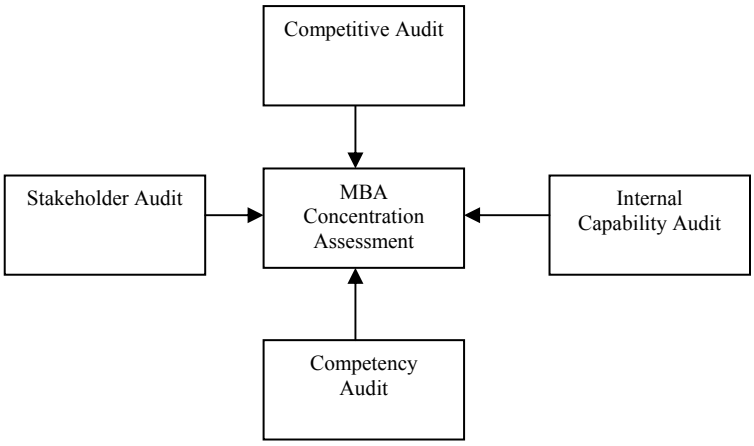


Table 1: Cluster of Universities and MBA Concentrations[a]

School (State)	MBA Concentration	Cluster Technology-Driver
University of New Mexico (NM)	MOT	Mining and Technology
North Carolina State University (NC)	Innovation Management	High Technology
University of Texas - San Antonio (TX)	MOT Project Management	Military
Steven Institute (NJ)	Innovation Management Technology Management	Pharmaceutical Industry, IS/IT
Arizona State University (AZ)	MOT	Engineering
Rutgers University (NJ)	MOT	Pharmaceuticals & Biotechnology
University of Washington (WA)	MOT	Aviation, High Technology - Biotech

[a]These concentrations may have changed since the analysis was performed.

The second phase of the audit examined neighboring college and university offerings. There are hundreds of colleges and universities in the state of Texas that offer a variety of majors and degree plans. To assess the competitive landscape, a stratified random sample of universities as performed. The universities were segmented by geographical areas and peer schools. In total, 27 universities' MBA programs were reviewed. The analysis revealed the following: (1) 15% of the sample offered an MBA degree with an Engineering/Technology concentration, (2) 15% of the sample offered an MBA degree with an Entrepreneurship concentration, (3) 11% of the sample offered an MBA degree with an Innovation and Entrepreneurship concentration, and (4) 4% of the sample offered an MBA degree with a Management of Technology concentration. This analysis suggests that there continues to be an opportunity to differentiate our program by continuing to deliver the MOT concentration; however, additional attention may need to be focused on the emergence of entrepreneurship courses and concentrations.

Finally, 14 semesters of enrollment data were analyzed. The examination indicated steady enrollment during the fall, spring, and summer semesters. Another insight that emerged focused on student majors. Between 12% and 35% of students who enrolled in the MOT courses were not from the business school. This information supports the premise that the MOT concentration should remain general because of the multi-technical nature of the Houston area.

There were three insights that emerged from the competitive audit:

- First, the need still exists to support a MOT MBA concentration.
- Second, there is an emerging trend in MBA programs to create entrepreneurship courses and concentrations.
- Third, UH-CL's MOT concentration should adopt a general technology emphasis rather than one that is more specific, because Houston is a diverse technology environment.

Internal capability audit

This audit reviews all aspects of delivering the concentration and involved three activities: soliciting administrative support, examining courses that could complement the MOT concentration, and exploring course delivery trends. First, a meeting was held with the business school dean to discuss the findings from the competitive audit. The dean supported the efforts to revise the MOT concentration, if necessary. This support is critical to foster any changes. Our administration was instrumental in featuring the revised MOT concentration in a campus magazine to publicize it. In addition, several new management MBA concentrations and courses have been developed in the last two years that will complement the MOT concentration. The new concentrations focus on leadership and international business. The new courses focus on group and team development, human resource management, and negotiations. These new concentrations and courses center on competencies that will help develop into well-rounded technology managers and leaders. Lastly, there has been a growing demand for online graduate management courses at UH-CL. Maintaining the flexibility of the possible delivery channels will support existing enrollment and future growth.

Competency audit

The purpose of this audit was to ensure that the MOT concentration provides students with the necessary KSAs to manage technology and lead technology-based organizations. As new MBA management concentrations have been recently created, there was a competency model process being utilized (Wooten & Elden, 2001). In this process, a new concentration was not being created; therefore, a modified competency model process was used to identify relevant job competencies by performing a literature review and examining relevant positions to compare the competencies to current concentrations.

Table 2: Summary of Technology Competencies

Identified Competencies	Description
Managing Technology	Ability to evaluate and assess new technology, implement it, and use technology to achieve organizational goals and objectives
Technology Strategy	Ability to evaluate technical trends, develop technical or scientific goals and objectives, and develop plans to achieve them
Technology Leadership	Ability to provide guidance on technical issues and expert technical advice
Managing Human Resources	Ability to hire, evaluate, and coordinate employees and identify training needs, and develop employees
Managing and Coordinating Projects	Ability to review projects, analyze feasibility, evaluate costs and budgets, and provide detailed project status updates
Managing and Developing Teams	Ability to develop, manage, and work effectively within a team
Managing Innovation	Ability to evaluate customer needs and their satisfaction with existing products
Managing Collaborations	Ability to identify alliance partners and evaluate and manage alliances

The assessment identified common competencies that are germane to all UH-CL MBA concentrations, such as communications and critical thinking. This paper specifically focused on those competencies that are needed to manage technology. Thus, literature reviews were conducted in these areas to identify salient technology management competencies. O*Net Online, an employment database that contains detailed descriptions of occupations, was also reviewed. Each description includes a list of skills, abilities, and knowledge that an individual should possess in order to perform a specific occupation. Based on the literature review and enrollment assessment, four positions were examined: Information Technology Manager, Project Manager (IT), Engineering Manager, and Scientist Manager. Table 2 offers a comprehensive list of competencies identified during the competency review.

Continuing the competency assessment process, the "literature review competencies" were matched to existing MOT courses as well as UH-CL electives to identify areas of competency fulfillment and coverage gaps. This "crosswalk" of competencies to courses reveals coverage of MOT-related competencies as well as opportunities to develop new courses to meet the diverse management needs of potential students. However, there is a significant competency gap related to technology strategy and planning and technology leadership. Table 3 lists the competency crosswalk.

Table 3: Technology Competency Crosswalk

Competency Identifications	Existing MOT Courses	MBA Elective	Not Covered
Managing Technology	X		
Technology Strategy			O[1]
Technology Leadership			O[2]
Managing Human Resources	X	X	
Managing and Coordinating Projects		X	
Managing and Developing Teams	X		
Managing Innovation	X		
Managing Collaborations			O[1]

[1]Strategy management and collaborations are covered in the MBA capstone course but not in the MOT course.
[2]Several leadership courses were available but none that specifically covered leading high-tech firms.

The competency audit led to the draft of the initial competencies; however, the MOT courses do not exist in a silo, because multi-disciplinary students enroll in the courses. Therefore, a stakeholder audit was conducted to promote cross-disciplinary interactions by soliciting stakeholders' input to develop a more robust list of competencies.

Stakeholder audit

The stakeholder audit provided an opportunity to exchange ideas and knowledge, identify stakeholder needs, and develop a consensus regarding the need to revise the MOT concentration. Participants from three areas were invited to the meeting: (1) management faculty who had recently created new MBA concentrations, (2) suggestions from the dean, and (3) faculty members from the departments outside the business school who had students taking MOT courses. There were two stages to the meeting — Current and Future State Assessment and Stakeholders' MOT Competency Wish List Identification. The Current and Future State Assessment stage of the meeting offered stakeholders an overview of the MOT concentration. The presentation included a SWOT analysis, examination of student enrollment in MOT courses, a description of the future vision, and a list of our initial competencies and courses that emerged during the competency audit. During the next phase of the meeting, the Stakeholders' MOT Competency Wish List Identification stage, stakeholders were invited to share their wish lists of competencies that should be included in the revised concentration.

The knowledge and information acquired during the meeting was analyzed. Table 4 contains the results of the analysis. The meeting analysis highlighted three competencies that did not emerge during the initial literature review: entrepreneurship, managing global business, and intellectual property management. While conducting the competitive audit, entrepreneurship was identified as an emerging trend. The meeting with the shareholders provided additional evidence that entrepreneurial skills are an important competency missing from the MOT courses. Additional review of the meeting feedback confirmed the need to incorporate technology strategy into the concentration. In addition, understanding intellectual capital and how to develop patent strategies to exploit intellectual assets are important technology strategy components. Furthermore, the ability to manage cross-border technology activities is a critical skill for 21st century managers.

Table 4: Shareholders' Competencies (Wish List) & Proposed Competencies

Competency Development	Definition	Match with Table 2 Competency
Managing Intellectual Property	Ability to manage and appropriate gains from intellectual contributions	• Technology Strategy
New Venture Start-Up	Ability to identify and analyze opportunity and then use it to create a new business	• Not Addressed
Global Business	Ability to manage technology across geographical boundaries	• Technology Strategy
Risk Management/Safety	Ability to evaluate project risk and uncertainty	• Project Management
Innovation Management	Ability to manage innovation and inter-firm links	• Innovation Management
Business Plan Development	Ability to develop a business plan to support new business development and financing	• Not Addressed
Small Business Management	Ability to manage small and new ventures	• Not Addressed

In summary, the audits revealed knowledge and information that led to the following understandings. Knowledge from the competitive environment suggests that MOT remained a viable concentration; however, it may be beneficial to focus on general technology phenomena to meet Houston's diverse technology environment and consider adding entrepreneurship to the concentration. Next, the internal capability produced knowledge and information that highlighted significant support from the dean, complementary MBA concentrations and courses that will enhance the attractiveness of the MOT courses, and a cross-disciplinary student enrollment. The competency audit brought to light the need to incorporate technology strategy and planning, leadership, and managing collaborations. In the final audit, MOT stakeholders provided knowledge that additional competencies such as entrepreneurship, global management, and intellectual property management should be added to the MOT courses.

MOT REVISION

The vision for the concentration is for it to become a recognized specialty MBA program in technology. The assessment revealed the need to incorporate technology strategy, technology leadership, collaboration management, and global business into the concentration. Given the findings, three revisions were made to the concentration. First, the MOT signature course was expanded to include technology strategy, which includes intellectual capital, global business, and innovation and collaboration management. The "Managing R&D Professionals" course was adapted to incorporate leadership development, leading an R&D firm, and managing high-tech professionals. Finally, competitive and stakeholder feedback led to the development of an entrepreneurship course that includes business plan development and small business management. Student surveys were conducted after rolling out the courses to further refine them as needed. The revised MOT concentration is listed in Appendix 1.

CONCLUSION

The mission of most colleges and universities is to create and disseminate knowledge for the public good. Faculty are rewarded on their publications and for delivering their research at conferences. There are sufficient sources of knowledge that can be used to develop and reassess graduate management concentrations and courses. Since knowledge management practices are associated with new product development and adaptability, accessing and integrating different knowledge sources can enhance course design.

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APPENDIX 1

Management of Technology	Leading Technology	Entrepreneurship
Course Topics • Innovation Frameworks • Adoption • Customer Needs • Product Development • Project Evaluation • Types of R&D • Value Creation and Strategy • Technology Externalities • International Management • Patents • Trademarks & Copyrights • Structuring for Innovation • R&D Professionals • Innovation in Small and Large Firms	***Course Topics*** • Leadership • Motivation • Teams • Influence and Politics • Followership • Managing R&D Activities • Hiring R&D Professionals • Managing R&D Professional Careers • Conflict & Negotiations • Communications • Technology Failures • Technology Planning	***Course Topics*** • Opportunity Recognition • Legal Structure • Capital Deal Structuring • Intellectual Property and Protection • Contracts • Negotiations • Launching New Venture • Marketing Plan • Financial Management • Founding Team • Venture Risk Management • Growth & Exit • Small Business Management
Competencies Technology Strategy and Planning Innovation Management Global Business Project Management Intellectual Property Management	***Competencies*** Human Resource Management Innovation Management Technology Leadership Technology Planning	***Competencies*** New Venture Start-Up Intellectual Property Management Small Business Management
Final Project Back Bay Battery Technology Simulation	***Final Project*** Leadership Portfolio	***Final Project*** Business Plan

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Quality Control Tools for Project Management: A Classroom Exercise

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ABSTRACT

In order to properly educate project management students about the benefits associated with a sustained focus on quality and continuous improvement, instructors should help students build the perspective that quality processes are an integral part of all organizational work, including work that is temporary in nature (e.g., projects). This paper presents an in-class exercise to demonstrate the application and value of quality control tools for use by project managers.

Keywords: quality control, project management, management education

INTRODUCTION

Business organizations, and particularly U.S. business organizations, have been faulted for *managing to results* (Breyfogle, 1999) by focusing primarily on end-result performance metrics such as net margins, sales revenue, return on investment, and so on. The rise in the use of project management tools, methods and processes (Smith, Smarkusky, & Corrigal, 2008) is an organizational attempt to respond strategically to the increased complexity and pace of global business demands (Longman & Mullins, 2004; Turner, 1999), yet the move to such methodologies has the potential to exacerbate the focus on end-result measures of organizational performance. The over-reliance on outcome metrics in project work (e.g., time, cost, scope) as the primary means of measuring organizational performance may drive excessive short-term thinking, increase internal conflict, and cause individuals and organizations to emphasize ineffective quality control processes and mechanisms (Kerzner, 2009).

In the project management discipline, quality processes are an essential element of project plans because they help contribute to project success (PMBOK Guide, 2008). However, the definition of a project ("*a temporary endeavor undertaken to create a unique product, service or result*" - PMBOK Guide, 2008) is equally outcome-oriented and may give beginning project management students a sense that only the outcomes of project work are of interest. In order to properly educate project management students about the benefits associated with a sustained focus on quality and continuous improvement, instructors should help students build the perspective that quality processes are an integral part of all organizational work and help ensure that quality outcomes are more achievable and sustainable (Smith, et al., 2008). While there is consensus among instructors of undergraduate project management courses that soft skills training is essential for success as a project manager (Fetter & Randolf, 2009; Pant & Baroudi, 2008), it is more important to blend the teaching of hard skills and soft skills so that beginning project managers understand the organizational and business context for project work (Mitchell, 2006; Reif and Mitri, 2006).

In our project management classes, we spend a good bit of time developing a comprehensive framework for discussions of quality management in projects that blends the teaching of technical tools ("hard" skills) with the teaching of human and managerial processes ("soft" skills) in project work. That framework is intended to educate students about the technical and human processes and activities which drive project quality policies, objectives and responsibilities. The outcomes of these processes and activities are the quality plans which identify project technical quality standards, quality assurance processes which rely on the interaction of technical and human processes to drive the assessment of quality standards, and quality control processes led by project managers who monitor project quality and drive changes to achieve desired results. As part of our comprehensive review, we incorporate the following exercise on quality control to help project management students understand, use and appreciate the hard and soft skill tools available to them as they engage in important project quality initiatives.

EXPLANATION OF THE CLASSROOM EXERCISE

We introduce this lesson on quality control by referring to the tools as "The Magnificent Seven". We also reference an old western movie, *The Magnificent Seven* (See Figure 1), though most students are too young to appreciate the reference (and the humor). The seven quality control tools discussed in this lesson are: data tables (also known as

"check sheets"), histograms, Pareto charts, cause-and-effect analysis, scatter diagrams, trend analysis, and control charts. The experiential exercise uses M&M candies to help students use and understand the value of the seven quality control tools.

We purchase a package of small paper plates and one 48 pack box of 1.69 ounce bags of M&M's (available from a local warehouse membership store). Distribute one bag and plate per student. We tell the students not to eat the M&M's until the exercise is complete. We instruct the students to open the bag and gently dump the contents onto the paper plate. We then provide the following instructions: "Quality is an elusive concept that defies easy explanation. This exercise will force you to think about the combination of technical and human factors that contribute to the determination of quality in products, services or results. Using your bag of M & M's, assume that each color is a defect. Using the data table (check sheet) given as Table 1, determine how many M & M's you have of each color." Allow sufficient time for this activity. When the students have completed the first activity, continue with the following instructions: "Transfer this data onto the Histogram/Pareto Worksheet (Table 2), ranking the color with the most pieces first and so on until all colors/pieces have been accounted for. From the Histogram/Pareto Worksheet, create a Histogram/Pareto Chart using the Pareto Chart form (Table 3)." We use the example Pareto chart shown as Figure 2 to explain how this chart should look. Students get practice creating a histogram, and then use the histogram (organized as a Pareto chart) to analyze the defects by color and perform the Pareto analysis (to illustrate the 80/20 rule). We emphasize the value of the information gained from using these simple defect identification tools.

We then discuss the tools which allow project managers to assess and analyze the causes of poor project quality. We approach the subject of cause-and-effect analysis by asking the students to look at the "M's" printed on the M&M's. Some of the "M's" are misprinted, some are poorly aligned, and some are missing altogether. We ask the students how such a thing could have occurred. The students invariably mention a number of possible causes for the poor quality of the printed "M's" (e.g., poor quality of the food ink, spray equipment malfunctions, incorrect candy temperature, etc.). We use the cause-and-effect diagram included as Figure 3 (also known as a fishbone or Ishikawa diagram) to lay out the possible causes of printing defects for the "M's". Figure 4 allows us to demonstrate a deeper analysis which includes more detail in the fishbone diagram by developing possible causes of machine defects (in the printing process). The purpose of the cause-and-effect diagrams is to analyze potential causes of defects and help project managers target appropriate interventions. If the ultimate purpose of quality control is to make needed changes, the cause-and-effect diagrams help students better understand how to do that.

We extend our discussion of the analysis of defects by referencing Figures 5 & 6. In Figure 5, there is a positive correlation/relationship between machine speed and the percentage of printing defects. We ask the students to identify the trend (positive). We then ask if such a relationship is plausible (it is). A discussion of the use of line-fitting techniques (e.g., regression) allows us to help the students understand how simple scatter diagrams can show both trends and relationships between variables and design parameters. In this way, they can start to diagnose quality problems and develop a deeper understanding of the causes of those problems and the remedies available.

The last quality tool discussed is the control chart. This discussion starts with a review of statistical process control, six sigma, and the concept of control limits. Students who have previously taken a course in operations management will be familiar with these concepts, so the instructor may need more or less coverage of these topics, depending on the audience. We present figure 7 as a guide to this discussion. We say that the target number of M&M's (the "design parameter") is determined before production based on individual package weight (1.69 ounces). We also suggest that the upper and lower control limits were determined from previous analyses of a properly run bag-filling process. We ask the students to call out the total number of M&M's in their bag, and we move along the control chart in Figure 7 documenting the totals. In all cases (we have not encountered a situation otherwise), the total number of M&M's will vary between the upper and lower control limits. We use this information to discuss the nature of control charts and their value for highlighting out-of-control processes. We ask the students to tell us what to do should we encounter a bag with more than 59, or less than 53, M&M's (the proper response is to stop the process and investigate the error, since an in-control process should produce bags with 56 +/- 3 M&M's each in them).

CONCLUDING THE EXERCISE

At this point in the exercise, the students are ready to eat the M&M's. But we have one more point to make. Have your students visually examine the M&M's in their plates. Ask them the following questions: "What is quality? How do you judge a *quality* M&M?" The students develop a good many answers to the first question. Their responses include concepts such as "conformance to standards" and "acceptance of design criteria". A better explanation, and one that brings the discussion full circle, is that quality is that which is *perceived by the customer*. Given that definition, ask them to judge the quality of the M&M's. Are there defects in the printing of "M's" on their M&M's? Are there some misshapen M&M's? Are there too many of one color, not enough of another color? The students will soon agree that none of those things really matter. Most folks dump a handful of M&M's into their hand and put that handful directly into their mouths. If the chocolate is "good" and the candy shell sufficiently "crisp", the customer will usually be more than satisfied with the quality. At this point, it is appropriate to allow the students to eat their M&M's (if they have not already done so).

This simple set of classroom tasks presents instructors with an opportunity to show how quality tools can inform quality processes to help the makers of M&M's ensure a quality outcome. And while customers may only be concerned with the outcomes which are important to them, it is incumbent on managers and business leaders to develop the quality plans and processes necessary to ensure those valued outcomes. In the development and execution of a project, as in the production of M&M's, a proper understanding of quality tools helps project managers develop the proper processes to initiate, plan, execute, monitor and control project quality so that the product, service or result is the one envisioned by the customer.

Table 1: Defect Check Sheet

Defect	Pieces
Blue	
Orange	
Green	
Red	
Yellow	
Brown	
Other	

Table 2: Histogram/Pareto Worksheet

Rank	Color Name	Count	%	Cumulative %
1				
2				
3				
4				
5				
6				
7				100
Totals			100	

Table 3: Histogram/Pareto Chart

1	2	3	4	5	6	7

Figure 1: "The Magnificent Seven" Movie Poster

Figure 2: Example Histogram/Pareto Chart

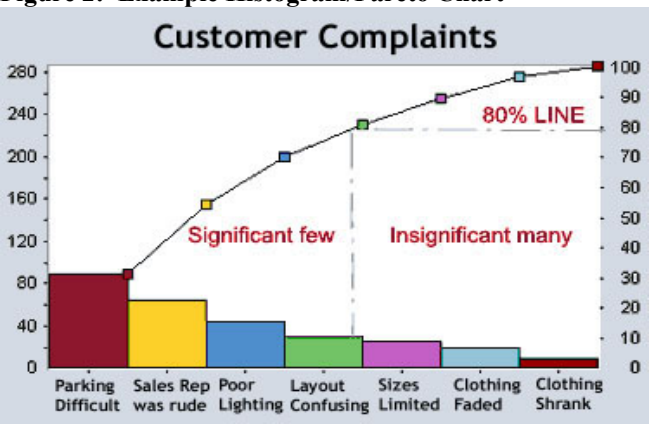


Figure 3: Cause-and-Effect Diagram

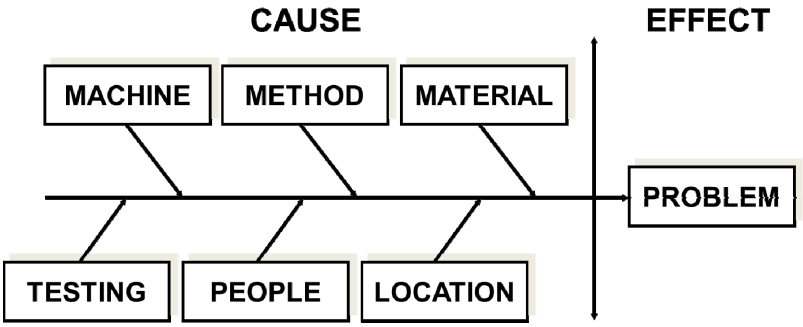


Figure 4: Cause-and-Effect Diagram (with "bones" inserted)

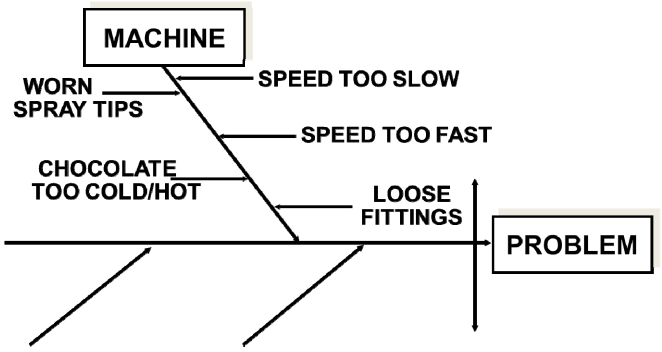


Figure 5: Scatter Diagram

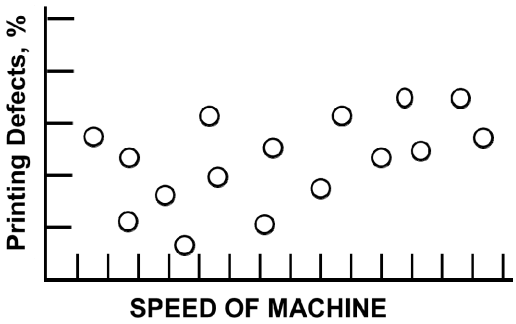


Figure 6: Trend Analysis

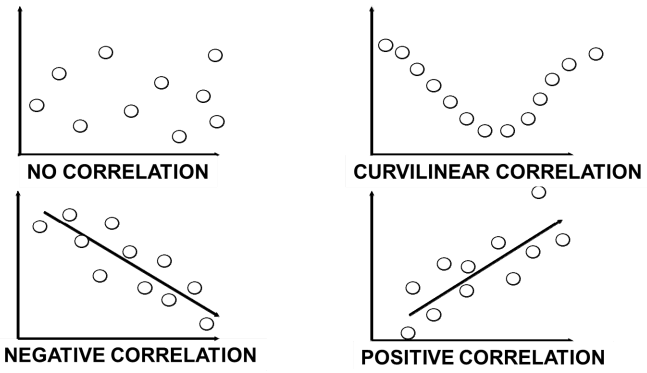
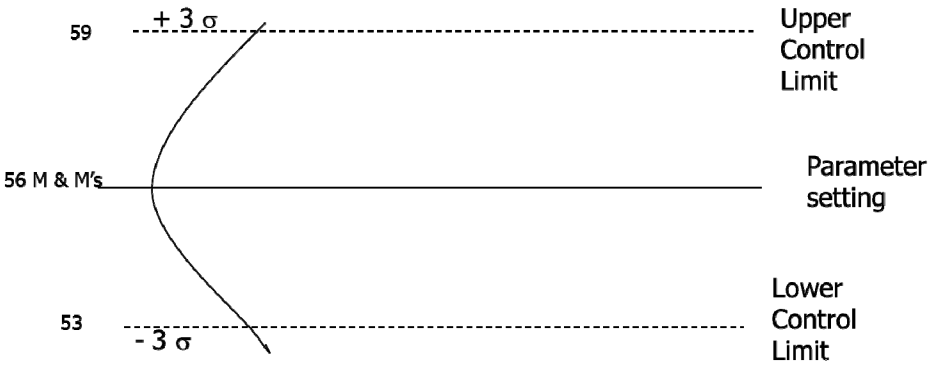


Figure 7: Control Chart



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Measuring Retailers' Success At Achieving Supply-Chain Economies

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ABSTRACT

The primary subject of this case is the introduction of a metric, Excess Days, that can be used to gauge the degree to which retailers have reduced their working-capital levels by achieving supply-chain economies. Students learn how to recognize the multiple strategies that Best Buy and Bed Bath & Beyond implemented to achieve success in this area. In addition, they discover how to calculate the reductions in working capital that resulted when these firms simultaneously decreased their days' sales in inventory and increased their days' purchases in accounts payable. Finally, data are provided to allow students to contrast these firms' success against that of two firms that liquidated in early 2009: Circuit City (a direct competitor of Best Buy) and Linens 'n Things (a direct competitor of Bed Bath & Beyond). This case is appropriate for accounting, finance, and marketing courses that address liquidity analysis, working-capital management, and power shifts away from manufacturer-suppliers and toward large retailers.

Keywords: liquidity analysis, working capital management, inventory, accounts payable, supply-chain economies, retailers, Best Buy, Bed Bath & Beyond, Circuit City, Linens 'n Things

INTRODUCTION

Retail sales have become much more concentrated since the early 1990s. By 2010, the top ten U.S. retailers sold $810 billion of merchandise in the U.S., representing 25.8% of overall U.S. non-auto retail sales for that year (Stores Magazine, 2011 and U.S. Census Bureau, 2012). As sales became more concentrated, the top retailers accounted for a greater proportion of their suppliers' sales and, as a result, potentially increased their ability to exert clout over their suppliers. This clout could enable large retailers to (1) transfer inventory risk by holding fewer of the suppliers' goods in their stores and distribution centers and (2) take longer to pay for purchases. Because the metric Excess Days addresses the relationship between a firm's days' sales in inventory and its days' purchases in accounts payable, it can provide insight into the degree to which large retailers have reduced their working-capital levels by achieving supply-chain economies.

EXCESS DAYS

Excess funds tied up in working capital can be unproductive and costly. It has been widely recognized for decades that many firms have achieved working-capital efficiencies by holding less inventory. However, only more recently have the efficiencies possible from taking longer to pay for merchandise purchases (accounts-payable stretching) been considered (Gosman, Kelly, Olsson, and Warfield, 2004). A focus on *both* inventory and accounts payable levels is appropriate because increases in current liabilities can reduce firms' working-capital investments just as effectively as decreases in current assets. When these changes occur *simultaneously*, firms can achieve even greater reductions in the funds tied up in working capital. **Excess Days** measures the extent to which firms have reduced their investment in inventory and/or slowed their payment of accounts payables. It is calculated as follows:

Days' sales in inventory (average inventory ÷ average daily cost of goods sold)
Less: Days' purchases in accounts payable (average accounts payable ÷ average daily purchases)
= Excess Days

Days' sales in inventory (DSI) measures the days that merchandise remains on the retailer's shelves before being sold. Days' purchases in accounts payable (DPAP) measures the time that passes between the date goods are acquired from the supplier and the date the supplier is paid for the merchandise. Each measure can be calculated directly as shown above or indirectly by dividing a turnover measurement into 365; for example, 365 ÷ inventory turnover = days' sales in inventory.

For the Excess Days metric, as with golf scores and a college-housing lottery, a LOWER number is better. Should this metric come to be zero or negative, it would signify that the firm sold its merchandise *before* having to pay for it. An even more favorable situation would occur if the firm not only sold the merchandise *but also received cash for*

it before having to pay the supplier for it. As explained below, zero or negative excess days could signal this relationship even if the retailer's customers charge their purchases, depending on the type of credit card they use.

In a great many instances, retailers do not have a proprietary credit card *that they administer themselves*. Instead, customers charge their purchases using a generic national credit card (e.g., VISA), a co-branded national credit card (e.g., Costco American Express Card), or the firm's own card administered by a third party bank (e.g., American Eagle Outfitters Credit Card). In each of these cases, the retailer records no accounts receivable because the firm receives cash almost immediately from the credit-card administrator. When cash is received at the time that customers charge their purchases, zero or negative excess days would indicate that the firm's customers, in effect, were paying its suppliers, since the retailer under this scenario *would receive cash for the merchandise before having to pay for it.* The implications for cash flows and working-capital management would be very favorable.

Financial-statement data for Best Buy will be used to illustrate the calculation of Excess Days. As shown in Table 1, this retailer's Excess Days had declined from 36.9 in 1994 to 6.4 by 2010. Best Buy accomplished this 83% reduction by simultaneously (1) decreasing its days' sales in inventory (by 9.1 days) and (2) increasing its days' purchases in accounts payable (by 21.4 days). As a result, it greatly improved its working-capital management, by shortening the time period between when it needed to pay its suppliers for the merchandise and when it subsequently sold the goods.

Table 1: Excess Days for Best Buy, 1994 and 2010

	1994	2010
Average inventory	$772,813,500	$5,691,500,000
÷ Average daily cost of goods sold	$12,018,872	$103,106,884
= Days' sales in inventory (DSI)	64.3	55.2
Average accounts payable	$350,371,000	$5,085,000,000
÷ Average daily purchases	$12,787,263	$104,200,820
= Days' purchases in accounts payable (DPAP)	27.4	48.8
Excess Days (DSI - DPAP)	36.9	6.4

MEASURING WORKING-CAPITAL EFFICIENCIES

Working-capital efficiencies can be measured by examining changes that have occurred over time in a firm's DSI and DPAP. Actual working capital for a given retailer can be compared to **pro-forma working capital**, the investment that would have been needed *if the firm's DSI and DPAP had not improved over time.* Given the retailer's current cost of goods sold and purchases, how much more inventory would have been stocked if the firm had not lowered its DSI and how many fewer accounts payable would have been carried if the firm had not increased its DPAP?

As shown in Table 2, Best Buy was able to achieve working-capital efficiencies of $3.2 billion by 2010 from decreasing its DSI by 9.1 days and increasing its DPAP by 21.4 days from their 1994 levels. Absent these supply-chain economies, Best Buy would have needed $938 million more inventory to support its 2010 level of cost of goods sold. In addition, the retailer would have carried $2.2 billion fewer accounts payable that arose from its 2010 purchases.

Table 2: Best Buy's Reduction in Working Capital from Supply-Chain Economies

	2010 Pro Forma	2010 Actual	WC Efficiencies	Ave. WC Balance
Actual Working Capital, 2010				$1,699,000,000
Average daily cost of goods sold	$103,106,884	$103,106,884		
X DSI	(1994 level) 64.3	55.2		
= Average inventory	$6,629,772,641	$5,691,500,000	$938,272,641	
Average daily purchases	$104,200,820	$104,200,820		
X DPAP	(1994 level) 27.4	48.8		
= Average accounts payable	$2,855,102,468	$5,085,000,000	$2,229,897,532	
Total working-capital efficiencies				$3,168,170,173
Pro-Forma Working Capital, 2010				$4,867,170,173

INSIGHT POSSIBLE INTO A FIRM'S VIABILITY

A firm's inability to reduce its Excess Days could raise doubts concerning its ability to remain efficient and competitive. A retailer that experiences an increasing DSI may have purchased merchandise that its customers do not desire or it may lack the clout to transfer some inventory risk to its suppliers. A firm that reports a decreasing DPAP may have come to be viewed as a riskier customer, perhaps prompting its suppliers to impose stricter credit terms. On the other hand, reduced Excess Days may speak to a retailer's superior inventory-management skills and its increased credit worthiness. But even firms that do manage to reduce their Excess Days could find themselves at a disadvantage if their competitors have succeeded at achieving much greater reductions. Compared to its peers, the firm that has tied up more funds in inventory relative to its cost of goods sold and/or pays for its purchases more quickly is at a cash-management disadvantage that over time could adversely affect its profitability and even its viability. Such firms may need to borrow more or delay reductions in debt because of their relatively inefficient working-capital investment.

In Table 3, trends in Excess Days for Best Buy are compared to those for Circuit City, a direct competitor that ceased operations in early 2009. Notice that these two electronics retailers had very similar Excess-Days levels in 1994, with Circuit City actually having a slight edge in working-capital management, given that a lower number for Excess Days is better. However, by 2007, the last year that Circuit City filed a 10-K, Best Buy's Excess Days had dropped over three times more than Circuit City's. Both firms achieved reductions in their Excess Days over the thirteen-year period, but Best Buy's was much more pronounced. In terms of DPAP, Best Buy was able to stretch its accounts payable by 20.8 days from 1994 to 2007, but Circuit City's days' purchases in accounts payable actually declined, perhaps reflecting increasing supplier concerns about its credit worthiness.

Table 3: Excess-Day Trends, Best Buy Compared to Circuit City

	Best Buy		Circuit City	
	1994	2007	1994	2007
Days' sales in inventory (DSI)	64.3	52.3	76.4	62.9
- Days' purchases in accounts payable (DPAP)	27.4	48.2	40.3	36.2
= Excess Days (DSI - DPAP)	36.9	4.1	36.1	26.7

Tables 1, 2, and 3 can serve as templates for analysis of the success (or lack thereof) of other retailers' efforts at achieving supply-chain economies. Like Best Buy, Bed Bath & Beyond has become the dominant firm in its retail niche, home furnishings. But for Linens 'n Things, its decline resembled that of Circuit City in that each firm had

had a large national presence but filed its last 10-K in 2007 and liquidated in early 2009. The data presented in Table 4 for the two home-furnishings retailers allow for calculation of their Excess Days and the corresponding dollar effects that changes over time in DSI and DPAP had on their investments in working capital. This will permit consideration of whether working-capital management differences discovered between Bed Bath & Beyond and Linens 'n Things prior to the latter's demise provided an indication of how the firms' prospects had diverged.

Table 4: Selected Data for Bed Bath & Beyond and Linens 'n Things

	Bed Bath & Beyond			Linens 'n Things	
	1998	2007	2010	1998	2007
Average inventory	$315,367,000	$1,561,390,500	$1,864,305,000	$247,288,500	$794,186,500
Average daily cost of goods sold	$2,249,408	$11,298,049	$14,070,226	$1,751,335	$4,790,027
Average accounts payable	$82,044,000	$592,880,500	$660,306,500	$107,086,000	$191,893,000
Average daily purchases	$2,493,739	$11,602,358	$14,640,942	$1,855,910	$4,797,325
Average working capital	$212,595,500	$1,309,570,000	$2,582,594,500	$139,134,000	$421,216,500

QUESTIONS

1. Refer to the data presented in Table 4 to calculate Excess Days for Bed Bath & Beyond for each of the three years. What two actions did the firm take to lower its investment in working capital? Which action had the greater effect on the Excess-Days number?

2. Using Table 2 as a template, calculate the reduction in working capital that Bed Bath & Beyond achieved from supply-chain economies over the 1998-2010 period.

3. Refer to the data presented in Table 4 to calculate Excess Days for Linens 'n Things for 1998 and 2007. Over that time period, were the firm's trends in DSI and/or its DPAP consistent with achieving supply-chain economies? Explain.

4. Using Table 2 as a template, calculate the increased investment in working capital that Linens 'n Things needed as a result of its supply-chain inefficiencies over the 1998-2007 period.

5. Based on your analyses in the preceding questions, compare and contrast the relative performances of Bed Bath & Beyond and Linens 'n Things with respect to trends in their Excess Days and the effect of those trends on their working-capital investments.

6. Are the differences that you cited in answering Question 5 consistent with it being Linens 'n Things rather than Bed Bath & Beyond that experienced major financial difficulties? Explain.

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Teaching Note:
Measuring Retailers' Success At Achieving Supply-Chain Economies

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CASE DESCRIPTION AND SYNOPSIS

The primary subject of this case is the introduction of a metric that can be used to gauge the degree to which retailers have reduced their working-capital levels by achieving supply-chain economies. Financial-statement data for Best Buy, Circuit City, Bed Bath & Beyond, and Linens 'n Things are used to acquaint students with the calculation and usefulness of Excess Days, a relatively new metric that focuses on the relationship between a firm's days' sales in inventory and its days' purchases in accounts payable (Gosman and Kelly, 2003). Compared to its peers, the firm that has tied up more funds in inventory relative to its cost of goods sold and/or pays for its purchases more quickly is at a cash-management disadvantage that could adversely affect its profitability and even its viability over time. Students learn how to recognize the multiple strategies that Best Buy and Bed Bath & Beyond implemented to successfully achieve supply-chain economies. In addition, they discover how to calculate the reduction in working capital that these two firms achieved from simultaneously decreasing their days' sales in inventory and increasing their days' purchases in accounts payable. Finally, data are provided to allow students to calculate and evaluate Excess Days for two firms that liquidated in early 2009: Circuit City, a direct competitor of Best Buy; and Linens 'n Things, a direct competitor of Bed Bath & Beyond. These data enable students to consider which firm's viability was less certain. This case is appropriate for a number of courses. It works well in Principles of Financial Accounting and Intermediate Accounting courses when discussing liquidity analysis. Instructors teaching introductory finance classes can use the case when addressing the importance of working-capital management, because the Excess-Days metric provides a means to quantify the extent to which a firm reduced its working-capital investment by achieving supply-chain economies. Finally, the issues covered can dovetail nicely with marketing-class discussions of shifts within channels whereby relationship power has moved away from manufacturer-suppliers and toward large retailers. This case can be taught in 75 to 90 minutes of class time and is expected to require 75 to 90 minutes of outside preparation by students.

RECOMMENDATIONS FOR TEACHING APPROACHES

Well-known retailers are the focus of this case. Most students should bring some familiarity with these firms to the case discussion because they, their friends, or families have probably shopped (and maybe even worked) at one or more of these retailers. In introductory financial accounting or intermediate accounting, the case can be used to highlight the information that can be gleaned from the calculation of, and relationship between, a firm's days' sales in inventory and its days' purchases in accounts payable. In addition, it can add some spark to the usually staid textbook discussion of accounts payable. Also, as noted above this case can integrate well with discussions in finance and marketing classes concerning working capital management and power relationships within distribution channels, respectively.

Instructors should proceed through the six case questions in numerical order, since most build on answers to earlier questions. Two extensions of this case are presented as Questions 7 and 8 at the conclusion of this teaching note. These extension consider financial-statement data for four additional retailers, allowing students to become even more familiar with the Excess-Days metric and the important insights that can come to the forefront when it is calculated and analyzed. The case itself contains the financial-statement data that students need to address Questions 1-6. On the other hand, Questions 7-8 afford them the opportunity to access the SEC's EDGAR database.

To facilitate answering the questions, the financial data contained in Table 4 of the case are repeated below.

Table 4: Selected Data for Bed Bath & Beyond and Linens 'n Things

	Bed Bath & Beyond			Linens 'n Things	
	1998	2007	2010	1998	2007
Average inventory	$315,367,000	$1,561,390,500	$1,864,305,000	$247,288,500	$794,186,500
Average daily cost of goods sold	$2,249,408	$11,298,049	$14,070,226	$1,751,335	$4,790,027
Average accounts payable	$82,044,000	$592,880,500	$660,306,500	$107,086,000	$191,893,000
Average daily purchases	$2,493,739	$11,602,358	$14,640,942	$1,855,910	$4,797,325
Average working capital	$212,595,500	$1,309,570,000	$2,582,594,500	$139,134,000	$421,216,500

QUESTIONS FOR DISCUSSION (WITH SUGGESTED ANSWERS)

1. Refer to the data presented in Table 4 to calculate Excess Days for Bed Bath & Beyond for each of the three years. What two actions did the firm take to lower its investment in working capital? Which action had the greater effect on the Excess-Days number?

Results for Excess Days are shown in Table 5 for Bed Bath & Beyond. As noted there, from 1998 to the 2007 and 2010 periods, the firm simultaneously lowered its days' sales in inventory and increased its days' purchases in accounts payable. As was the situation for Best Buy, the larger reduction in Excess Days was the result of payables stretching – taking longer to pay suppliers.

Table 5: Excess Days for Bed Bath & Beyond

	1998	2007	2010
Average inventory	$315,367,000	$1,561,390,500	$1,864,305,000
÷ Average daily cost of goods sold	$2,249,408	$11,298,049	$14,070,226
= Days' sales in inventory (DSI)	140.2	138.2	132.5
Average accounts payable	$82,044,000	$592,880,500	$660,306,500
÷ Average daily purchases	$2,493,739	$11,602,358	$14,640,942
= Days' purchases in accounts payable (DPAP)	32.9	51.1	45.1
Excess Days (DSI - DPAP)	107.3	87.1	87.4

Overall Excess Days declined by approximately 20 days during the 9-12 year period. Although DSI and DPAP fluctuated between 2007 and 2010, on average Bed Bath & Beyond held inventory for 5 fewer days and took approximately 15 more days to pay for its merchandise as compared to 1998 levels.

2. Using Table 2 in the case as a template, calculate the reduction in working capital that Bed Bath & Beyond achieved from supply-chain economies over the 1998-2010 period.

In Table 6, Bed Bath & Beyond's Excess-Days data for 2010 (shown in Table 5) are adjusted (pro-forma) to illustrate how much higher the firm's average working-capital balance would have been if it had not achieved

supply-chain economies over the 1998-2010 period. By lowering its DSI and increasing its DPAP, Bed Bath & Beyond was able to lower its working-capital investment by $287 million, or 10%. These results illustrate how important it is to look at DPAP in addition to DSI when measuring supply-chain economies. A sole focus on the inventory reduction would have missed a large portion of the total working-capital efficiencies that were achieved.

Table 6: Bed Bath & Beyond's Reduction in Working Capital from Supply-Chain Economies

	2010 Pro Forma	2010 Actual	Working Capital Efficiencies	Average Working Capital Balance
Actual Working Capital, 2010				$2,582,594,500
Average daily cost of goods sold	$14,070,226	$14,070,226		
X DSI	(1998 level) 140.2	132.5		
= Average inventory	$1,972,645,685	$1,864,305,000	$108,340,685	
Average daily purchases	$14,640,942	$14,640,942		
X DPAP	(1998 level) 32.9	45.1		
= Average accounts payable	$481,686,992	$660,306,500	$178,619,508	
Total working-capital efficiencies				$286,960,193
Pro-Forma Working Capital, 2010				$2,869,554,693

3. Refer to the data presented in Table 4 to calculate Excess Days for Linens 'n Things for 1998 and 2007. Over that time period, were the firm's trends in DSI and/or its DPAP consistent with achieving supply-chain economies? Explain.

Results for Excess Days for Linens 'n Things are shown in Table 7. As noted there, from 1998 to 2007, the year of its last 10-K filing, the firm saw its days' sales in inventory *increase* and its days' purchases in accounts payable *decrease*. Each trend was *inconsistent* with achieving supply-chain economies. Excess Days increased by approximately 42 days during the nine-year period, because it took Linens 'n Things an extra 24 days to sell its merchandise at the same time that it accelerated its payments to suppliers by 18 days.

Table 7: Excess Days for Linen 'n Things, 1998 and 2007

	1998	2007
Average inventory	$247,288,500	$794,186,500
÷ Average daily cost of goods sold	$1,751,335	$4,790,027
= Days' sales in inventory (DSI)	141.2	165.8
Average accounts payable	$107,086,000	$191,893,000
÷ Average daily purchases	$1,855,910	$4,797,325
= Days' purchases in accounts payable (DPAP)	57.7	40.0
Excess Days (DSI - DPAP)	83.5	125.8

4. Using Table 2 in the case as a template, calculate the increased investment in working capital that Linens 'n Things needed as a result of its supply-chain inefficiencies over the 1998-2007 period.

In Table 8, Linens 'n Things Excess-Days data for 2007 (shown in Table 7) are adjusted (pro-forma) to illustrate how much additional working capital the firm had to carry because it experienced supply-chain inefficiencies over the 1998-2007 period. In combination, its increased DSI and decreased DPAP necessitated a working-capital increase of $203 million, almost doubling the $218 million investment that would have been sufficient if Linens 'n Things' DSI and DPAP had remained at 1998 levels in 2007.

Table 8: Linens 'n Things' Extra Working Capital Needed Due to Supply-Chain Inefficiencies

	2007 Pro Forma	2007 Actual	Working Capital Inefficiencies	Average Working Capital Balance
Actual Working Capital, 2007				$421,216,500
Average daily cost of goods sold	$4,790,027	$4,790,027		
X DSI	(1998 level) 141.2	165.8		
= Average inventory	$676,351,810	$794,186,500	$117,834,690	
Average daily purchases	$4,797,325	$4,797,325		
X DPAP	(1998 level) 57.7	40.0		
= Average accounts payable	$276,805,650	$191,893,000	$84,912,650	
Total working-capital inefficiencies				$202,747,340
Pro-Forma Working Capital, 2007				$218,469,160

5. Based on your analyses in the preceding questions, compare and contrast the relative performances of Bed Bath & Beyond and Linens 'n Things with respect to trends in their Excess Days and the effect of those trends on their working-capital investments.

Bed Bath & Beyond achieved substantial supply-chain economies over the period studied, decreasing its Excess Days by approximately 20 days (Table 5). The firm's simultaneous decrease in DSI and increase in DPAP allowed it to operate with a $287 million lower investment in working capital than that which would have been needed if its two days-measures had not changed favorably (Table 6). For Linens 'n Things, the opposite scenario occurred. By 2007, its Excess Days had increased by approximately 42 days over 1998 levels (Table 7). The supply-chain inefficiencies associated with its 24-day increase in DSI and its 18-day decrease in DPAP meant that Linens 'n Things was operating with a $203 million higher investment in working capital than that which would have been needed if its two days measures had not deteriorated (Table 8).

6. Are the differences that you cited in answering Question 5 consistent with it being Linens 'n Things rather than Bed Bath & Beyond that experienced major financial difficulties? Explain.

Yes. As summarized in Table 9, over the nine-year period from 1998 to 2007 Linens 'n Things went from having an Excess-Days level that was 23.8 days *lower* than that of Bed Bath & Beyond to a level that was 38.7 days *higher* than that of its direct competitor (remember that lower is better for the Excess-Days metric). During a period when Bed Bath & Beyond was able to lower its Excess Days from 107.3 in 1998 to 87.1 by 2007 (Table 5), Linens 'n Things saw its 1998 Excess Days of 83.5 increase to 125.8 by 2007 (Table 7).

Table 9: Excess-Day Trends, Bed Bath & Beyond vs. Linens 'n Things

	Bed Bath & Beyond		Linens 'n Things	
	1998	2007	1998	2007
Days' sales in inventory (DSI)	140.2	138.2	141.2	165.8
- Days' purchases in accounts payable (DPAP)	32.9	51.1	57.7	40.0
= Excess Days (DSI – DPAP)	107.3	87.1	83.5	125.8

The contrast between the home-furnishings firms' performance is even greater than that shown in Table 3 in the case for Best Buy vs. Circuit City. In that situation, *both* electronics firms were able to lower their Excess Days, but Circuit City's reduction paled compared to that of Best Buy. In this situation, the two home-furnishings retailers saw their Excess Days go in opposite directions. While Bed Bath & Beyond initiated supply-chain economies to cut its working-capital investment by $287 million (Table 6), an increasing DSI and decreasing DPAP at Linens 'n Things caused that retailer to carry $203 million more working capital (Table 8) – an absolute difference in their working-capital movements of almost $500 million!

A retailer such as Linens 'n Things that experiences an increasing DSI may have purchased merchandise that its customers do not desire or it may lack the clout to transfer some inventory risk to its suppliers. A firm that reports a decreasing DPAP may have come to be viewed as a riskier customer, perhaps prompting its suppliers to impose stricter credit terms. Compared to Bed Bath & Beyond, Linens 'n Things tied up more funds in inventory relative to its cost of goods sold and paid for its purchases more quickly. These supply-chain inefficiencies placed the firm at a cash-management disadvantage that adversely affected its profitability and viability.

SUGGESTED EXTENSIONS

Instructors that wish to provide students with additional opportunities to consider retailers' success at achieving supply-chain economies could add one or both of the following questions. As noted in the Teaching Approaches section, these questions require students to access the EDGAR database to gather financial-statement data.
For question 7, students access financial data for The GAP and American Apparel, a firm "that was supposed to be 'the next GAP'" (Ogg, 2011). As of mid-2012, American Apparel had posted nine straight quarterly losses, and had been considered a candidate for bankruptcy before a cash infusion from a hedge fund.

For question 8, students access financial data for Home Depot and Lowe's. Their calculations will reveal almost identical Excess-Days levels for the two home-improvement retailers despite the fact that Lowe's holds inventory for 10.5 more days than Home Depot. In addition to confirming the importance of examining both DSI and DPAP, this question allows students to consider how a supplier might trade off increased purchases by the retailer with longer payment terms.

7. Search the SEC's EDGAR database to access the 2010 10-Ks filed in early 2011 by The GAP and American Apparel. The latter firm was rumored to be a candidate for a bankruptcy. Calculate Excess Days for each retailer and discuss whether or not your findings are surprising given that one of the firms apparently was in much worse financial shape than the other.

Data retrieved from EDGAR and the resulting Excess-Days calculations are presented in Table 10. As shown there, American Apparel on average held inventory for 230.2 days, or almost eight months prior to its sale. By comparison, DSI for The GAP was 64.4 days, which represented a 72% shorter holding period than American Apparel's. In terms of DPAP, The GAP was able to take 10.2 days longer than American Apparel to pay suppliers. It is not surprising that American Apparel was the retailer considered to be in financial trouble. As observed above in Table 9 for Linens 'n Things, a retailer that is struggling often has had difficulty moving its merchandise and frequently is required to pay its suppliers more quickly.

Table 10: Excess Days for The Gap and American Apparel for 2010

	The GAP	American Apparel
Average inventory	$1,548,500,000	$159,644,000
÷ Average daily cost of goods sold	$24,041,095	$693,370
= Days' sales in inventory (DSI)	64.4	230.2
Average accounts payable	$1,038,000,000	$25,620,000
÷ Average daily purchases	$24,432,876	$794,238
= Days' purchases in accounts payable (DPAP)	42.5	32.3
Excess days (DSI – DPAP)	21.9	197.9

8. Search the SEC's EDGAR database to access the 2010 10-Ks filed in early 2011 by Home Depot and Lowe's. Calculate Excess Days for each firm for 2010 and explain how your findings illustrate why one needs to look at *both* DSI and DPAP to compare firms' success at achieving supply-chain economies.

Data retrieved from EDGAR and the resulting Excess-Days calculations are presented in Table 11. As shown there, Lowe's held inventory for 10.5 more days than Home Depot. However, Lowe's compensated for this disadvantage by taking 11 days longer than Home Depot to pay its suppliers. A focus on only DSI would have led one to conclude erroneously that Lowe's was less successful than Home Depot at achieving supply-chain economies. By incorporating both DSI and DPAP, the Excess-Days metric reveals that the two home-improvement retailers did not really differ on this dimension. The data for these firms support the conventional wisdom that a supplier will often offer extended payment terms to a retailer that agrees to stock more of the supplier's merchandise.

Table 11: Excess Days for Home Depot and Lowe's for 2010

	Home Depot	Lowe's
Average inventory	$10,406,500,000	$8.285,000,000
÷ Average daily cost of goods sold	$122,446,570	$86,747,945
= Days' sales in inventory (DSI)	85.0	95.5
Average accounts payable	$4,790,000,000	$4,319,000,000
÷ Average daily purchases	$123,643,830	$86,945,205
= Days' purchases in accounts payable (DPAP)	38.7	49.7
Excess days (DSI – DPAP)	46.3	45.8

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Bringing Social Media to Small Business: A Role for Employees and Students in Technology Diffusion

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ABSTRACT

Social media such as Facebook and Twitter have been adopted by many large corporations for marketing and promotion, but small businesses have been slow to follow suit, typically because of limited resources to devote to mastering this new marketing media. Employees who have grown up with information technology and social media represent a latent resource that could help small employers incorporate social media into their marketing efforts. In particular, college students in fields like Marketing, Information Technology or Communication among others, who may already be working for a small firm or will become employees after graduating, could play an active role in facilitating adoption of social media by small firms. Entrepreneurship and small business programs especially could support this process by preparing students to act as agents in a process of diffusion of social media within the small business economy.

Keywords: Social media, small business, business education, technology diffusion

INTRODUCTION

Use of social media marketing has become commonplace among large corporations, but the small business sector has been slower to enter the social media world. In this article, we argue that employees using social media in their personal lives, particularly though certainly not only college students, could be a means to accelerate adoption of social media by small enterprise. Many younger employees who have grown up in a social media-rich environment possess an intuitive grasp of how to use social media tools akin perhaps to an earlier generation of mechanically-inclined Americans who took to the automobile with such ease. Business courses are beginning to prepare students to use social media professionally; if coursework could also educate them to view themselves as potential agents of the diffusion of social media among receptive small employers, business education could help to reduce the time it takes small enterprise to incorporate social media in marketing efforts. Our discussion aspires to accelerate that process.

We begin by first defining social media for purposes of our thesis, then recounting enough of the history of social media to highlight the opportunities large businesses have already come to see in it (as is commonly done, we refer to social media as a singular "it" rather than a plural "they"). Next we identify challenges to adopting social media in small business, where resources for technology or training are limited. We discuss how employees might help surmount these obstacles as a resource waiting to be put to use by receptive employers. Finally, we consider how business, marketing, and entrepreneurship education and research could prepare students to play an active role in helping small firms learn to market themselves using social media.

SOCIAL MEDIA IN BUSINESS

"Social media" combines two distinct terms, the first encompassing people and human relations, the second connoting modern forms of communication like television, radio, and of course the internet. Marrying the two gives a basic definition: the building of human relationships via any number of far-

reaching communication mediums. In "Users of the World, Unite! The Challenge and Opportunities of Social Media," Kaplan and Haenlein (2010) trace the beginnings of social media to the late 1990s, when

Bruce and Susan Abelson founded "Open Diary," an early social networking site that brought together online diary writers into one community. The term "weblog" was the first used at the same time, and truncated as "blog" a year later when one blogger jokingly transformed the noun "weblog" into the sentence "we blog." The growing availability of high-speed Internet access further added to the popularity of the concept, leading to the creation of social networking sites such as MySpace (in 2003) and Facebook (in 2004). This, in turn, coined the term "Social Media," and contributed to the prominence it has today (p. 60).

As social media began to take shape, so too did the interest of astute businesses in reaching new markets and consumers via the various social media platforms that were emerging. Quickly enough, perceptive companies saw that MySpace, Facebook, YouTube, Flickr, etc. were more than just a way for young consumers to "hang out" with friends and socialize; they were also becoming hotbeds for product reviewing (or dissing) and formal and informal advertising, all stemming from the existence of a willingly captive audience. As described by Evans in his 2008 book *Social Media Marketing: An Hour a Day*,

They all draw a big crowd, and they all feature – in some form – interpretive adverting. Some of the content platforms complement their basic (free) offering with premium services available for a fee, but the vast majority of users are not paying for these services with anything other than their attention. These are the new billboards, magazines, and TV stations (p. 210).

Through social media, a comparatively inexpensive way was emerging to reach a receptive audience via an interactive, ongoing form of advertising that mimicked classic word-of-mouth promotion, using internet technology. Seeing the potential, corporations in growing numbers began developing blogs, Facebook pages, and Twitter feeds that added social media to the web pages already in their promotional repertoire.

BARRIERS TO ADOPTING SOCIAL MEDIA IN SMALL BUSINESS

Where large companies have the resources and expertise to employ web designers and marketing agencies to create an integrated marketing communication plan utilizing social media, small businesses mostly have had to go it alone. So far, there has been little academic research into how small business is contending with social media. But a growing body of practitioner-oriented writing seeks to educate small employers and managers about social media and encourage them to use it. One article (Robertson, 2011) reports that nearly one in five small business owners are integrating social media into their operations in some form, at this time primarily Facebook and LinkedIn. However another study, by the Guardian Life Small Business Research Institute, suggests that most small businesses still place greater priority on company web sites and utilizing computer software than on social media (Hudson Valley Business Journal, 2011).

That this might be so is not surprising. As cheap as social media may be, adopting it still requires investing time and resources in learning and eventually spending on media, all of which must compete for attention and investment with the demands of current operations. The learning process alone can be intimidating even for small business owners who have invested in web sites and software and understand that technology can enhance productivity and competitiveness. Social media entails entering a realm of marketing and promotion that may overwhelm with its unfamiliarity and sense of uncertainty about how to reach new buyers while competing with larger companies that have vastly more resources. Until social media practices should become clearer and easier to integrate into a business, it is only natural that many

small employers would prefer to continue a traditional reliance on word-of-mouth or local marketing in newspapers or radio, along with web sites if they have them.

A particular hurdle for small business owners who may have to do much of the promotional work themselves is getting accustomed to the two-way character of social media marketing. The initial small-firm approach to internet marketing produced websites and phone listings through Yellow Pages online, but this was different from social media, which involves cultivating a more personal relationship between consumer and enterprise:

With traditional and most online media, the interaction is generally one way: The end user gets to watch or play with something that someone in a position of control has put forth. Too often, that's about as far as it goes. With social media, it's truly participative: The end user gets to shape, create, and share the content. Through participation and response, social reputations are formed: When the context is marketing, these become the active social expression of the brand. This participative development of reputation is a direct consequence of collective action, of *community*. Communities – whether formally built around a specific interest or cause, or informally built through more casual connections – sit the center of the Social Web (Evans, 2008, p. 80).

Mastering this two-way relationship requires small businesses to grasp that social media calls for genuine interaction with the prospective buyer on the other end, a form of word-of-mouth communication with customers through the lens of the computer. There may be no looking into the eyes of the buyer and building a relationship as in the days of mom and pop stores, but social media that truly works – that reaches the audience a business seeks – requires a kindred quality of ongoing interaction, with technology serving as the "eyes." Small employers must embrace the reality that an active presence will tend to be crucial; Evans (2008) asserts that "On the Social Web, your *absence* [sic] is conspicuous. Failing to participate retards the advancement of trust. In fact, it can increase the likelihood of mistrust" (p. 80). Lack of sustained social media communication might be thought of as the modern equivalent of the mom and pop store putting a sign on the door announcing the establishment will be closed for the week with no other explanation.

For all of these reasons, and some others – owners' uncertainty about computer aptitude of employees, or concern about possible liability, data breaches, or leaks of proprietary information incurred through use of social media (Fort Worth Business Press, 2011) – small employers as a class of enterprise are widely hesitant to commit to social media marketing, at least for now. Yet many clearly are committing to it, and it seems inevitable that the percentages will rise.

EMPLOYEES AND SOCIAL MEDIA

The creeping small-business adoption of social media marketing raises the question of how is it happening where it has – more specifically, how are small employers learning what they need to know to begin using social media? No doubt, some are doing it through trial-by-error, while others are hiring consultants to help. But we would hypothesize that employees, especially younger ones, may often be assisting the process, as a natural outgrowth of their interest and personal experience with social media finding opportunities for application in the workplace. In any given instance, the impetus could lie with the employee or the employer. But in either case, it is something that might be enhanced with deliberate cultivation: of willing employees by their employers on the one hand, and on the other by education that seeks to prepare students to help their employers integrate social media into a firm's operations.

Considering employers first, while the employees they hire obviously come in all ages, young people entering today's job market often bring a passion for computer and media technology honed by years of personal experience, if not also by formal training in school. We hypothesize that some small employers

have already been first-movers in capitalizing on this capability and enthusiasm; as lagging adopters learn about social media, will they be inclined to follow suit? Employers are all too aware that many workers are using social media for personal purposes on company time, prohibited or not. The question is how many employers will also see the potential advantages of channeling some of this employee knowledge into business marketing, and how quickly. Its primary benefit so is the one already noted, accelerating the adoption of social media. But in addition, employees who are made to feel valued for their special expertise seem likely to feel greater desire to help the owner incorporate social media as effectively as possible. Simultaneously, there could be a useful deepening of employee knowledge of the business and its products and an enhanced ability to communicate product or service value to customers. In turn, this heightened engagement could contribute to improved workplace morale and productivity, especially if employees also participate in a company's success with some financial reward.

As always, there is a catch for an employer, one that in fact amounts to another potential barrier to adoption that perhaps impedes adoption. When it comes to social media not all employees are alike. In the search for ones who truly can help, owners or managers need to be diligent about distinguishing between people who actually are adept with social media and are interested in bringing them to the firm, versus ones who are gadget or gizmo aficionados who may or may not be especially motivated or able to apply their skills at work. Employees who "play" with social media sites may have little understanding of how they actually work or how the site will be accessed by consumers. Or they may lack the creative ability or business knowledge to use social media to market a small firm, which takes aptitudes beyond technology skills alone. All this points to a further need: for the small business owner or manager to learn enough about social media to be able to identify employees whose can help the firm move into marketing through social media.

For the employer who might be disinclined to make the effort, there is a risk they need to keep in mind: that talented student graduates may not have much inclination to work in companies that are behind-the-times when it comes to social media. Consider this ominous scenario:

> The Net Gener arrives at work, eager to use his social networking tolls and collaborate and create and contribute to the company. For starters, he's shocked to find that the company's technological tools are more primitive than the ones he used in high school. The company he works for still thinks the Net is about Web sites presenting information, rather than a Web 2.0 collaboration platform. And they are surprised, perhaps naively, to learn that corporations have antiquated ways of working. Then the company bans Facebook at the office because it suspects Net Geners are wasting time chatting with friends and throwing digital when they should be working—thus depriving Net Geners of their link to friends, to fun, to coworkers. Pretty soon, the talent heads for the exit (Tapscott, 2019, p. 154).

In other words, as social media marketing becomes more widespread, small firms that choose to defer from it could face a problem of talent starvation as technologically adept job-seekers look for employment in places where their social media expertise is welcomed.

BUSINESS EDUCATION, SOCIAL MEDIA, AND SMALL BUSINESS

Having highlighted the present gap between small business owners and social media-using employees, the question arises of how business education might help to narrow it. As suggested above, it is likely that many employers have already made the connection between marketing and employees who know social media and are trying to marry the two for the benefit of the business. We believe there is an opportunity for business education to facilitate this process in two ways: through developing or enhancing students' knowledge of how to use social media for marketing purposes, which is already beginning to happen in

the curriculum; and as part of that effort, by educating students about how they can use their social media skills to help a willing small employer enter the social media world.

On the curriculum side, use of social media in business operations is now becoming a standard topic in textbooks for marketing, information technology, and business communication courses, if not also in computer science and elsewhere. As an example, a text recently used by one of the present authors in a business communication course (Guffey & Loewy, 2013) devotes a chapter to electronic messaging in which corporate use of social media is addressed and chapter exercises task students to utilize a social media channel to communicate business messages in a variety of contexts. Course assignments completed as blogs, videos, or podcasts are increasingly commonplace. The best courses apply social media in a business context. Such experiential learning is beginning to proliferate within the customary business core courses in marketing, information management, and communication, as well as in some specialized courses. As a consequence, growing numbers of college students are being educated and socialized to regard social media as a basic business tool and are familiar with its use.

Incorporating social media instruction in entrepreneurship and small business management programs might be particularly helpful for advancing its use in the small-firm economy. The authors' institution is home to a well-regarded entrepreneurship program that serves a regional economy consisting overwhelmingly of small companies, with just a relative handful of major corporate facilities. At present there are no social media courses in the entrepreneurship curriculum, but consideration is now being given to introducing social media in a business consulting course, in which students would begin working with client firms to initiate a basic social media marketing program, just as earlier student cohorts helped build company web sites. The entrepreneurship program also hosts an off-campus women's business center which offers business workshops, one of which is about business blogging. If and as the campus entrepreneurship program incorporates social media as an element of the curriculum, the women's business center program would be likely to expand its coverage given close working relationships among staff. Envisioning these local examples replicated across other campuses and entrepreneurship programs suggests how business programs could stimulate wider use of social media in small enterprise nationwide.

The idea that student-employees could have an impact as actors or agents diffusing social media in small businesses would become more explicit if and as social media became part of the content of entrepreneurship textbooks. Relevant practitioner books already exist to guide textbooks, such as *Social Media for Business: The Small Business Guide to Online Marketing* (Brossman & McGaha, 2011). Its availability in texts would make it more likely to be incorporated in courses. But with or without widespread representation in college texts, the idea that students and graduates with social media expertise can play an innovative role in small enterprise can be a topic of instruction for instructors who see the potential for their students to help their employers adopt social media as a marketing and promotional method. The entrepreneurship program at our school does not yet do this in an explicit or formal way, however it long has encouraged students to consider opportunities to take a unique set of skills into employment should they choose that path instead of starting a firm. Social media is one such set of skills that growing numbers of entrepreneurship students possess.

Complementing instructional developments, empirical research could begin investigating connections between employees, students and small-business adoption of social media. As a beginning, students who are working in small firms could be surveyed to see whether any have been involved in adopting social media in their workplaces – more precisely, have employers recognized their skills and sought to use them; or have students seen an opportunity and convinced an employer to act on it? On the other side, small employers with a social media presence could be surveyed to ask how they came to do adopt it and whether employees played any role. Case studies of situations in which student employees have aided an employer's social media efforts could provide detailed insight into what happens, and how. Dissemination

of these research findings might help nurture a climate of greater acceptance of social media within the small-firm economy.

CONCLUSION

Small businesses have been lagging behind large firms are in adopting social media, for a variety of reasons. Eventually, through learning, emulation, easier adoption, falling costs, and spread of research findings, marketing through social media may become so commonplace in small enterprise that the fact will occasion little comment, no more than does having a web site today. But that is not the case as of yet. If the proposition of this paper is valid, social media-savvy employees, especially students with state-of-the-art training, could be of unique benefit to employers to help them start sooner than later to compete in the social media realm. Business education could facilitate this process by actively preparing students to impart what they know about social media to small employers who are open to receiving what students offer. Thereby, business schools could help spread social media methods among small firms more rapidly than would happen otherwise.

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Measuring Multiple Instructional Interventions for Improving Student Writing

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ABSTRACT

This article presents the results of three assurance of learning instructional interventions designed to improve student writing: providing students with detailed writing assignment instructions, a writing tips checklist of common student errors, and a compulsory intervention requiring spelling and grammar review. The study used a sample of 151 students enrolled in a business ethics course and regression analysis to estimate scores on writing assignments as a function of the interventions and other individual student characteristics. Our findings indicate it is appropriate to consider differences in student characteristics when evaluating the effectiveness of instructional interventions.

Keywords: AACSB, assurance of learning, instructional interventions, student writing

INTRODUCTION

The Association to Advance Collegiate Schools of Business (AACSB) accreditation requirements mandate that schools of business wishing to retain, or obtain, accreditation demonstrate mature Assurance of Learning (AOL) processes directly related to the mission and learning goals of the college. Evidence must be presented to AACSB as to how well students are meeting the stated learning goals. Nearly all colleges of business have adopted some form of learning goal related to student writing capabilities. This paper contributes to the literature by presenting the empirical results of three instructional interventions designed to improve student writing, while taking into account individual student characteristics. The three interventions include: 1.) writing assignment instructions that provide students with detailed expectations regarding the structure and content of the writing exercise, 2.) a writing tips checklist of common student errors, and 3.) a compulsory spelling and grammar check requirement.

The challenge to improve college student writing skills is multifaceted, since writing itself is comprised of numerous sub skills (e.g., grammar, punctuation, sentence structure, word choice, style, tone, and proofreading). Additionally, good writing extends beyond mechanics and one purpose of writing assignments is to teach students how to successfully address expectations of a particular assignment, such as following instructions and presenting acceptable content.

Furthermore, the efforts that attempt to study the improvement of acceptable writing skills fall into varying, yet overlapping, theoretical categories. First, pedagogical articles on *how* to improve student writing skills are numerous, although many of the suggestions offered have not been empirically tested nor have any, to date, turned out to be the panacea for an easy fix (Crary, 2009; Hershey, 2007). Second, the literature on the importance of *feedback* is also abundant with subsets of analysis focusing on the amount of and types of feedback and positive versus negative comments (Ackerman & Gross, 2010; Sorenson, Savage, & Hartman, 1993; Walker, 2009). A third area of study involves empirical analysis of specific *interventions* designed to improve student writing skills. While the research study presented here includes both pedagogical and feedback constructs, the effectiveness of interventions is of primary interest. While AACSB does not require the use of sophisticated statistical techniques for assessment purposes, we believe the use of appropriate methodologies can provide additional information that may be quite useful for continuous improvement purposes. To contribute to the assessment literature, our paper is organized as follows: examination of related intervention studies, study design and sample, methodology, results, and conclusions.

INTERVENTION STUDIES

Enos (2010) used a pretest-posttest quasi experimental control group design to assess the effects of the Grammar and Mechanics Diagnostic Assessment (Guffey, 2007) in business communication courses. This dissertation research included multiple interventions over time for two experimental groups and a control group. The data were analyzed

using descriptive statistics and a repeated measures ANOVA, plus additional statistical tests to ensure that the assumptions underlying the ANOVA model were met. Findings indicate significant improvement for students who were enrolled in a course covering the basics of grammar and mechanics. Students not enrolled in this type of course (a different course and the control group) showed no significant improvement between preassessment and postassessment measures.

Although qualitative in nature, Docherty, Tse, Forman, and McKenzie (2010) describe an intensive, collaborative effort to implement a pilot program of writing into large sections of macroeconomics classes. Key elements of this study included: 1.) assessment and feedback, 2.) writing and support materials (e.g., online self-access resources, guides to writing, sample assignment paper, and references), and 3.) voluntary writing workshops. Docherty et al. admit there are complexities involved concerning evaluation of their intervention program such as student self selection and voluntary attendance at the writing workshops. The authors conclude that the writing program had a positive impact on the quality of student writing outcomes; the question remains, however, whether the benefit justified the high costs associated with program delivery.

Pittenger, Miller, and Allison (2006) present a writing assessment study involving the same course and same instructor, but different students, over two semesters. In semester one, students enrolled in three sections of business communication were required to complete a writing task at the beginning of the semester, and again at the end of the semester, that was assessed by EssayPrep (the same evaluators who grade SAT and AP exams). After providing students with the results of the pretest, along with comments on the strengths and weaknesses of their writing provided by EssayPrep, the instructor offered to meet with and help any student with his or her writing skills. No student sought the instructor's assistance prior to the posttest. The results from semester one's experiment discouraged the researchers. In the pretest, 60% of the students scored below satisfactory and to make matters worse, the performance of the same students on the posttest was even lower. These results prompted the instructor to create an intervention for semester two.

The instructor believed the intervention for semester two was necessary due to the following: 1.) students did not take the test seriously because it did not affect their grade, 2.) students did not appreciate the value of written communication, 3.) students could not apply principles of good writing in a different context, and 4.) students required continuous instruction in the classroom with respect to effective writing.

In the following semester, the pretest was again administered and 80% of the students scored below the satisfactory level. However in semester two, the instructor incorporated a deliberate intervention to improve writing effectiveness and included a grade incentive for students to do so. On the posttest in semester two, more than 90% of the student responses were satisfactory or higher. Overall, however, this study tends to indicate that student writing skills can be substantially improved in just one semester.

In summary, empirical assessments of intervention studies are beginning to emerge, even though AACSB accreditation standards do not require more sophisticated statistical investigation. We feel it is important to advance our knowledge with respect to the causal impacts of intervention studies designed to improve student learning. Improved analysis can shed light on whether interventions were actually the cause of differences in performance or whether individual student characteristics were responsible for the outcomes.

Many of the studies that examine the effectiveness of instructional interventions on writing assignment outcomes are based on comparisons between groups that did, and did not receive the intervention. This approach may result in biased measures concerning the effectiveness of interventions if other student characteristics are not considered. Group scores on writing assignments may differ because of the instructional intervention or because the composition of the groups differ with respect to student characteristics that are associated with higher (or lower) scores. For example, scores between groups may vary because one group contains more experienced students or students who are more likely to follow instructions. These students are more likely to receive higher scores regardless of the intervention. However, when merely comparing performance between groups it is not possible to take these individual differences into account. As an illustration, while Pittenger et al. (2006) find substantial improvement in writing skills with their intervention it is unknown how much of the improvement was due to the intervention or to differences in characteristics among students.

An improved method of examining the effect of instructional interventions on writing outcomes is to consider individual student characteristics. A more comprehensive analysis would include relevant measures of the intervention(s) and student characteristics in a regression estimate of writing assignment outcomes. We contribute to the existing literature by estimating writing assignment scores as a function of the interventions, individual student characteristics, and other performance measures that are related to the score on the writing assignment.

STUDY DESIGN AND SAMPLE

Data were collected from four sections of junior-level business ethics taught by the same professor in two semesters, one year apart. The two sections taught in the first semester (hereinafter Semester One) were identical to the two sections taught in the second year (Semester Two). That is, the courses were taught at the same time, same days, same room, same text, same case assignments, and so on.

In Semester One, students were required to write two case assignments, one in the beginning of the semester and one near the end of the semester. The writing assignments required students to analyze two business ethics cases, each containing an ethical dilemma. The ethical dilemma resulted in the necessity for a managerial decision. Students were to assume the position of the manager. Before each writing assignment, students were provided with clear written instructions for preparing their written responses and with a writing tips handout indicating most common student writing errors. The instructions were reviewed and explained once before the writing assignment was due. Detailed instructions for writing assignments are helpful because students are informed about expectations regarding the structure and content of the assignment. These expectations may vary from course to course and instructor to instructor, so providing specific instructions for each class provides more of the guidance that is associated with improved performance. Students were provided specific written directions on how to structure the content and format of their written case responses. The students were instructed to read the case, and then provide answers to the following:

1. Identify the ethical dilemma in this case.
2. Identify the *relevant* facts that caused the ethical dilemma.
3. Identify and discuss the alternatives available to the manager.
4. If you were the manager, what alternative(s) would you choose and why?

In addition to providing the above content instructions, students were given specific directions on how to prepare their responses. Students were instructed to use a Times New Roman, 12-point font, double spacing, and to follow the writing tips handout provided.

The professor's writing tips handout includes a checklist of common student errors and other suggestions that are easy to adopt and are associated with improved writing. This checklist was developed by one of the authors and is based on assessments of student writing from numerous assignments for different courses. As an example of common errors, students tend to abuse the use of pronouns making it more difficult for the reader to grasp content. Additionally, many students confuse homonyms and select inappropriate word choices. These issues, and other common errors, are addressed in the checklist. The writing tips handout also instructs students to run Spelling and Grammar Check, proofread, and correct errors. The professor reviewed the writing tips checklist several times over the semester to reinforce the concepts. Students were also provided with written feedback on their graded assignments.

When the professor observed on assignment two that many students in Semester One were still not taking the time to run Spelling and Grammar Check before turning in their assignments, the decision was made to implement an additional intervention for the next business ethics sections (Semester Two). This experiment would hold all course requirements constant except for an added intervention. Similar to Pittenger, et al. (2006), the professor felt that many students were not taking the necessity for good writing seriously, especially those students who did not, for obvious reasons, run Spelling and Grammar Check before turning in their assignments. Therefore, students in Semester Two were instructed on the use and application of the Flesch-Kincaid Readability Statistics (an option provided in MS Word) and required to complete a mandatory practice assignment. Students received full credit for the practice assignment if the assignment was turned in as directed. Before turning in the practice assignment, students had to retrieve the Flesch-Kincaid readability statistics and turn in a copy of the printout with their assignments. Flesch-Kincaid (FK) is designed to control the readability of written documents (Flesch, 1974); however to reach the point of retrieving the readability statistics students must first run Spelling and Grammar

Check, which was the impetus for this intervention. The motivation was to ensure students ran Spelling and Grammar Check, not necessarily to raise the grade level of their writing, although this would likely be a desirable side effect.

Following the administration of the practice assignment with the FK requirement, and receiving written feedback from the professor, Semester Two students completed the same two case assignments as did students in Semester One. In Semester Two, however, students were required to turn in the FK statistics with both assignments. In order to determine whether the FK intervention had any positive impact, the written cases from Semester One and Semester Two are compared. The same grader evaluated assignments from both semesters and data were collected regarding whether or not the students did the following:

1. Used Writing Tips Handout
2. Proofread Paper
3. Corrected Spelling Errors
4. Followed Assignment Instructions
5. Ran Spelling and Grammar Check/Flesch-Kincaid (Semester Two only)

Research often suggests that skills are acquired through repetition. To allow students time to repeat and learn desired behaviors, we used writing assignment two in both semesters to examine the effect of the FK intervention. The results presented below are based on the second writing assignment. We also discuss, however, the results from an examination of the intervention on the first writing assignment and on the combined scores for both assignments.

Enrollment for Semester One was 104 students. Since some students did not complete the second writing assignment, or had other missing information, the sample size was reduced to 96 students. Enrollment for Semester Two was 67 students. After removing those students with missing information, sample size was reduced to 55 students.

These samples allow us to examine the effect of the three interventions on student writing outcomes. For example, we use data from both semesters to determine if following the detailed instructions or using the writing tips checklist is associated with higher scores on the writing assignments. By comparing scores between semesters one and two we can determine if the compulsory Flesch-Kincaid intervention reduced spelling and proofreading errors in ways that improved writing outcomes. In examining the effect of the interventions, we take into consideration that student performance may vary because of the interventions *or* because of differences in individual student characteristics. For example, business majors may have an advantage over other students due to greater experience and familiarity with business topics and terminology. Similarly, seniors may benefit from accumulated college experience. Consequently, it is important to consider these characteristics when assessing the impact of the interventions on writing assignment outcomes.

METHODOLOGY

To measure the effect of three interventions on writing performance, taking into account relevant individual student characteristics, the following regression model is estimated using pooled data from the two semesters of business ethics:

$$\text{Writing Score} = \beta_0 + \beta_1 \text{ Instructions} + \beta_2 \text{ Tips} + \beta_3 \text{ Flesch-Kincaid Intervention} + \beta_4 X + \mu$$

where Writing Score equals the student's score on the second writing assignment. This assignment was worth 50 points and the score depends on how well the student addressed the content and structure of the assignment as well as the quality of his or her writing. Content/structure instructions and writing quality were equally weighted. Therefore, a student could have produced excellent content in terms of following the instructions, but received a low grade for failing to follow the writing tips handout or failing to proofread. Instructions equals one if the student followed the detailed instructions for the assignment and is zero otherwise. Tips equals one if the student used the writing tips provided by the professor and is zero otherwise. Flesch-Kincaid Intervention equals one for students in Semester Two who received this intervention. This variable equals zero for the students from Semester One who did not receive the Flesch-Kincaid intervention. X is a vector of student characteristics indicating business major, senior class status, gender and whether English is the student's second language. The error term is μ. The model is estimated with a combined (pooled) sample of students from the two semesters. This model specification allows for

a test of the instructions, writing tips and Flesch-Kincaid interventions on writing assignment scores taking into account student characteristics.

The statistical tests regarding the effect of the instructions and writing tips interventions are straight forward. The dummy variables measure the differential score for those students who chose to use these resources. However, there are different ways the FK intervention can affect a student's performance on the writing assignment. These differences affect the specification of the model. For example, the intended route is for a student to run spelling and grammar check, fix any errors and receive a higher score as a result. This situation implies that the FK intervention affects grades on the writing assignment by reducing the number of spelling and proofing errors. Consequently, the appropriate test of the FK intervention is to examine grades on the writing assignment, allowing spelling and proofing errors to vary. That is, to omit measures of spelling and proofing errors from the equation. Alternatively, a student may run spelling and grammar check for the sole purpose of obtaining the required FK writing score. While running the spelling and grammar check is necessary to obtain the FK score, it is not necessary to fix any of the identified errors. In this situation, the student may simply choose to ignore the errors that are identified by spelling and grammar check, or the student may not check his or her work for errors that the software does not identify (such as the use of "manufacture" instead of "manufacturer" or confusing homonyms like "their" with "there"). In this case, the student may complete the FK intervention but not take the steps necessary to improve his or her paper. This situation implies that the intervention may not improve scores by reducing spelling and proofing errors, that these errors will persist and that scores will depend on the number or presence of these errors. Consequently, this scenario implies that measures of spelling and proofing errors should be included in the estimate of writing assignment grades. Consequently, we report results from the estimate of the model presented above with and without measures of spelling and proofreading errors that also affect scores on the writing assignment.

RESULTS

Summary statistics for students enrolled in business ethics classes in both semesters are reported in Table 1. The average writing assignment score for Semester One is 39.7 points while the score for Semester Two is 41.3 points (50 points possible). The difference between scores (1.533 points) is significant at the 0.10 level for a one-tailed test. There are significant differences in other student characteristics between the two semesters. For example, approximately 88 percent of the Semester One class is comprised of business majors while 80 percent of the Semester Two class majored in business. More female and ESL (English as a second language) students enrolled in Semester Two. More students from Semester One revealed evidence of using the writing tips handout and of proofreading their papers before submission. The proofreading variable equals one if the student showed evidence of proofreading the assignment and is equal to zero when papers indicated a lack of careful proofing. The averages indicated that about 65 percent of Semester One students proofread their work while only 55 percent of Semester Two students carefully reviewed their papers. However, the Semester One students also committed more spelling errors and were less likely to follow the instructions for the assignment (the spelling errors variable measures the number of this type of mistake in the assignment). These differences are statistically significant at the 0.05 level. Approximately 15 percent of students from each semester were seniors.

These results suggest that the FK intervention may be responsible for the reduced number of easy-to-fix spelling errors for the Semester Two group. However, the intervention does not appear to have improved average performance on the more challenging issue of proofreading and review. The lower average for proofreading for Semester Two may be due to students relying on the grammar review software instead of conducting their own review. The grader may have identified proofing errors that the software did not. The results reported in Table 1 also indicate that while there are differences between the two semesters, more students overall used the writing tips checklist than followed the detailed instructions. The combined averages for both semesters indicate that 72 percent of students used the writing tips checklist while 34 percent followed the detailed instructions for the assignment. This difference may be rooted in differences in reinforcement. As mentioned above, the writing tips checklist was reviewed several times over the semester while the instructions were reviewed only once before each assignment. The professor intentionally reminded the students of the writing tips checklist and often provided examples from the handout when they spontaneously arose during discussions, for example "ensure versus insure."

Table 1: Summary Statistics for Business Ethics Classes

Variable	Semester One Class Mean	Semester Two Class Mean
Writing Score	39.740 (6.62)	41.273[¶] (6.82)
Business Major	0.875 (0.03)	0.800[a] (0.05)
Senior	0.146 (0.04)	0.145 (0.05)
Female	0.417 (0.05)	0.473[a] (0.07)
ESL Student	0.031 (0.01)	0.109[a] (0.04)
Followed Writing Tips	0.729 (0.05)	0.709[a] (0.06)
Proofed Paper	0.646 (0.05)	0.554[a] (0.07)
Spelling Errors	3.198 (2.98)	2.018[a] (2.19)
Followed Instructions	0.271 (0.05)	0.455[a] (0.07)
N=	96	55

Source: Student data from Business Ethics classes. Standard deviations in parentheses (deviations for dummy variables are the standard deviations of the sample proportions).
[a] The mean for the semester two class is different at the 0.05 level from the comparable mean for the semester one class (two-tailed test). [¶] The mean for the semester two class is different at the 0.10 level from the comparable mean for the semester one class (one-tailed test).

While Semester Two students had slightly higher writing assignment scores that are different at a low level of statistical significance, it is not appropriate to ascribe this difference between the two groups solely to the intervention exercises. For example, we do not know if the higher scores for Semester Two can be explained by the positive effects of the FK intervention, or the greater likelihood of following instructions that offset the negative effects of not using the writing tips or the lower number of business majors. A better method of determining if the interventions are associated with improved writing outcomes is to examine the effect of the intervention on scores, holding other factors that affect writing scores constant.

Regression estimates of writing assignment scores are presented in Table 2. The model was estimated with the sequential introduction of measures of spelling and proofing errors in an attempt to reveal how the FK intervention affects scores on the writing assignments. For example, results for models 1 and 2 indicate that the students receiving the intervention did not receive statistically significant higher grades on the writing assignment when measures of spelling and proofing errors are, or are not, included in the specification (holding other student characteristics constant). The results for model 1 indicate that the intervention did not improve scores by altering the number of spelling and proofing errors. Data presented in Table 1 indicates that Semester Two students had fewer spelling errors, but were less likely to proof their work. These opposing effects on scores may have cancelled each other resulting in a neutral FK intervention impact. Results for model 2 indicate that the FK intervention did not have an independent effect on scores, holding spelling and proofing errors constant. These results indicate that the

observed differences in average writing assignment scores between the two semesters is due to differences in factors related to performance on the assignment (following instructions, using writing tips, etc.) and not due to the Flesch-Kincaid intervention. The results with respect to the FK intervention (for model 2) do not change when this model is estimated for the scores from the first writing assignment, the combined scores from both assignments, the difference in scores between the first and second writing assignments or when the specification included the natural log of the score for the second writing assignment as the dependent variable. These additional results are available from the authors upon request.

Table 2: Regression Estimates of Flesch-Kincaid Intervention and Student Test Scores, both semesters.

Dependent Variable = Score on Writing Assignments for Classes with and without Intervention.

Variable	Coefficient Model 1	Coefficient Model 2
Flesch-Kincaid Intervention	0.390 (0.43)	–0.281 (–0.33)
Business Major	3.094*** (2.61)	2.354** (2.21)
Senior	1.020 (0.85)	0.852 (0.78)
Female	1.255¶ (1.45)	1.108¶ (1.44)
ESL Student	–0.256 (–0.14)	0.872 (0.53)
Used Writing Tips	3.803*** (3.80)	1.785** (1.96)
Followed Instructions	7.629*** (8.30)	6.922*** (8.37)
Proofed Paper	–	2.049** (2.24)
Spelling Errors	–	–0.704*** (–4.04)
Constant	31.529*** (22.80)	34.820*** (20.39)
R^2 (adj.) =	0.424	0.543
F =	16.78***	20.83***
N =	151	151

Source: Student records from Business Ethics. T-values in parentheses. *** Significant at the 0.01 level, ** significant at the 0.05 level, * significant at the 0.10 level (two-tailed tests). ¶ Significant at the 0.10 level (one-tailed test).

Other results reported in Table 2 indicate that, depending on the model, business majors score from 2 to 3 points higher on the assignment compared to non-business majors. This difference is statistically significant at the 0.05 level or less. Female students scored about 1 point higher and this difference is significant at the 0.10 level (for a one-tailed test). Seniors and ESL students did not have different scores, in terms of statistical significance, than other students. Those who followed the instructions scored approximately 7 points higher on the 50 point assignment while those who used the writing tips scored from about 2 to 4 points higher (depending on the specification). These differences are statistically significant at the 0.05 level or less. While following the instructions had a larger impact on scores compared to using the writing tips checklist, data from Table 1 indicate that relatively fewer students followed the instructions. These findings suggest that if more students had followed the instructions, perhaps encouraged to do so through more review and reinforcement, average scores on the writing assignment would be higher. Other results for Model 2 indicate that those who proofread their papers received 2 more points on the assignment while another spelling error reduced scores by slightly less than one point (0.07 points). Finally, the results of a Chow test indicate equality of coefficients when Model 2 is estimated separately for the two semester samples (without the FK dummy variable). The computed F statistic for the Chow test is 0.25. The results of this test indicate that it is appropriate to pool the data from the two semesters.

CONCLUSIONS

We find that providing clear instructions on the specific requirements of writing assignments is associated with improved outcomes. Expectations regarding the structure and content of a writing assignment vary from course to course and professor to professor. Time constraints may limit the ability of students to adapt to different expectations and part of the source of poor writing scores may be rooted in this issue. Detailed instructions provide focus on expectations and also allow students to spend more time on other aspects of writing. The use of detailed instructions may be common in business communications classes, but are perhaps used less often in upper division courses. Providing detailed instructions is an easy and common sense approach to improving writing. Providing an easy-to-use writing tips handout that identifies common writing errors is also an effective way to improve performance on writing assignments. Our results indicate that providing writing tips and clear instructions can be introduced with positive results within one semester.

Review and reinforcement of writing concepts play key roles in getting students to use the resources that are associated with improved performance. Incentives are also important and it is vital to structure incentives carefully to direct students to the desired outcome. Our compulsory instructional intervention designed to get students to check spelling and to proofread was not effective in improving writing. This intervention may have created the wrong incentive and students may have only completed the part that was easiest (spelling check) or pursued what was strictly required without addressing the desired outcome.

Finally, our research indicates that it is appropriate to consider differences in student characteristics when evaluating the effectiveness of instructional interventions. Basing the effectiveness of an intervention on different outcomes between groups may yield biased results. For example, we find that average scores between two groups of students differ in a statistically significant way. This may be interpreted as suggesting that the compulsory Flesch-Kincaid intervention was effective in improving writing. However, regression estimates that include other factors that are associated with performance indicate that students who participated in the intervention did not have different outcomes. Regression analysis can be readily applied to the study of instructional interventions since much of the necessary data on student characteristics and writing outcomes is readily obtainable.

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Best Practices in Initiating Online Programs at Public Institutions

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ABSTRACT

Online enrollments continue to increase with growing demand, perceived flexibility, and widespread use of technology being major contributing factors. As enrollments increase, new trends and issues are emerging for the student in this educational environment, and even more challenges for the instructor and administrator. This article briefly presents a literature review of online education trends, particularly in higher learning. It then examines best practices in developing and sustaining online education programs, from the experience of the authors in a public university. The article also describes successful methods the authors have adopted through experience in teaching online courses at a small AACSB-accredited business school in the United States

Keywords: Online Education, Online Learning, Online Course Design, Web-based Courses

INTRODUCTION

Online education is becoming increasingly common in schools, colleges, and in the corporate training world (Kearsley G, 1998). The number of students enrolled in one or more online courses now exceeds six million (Babson Survey Research Group & College Board, 2011). In higher education, the impact of the economy has led to increased demand for face-to-face and online course offerings, with the increase in demand for online courses being greater than the demand for face to face classes – and there is no compelling evidence that the robust growth is anywhere near its end (Allen and Seaman, 2010).

The growing demand for online courses is occurring at the same time that higher education in the United States is evolving. External pressures are converging to challenge the traditional mode of providing higher education, particularly in public institutions. Decreased state funding, escalating tuition, a depressed economy, advances in technology and techno-literacy, and students' expectations of convenience and flexibility are major external drivers of change. Simultaneously, there are internal pressures to drastically reduce costs and increase revenues in public universities and colleges. These external and internal pressures combine to influence change in the traditional modes of teaching students. Online programs can be a highly successful approach to meet the demands of an escalating number of students while also reducing costs and generating revenue to provide quality education.

Thus, modes of delivering instruction in higher education are evolving. E-learning in online and hybrid courses and the use of social media and mobile technologies are examples of non-traditional, pedagogical approaches to current challenges. This article presents the experiences and best practices of online programs in the Department of Business at the University of Wisconsin-Parkside (UW-Parkside) located midway between Chicago and Milwaukee. UW-Parkside has been continuously expanding its online offerings for two decades. The Department of Business has been the leader in this effort, and its successful online programs are discussed in this article.

A brief literature review of online education is presented first, followed by guidelines for initiating and sustaining online programs, including collaborative online programs. Also, given contemporary funding challenges confronting public institutions of higher learning, this study proposes an innovative way to develop online programs with dwindling resources. Best practices in the administration and teaching of online business courses in multiple programs are also examined. .

LITERATURE REVIEW

Online enrollments in the United States have continued to increase in the last decade, from 9.6% of total enrollment in Fall 2002 to 24.1% in 2008 to 31.3% in 2011 (Allen & Seaman, 2010, 2011; Babson Survey Research Group &

College Board, 2011). Perceived flexibility, associated with learning and satisfaction in online classes, is a major factor for students choosing to enroll in web-based courses. Students are more likely to enroll if they can benefit from both the time and place flexibility that the online medium offers (Arbaugh & Duray, 2002). Students value the flexibility to arrange schedules like work, school, home, and social lives (Mahoney, 2009). Although some students such as military personnel deployed stationed overseas might not prefer online classes, they take them as the only option to continue their education (Jenkins,2010). Indeed, there has been tremendous growth in American active-duty soldiers enrolling in online courses with 60 percent taking online courses in 2011 versus only 15 percent a decade ago (Peter, 2011).

In the United States, online learning in higher education grew at an average annual rate of almost 19 percent from 2002 to 2008, with an estimated total of about 4.6 million students having taken online courses in Fall 2008 alone. This enrollment reflects a 17 percent increase from Fall 2007, a jump that is much higher than the 1.5 percent growth in the overall higher education student population during the same period (Allen & Seaman, 2010). Further, in 2011 more than 6.1 million students have taken at least one online course, an increase of 560,000 from the previous year (Babson Survey Research Group and College Board, 2011). These tremendous increases in online enrollments continue unabated.

Many more statistics can be cited, e.g., fifty-nine percent of all colleges rated online learning as essential to their overall strategy in 2009 and that increased to 63 percent in 2010 (Allen and Seaman, 2010). It further increased to 65% in 2011 (Allen & Seaman, 2011). Among public and for-profit institutions, more than 60 percent rated online learning as essential, compared with less than 40 percent of private, non-profit colleges. Generally, the larger the college, the more important online learning was to its strategy (Carlson, 2004). Seventy percent of colleges reported that competition for the growing pool of students interested in online learning is continuing to increase (Kolowich, 2009). The 21% growth rate for online enrollments far exceeds the 2% growth in the overall higher education student population (Allen and Seaman, 2010). Three-quarters of institutions report that the economic downturn has increased demand for online courses and programs, with 31% of all higher education students taking at least one online class (Allen & Seaman, 2011).

UW-PARKSIDE DEPARTMENT OF BUSINESS – A CASE STUDY

The University of Wisconsin-Parkside was founded in 1968 primarily to serve the population in southeastern Wisconsin. Many students from northeastern Illinois (northern Chicago suburbs) are also enrolled at UW-Parkside. The university offers undergraduate and graduate degree programs in traditional, web facilitated, hybrid, and online settings. The 700-acre picturesque campus is located in Somers, Wisconsin, just a mile from the Lake Michigan shoreline. UW-Parkside has 125 full time faculty members, and the faculty-student ratio is 1/19. The Business Department has the largest enrollment in the University with almost 900 undergraduate business majors and 100 graduate students in the MBA Program as of Fall Semester, 2011. The annual UW-Parkside budget is approximately $71 million (about 40% state-supported). The university is accredited by the North Central Association of the Higher Learning Commission (University of Wisconsin-Parkside, 2011). The undergraduate business and MBA programs are accredited by the Association to Advance Collegiate Schools of Business-International (AACSB). The department is growing in enrollment, recording more than 20% increase from Fall 2006 to Fall 2011. With nearly 100 MBA students, it is the largest graduate program in the University and recorded continuous double-digit increases of enrollment from Fall 2005 to Fall 2011. Combined, the enrollment has an approximate growth of 5% per year. The department awards the most degrees in the University with 135 Business & MIS graduates per year over the past 10 years, 5 years being the average time to graduate (w/3.14 GPA). The department also offers 7.3 degrees annually per full time equivalent faculty member (second highest in University). A total of 91% of Business graduates are employed within six months of graduation and 95% of MBA students are employed upon graduation (University of Wisconsin-Parkside, 2010).

ONLINE TEACHING FORAY

Volery and Lord (2000) identified four reasons that institutions embrace online education: Expanding access, alleviating capacity constraints, capitalizing on emerging market opportunities, and serving as a catalyst for institutional transformation. Historically, the first and second categories are the primary reasons for explosive growth of online course offerings at UW-Parkside. Currently, however, all four reasons are driving online course increases across disciplines at UW-Parkside.

The Department of Business at UW-Parkside offers the largest number of online classes. Online courses were created more as a solution to solve a need for students rather than a new trend to follow. Prior to 2001, UW-Parkside used to offer all MBA prerequisite courses, required courses and electives on campus in face-to-face classes, and the department had a difficult time staffing these courses. Thus, the department struggled to have a faculty size that would match the students' need for increased electives.

Consequently, UW Parkside partnered with UW-Eau Claire, another school in the University of Wisconsin System, to offer distance-education courses. Collaboration through distance-education classes in the late 1990s involved a real time compressed video format. Computer network technology was not adequate and software to teach online classes was not available. As software and technology improved, classes became more internet-based and moved away from the video feed. Collaboration with UW-Eau Claire and other UW campuses allowed the universities to share faculty resources, freeing more time to teach onsite electives. The consortium has doubled in size and what started as modules that were offered once a year, now have to be offered every semester as classes have become full. From the Consortium alone, the department now makes about $200,000 of annual revenue. Further, the collaboration enhanced the students' elective choices through the creation of online electives. Subsequently interest in online courses increased and the number of online courses offered increased from 3 in 2004-05 to 16 in 2008-09. Some courses are currently in the development stage. During the same period, the department experienced a dramatic increase in enrollment from 5 in academic year 2004-2005 to 284 in 2008-09. Over the course of this five year period in initiating, setting up, collaborating, developing, hosting and teaching online courses, we attempt to list the things that worked in developing and refining our courses and what we learnt as a result. The following sections are divided as a) Guidelines for initiating and sustaining online programs b) The administrative/Institutional best practices that worked c) The individual best practices that we as faculty developed and evolved over the period of teaching specific courses:

INITIATING AND SUSTAINING ONLINE PROGRAMS

Guidelines for initiating and sustaining online programs address the question: How do we achieve enrollment growth while maintaining quality programs with limited resources? This is a particularly critical question for institutions of higher education given the tremendous budget cuts in higher education. Allen & Seaman (2011) report that 'for-profit' institutions have most likely included online learning as part of their strategic plans.

The University of Wisconsin System (UWS) is also facing the same question. The last budget deficit in Wisconsin was more than $5.6 Billion. Due to the huge state budget deficit, all of the UWS institutions face increasing budget cuts. At the same time, Wisconsin is ranked in the top ten in the nation for 2 year (associate) degree holders, while it ranks only 35th in the number of Bachelor's degree holders. This large number of 2-year degree holders in Wisconsin often wishes to pursue a four year degree, because a four degree enables increased mobility in their careers. However, many of the 2-year degree holders are working, non-traditional students and commuting to a campus is difficult. For such students, online degree completion programs are very appealing. Online courses are also very appealing in the summer time, when students are likely to work full-time or pursue an Internship. So, instead of spending time in the classroom during the day, summer online courses enable students to work in daytime hours or evenings, and complete coursework online whenever it is most convenient for them.

Collaborative Online Programs

An emerging trend in online programs because of budget cuts and resource limitations is to launch *collaborative online programs*. In the US, many institutions have joined consortia to be able to enhance their market position (Wende, M van der 2002). In collaborative online programs, a few campuses within the larger university system launch a degree completion program together. For example, four campuses within the UW system recently launched a collaborative degree program in sustainable management (SMGT). The SMGT program is a degree completion program mainly intended for 2 year associate degree holders. Students with a two year associates degree in arts or sciences are waived their general education requirements at the UW campuses. These students need only take 21 three-credit courses (or 63 credits) to complete the degree program. Since four UW campuses collaborate on this program, each campus is responsible for approximately five to six courses (15 to 18 credits), which requires far less resources for each campus than offering a full-fledged degree program. Such collaborative programs can be designed so that each participating campus confers the degree on its own, while the students have the option of choosing the campus from which they wish to get their online degree. Thus the whole collaborative program is in the catalog of each of the participating campuses. Such collaborative programs may become even more common-place in future.

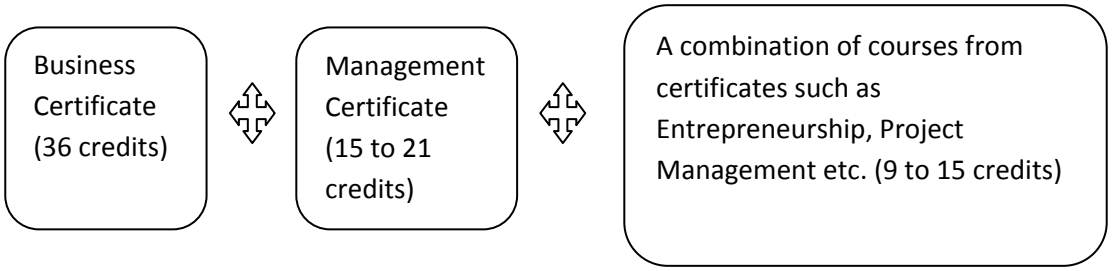
There is significant initial effort in launching such collaborative programs, since the program needs to be approved on all participating campuses, and faculty on different campuses need to work together to arrive at the common learning goals for the programs, and providing instructional consistency among all courses regardless of the campus affiliation. Once the program is in place, issues such as Higher Learning Commission accreditation need to be worked on by participating campuses; perhaps one campus can be designated as a lead institution to lead the accreditation related efforts. If the program is offered out of a business school, then it is preferable that all participating institutions have the same accreditation (e.g. AACSB accreditation) so that it is easier to bring the new program under the purview of accreditation.

Developing Online Programs with Limited Resources.

Many public institutions are lagging behind in offering online courses, while private institutions such as the University of Phoenix have become popular in offering online programs. Allen & Babcock (2011) also report that although both private and public non-profit institutions that report that online learning is critical is increasing each year, the percent change for private show far greater increases. For a public university to venture into online programs, one of the easier paths is to offer collaborative online programs discussed above. Investment in an entire online degree program is clearly higher than for limited courses and online programs are still in the organizational periphery of institutions (Wende, 2002). If it is difficult to participate in collaborative programs, a public institution may need to begin slowly because of limited resources.

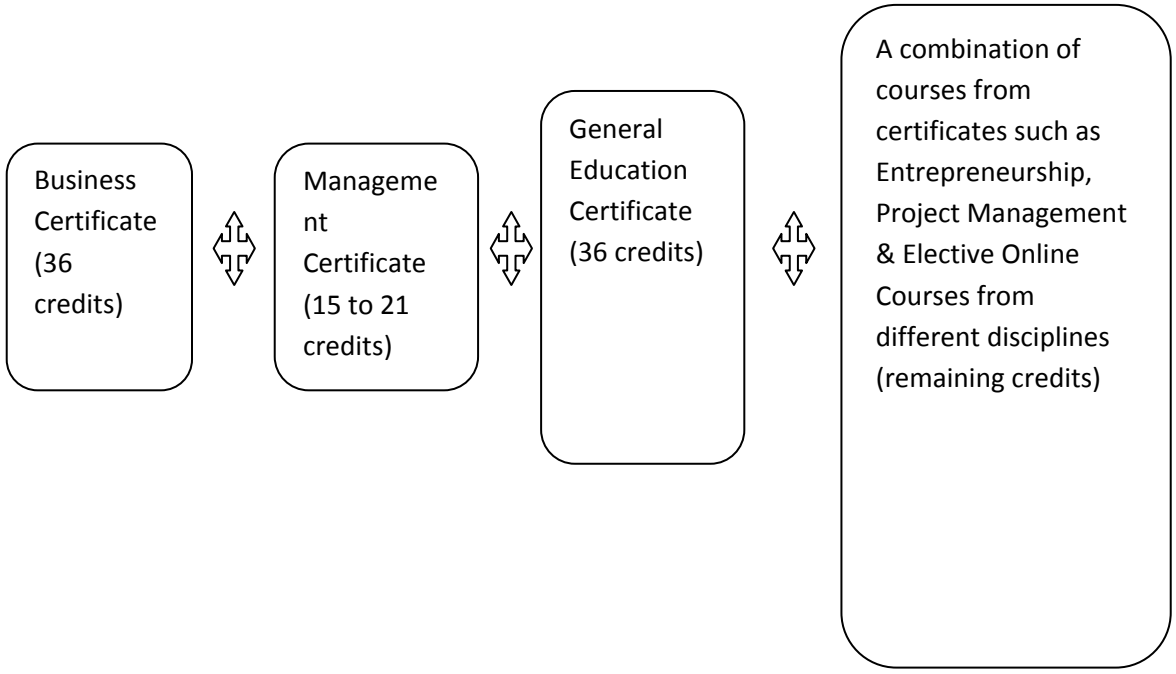
Hypothetically, consider this more innovative example of offering a bachelor's degree in business management. The business school in a public university can start by offering a business certificate (or a business minor for current students pursuing a different major) completely online. The business certificate will be approximately 36 credit hours and is comprised of lower level and upper level business foundation classes. Once the business certificate is implemented, the revenues generated from this program can be used to launch a General Education certificate, with approximately another 36 credits. Similarly, if certificates related to business program such as Entrepreneurship or Management or Project Management are launched, then students can complete a degree using a combination of these certificates. For example, a student with a two year associate degree in arts/science will be able to take the certificates shown in Figure 1 below to earn a four year degree, since these students do not need to take general education classes.

Figure 1: Degree Completion plan for a 2-year degree holder in Arts and Sciences.



A student who needs 120 credits to graduate including general education classes, can take three different certificates as shown in Figure 2 below:

Figure 2: Degree Completion plan for a student without prior college credits.



If campuses collaborate, it is possible that each campus offers one of the above certificates, thus offering a component of the degree program.

ADMINISTRATIVE / INSTITUTIONAL BEST PRACTICES

Several best practices that a campus administration needs to implement while launching online programs include the following:

(1) Increase awareness amongst faculty concerning the benefits of online programs, from a necessity perspective and quality viewpoint on campus. This can be achieved by organizing workshops or forums on integrating online components in learning and can be organized by teaching/learning centers or through guest speakers. Obtain support from key stakeholders - faculty, staff, students and the local community.
(2) Provide abundant training for faculty in designing, developing and teaching online courses. Training needs to include features such as video recording, narrations of lectures over power-points, use of social media, and other advanced technology features.
(3) Obtain synergy by offering some sections of face-to-face classes in the online format and using the online sections for new degree/certificate programs. Additionally, faculty new to online teaching can be encouraged to offer hybrid sections of their classes, where a week or two of classes are offered online.
(4) Provide significant student support structure in terms of advising, registration, and technical assistance. For collaborative programs, a centralized unit that offers these services may be preferable.
(5) Differentiate the fee structure between face to face and online courses; campus administration needs to arrive at a pricing model that is competitive with other programs. The additional fees for online courses should be clearly communicated to the students.
(6) Launch an effective marketing program for online programs that reaches out to intended audiences such as employees at local businesses, prospects with two-year degrees, and non-traditional students with significant work/family responsibilities.
(7) In terms of actual implementation of the launch, institutions need to be clear about what courses must be put online and why. Ideally, these plans should support the strategy of the University and the department, as well as logically support the online format.

(8) Have clarity, buy-in, and consensus on how online courses will be supported. For example, will it be in-house technology or does it need to be outsourced?
(9) A clear understanding of who will teach online classes and how it will be factored into teaching load must be established Given the intense time commitment for online teaching, administrators should resist the temptation to 'go for broke' size-wise and also ensure equity.

Our experience in beginning the Consortium MBA program was to use an external resource, Learning Innovations (LI), a company that focused on online education. LI supported the creation and design of courses with good online pedagogy and a consistent format that was attractive to the user. LI had their own servers that were staffed 24 hours/day. Also, LI handled many logistics such as coordinating students registering across four different campuses. Although we initially partnered with Learning Innovations, at a later date, the Consortium decided to discontinue the partnership. The consortium developed their own expertise and now hosts the Consortium classes on servers managed and located on one of the Consortium partner's campus - UW-Eau Claire. At UW-Parkside, we continued using LI for some of the courses developed by our own faculty like the new degree program in Sustainable Management that launched last year. For that course, our faculty received substantial support from LI staff, ranging from course design to shooting video clips on sites chosen by the instructor. The Sustainable Management faculty continues to refer all student issues that deal with technology to Learning Innovations, and those are handled quite efficiently.

CONCLUSIONS

The landscape of higher education is rapidly changing and constantly evolving, in part due to the dramatically increasing demand for online programs. Online courses are here to stay. Public institutions are grappling with challenges of providing both online and face-to-face programs with limited resources. While many public institutions find it difficult to shake off their "academic inertia" and move towards online programs, they may soon need to offer a significant number of online programs for their own survival. Although there have been several successful efforts in collaborative online programs, there are also instances of consortia that have not survived. Fang Zhao, 2003, mentions 'Universitas 21', a consortium of 18 Universities with 500,000 students that dissolved. For consortia to succeed, it is better to start small and emphasize on quality courses with rich content.

This paper presents a number of guidelines and best practices to assist in the development, design, and implementation of online curricular offerings. The insights provided in this article should help instructors, administrators and decision makers in colleges and universities, especially public institutions, to develop more successful online programs.

Future research will include more effective ways to assess the quality of online courses and student learning in the virtual classroom. Assessment, accreditation, and the establishment of consistent standards for online courses are currently being discussed and studied as areas of major concern (Chronicle of Higher Education, November 11, 2011 issue).

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The Integration of Portable Technology to Enhance Lifelong Learning Skills

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ABSTRACT

The purpose of this research was to evaluate whether or not Arabic female students perceived some benefits of using iPods as a learning tool. The project was conducted over a six week period. Female students from the College of Business and Economic and the English Foundation program were provided with an iPod Nano to use anytime at their convenience as a learning tool. The task required that all student access iTunes to select audio-visual resources that they thought would be suitable to deepen their understanding of the course materials. Using case study research methods, the data collection approach included a weekly survey to record their daily use of the iPod. Four hypotheses targeting iPod use were defined. The findings indicate that for these particular groups of Arabic female students using iPod as a learning tool was beneficial. The evidence warrants further research in the constraints and affordances of mobile technology, as experienced by Arabic students.

Keywords*:* iPod, Mobile Technology, System Acceptance, Information Technology, Persian Gulf Cooperation Countries, Arab female student

INTRODUCTION

Since its appearance on the market in 2001, iPod technology attracted research interest on the integration of this technology in various learning environments from Australia, to Ireland, to the US and Taiwan. Scholars gathered data to assess the use of podcasting, audio and/or visual resources available on the web, as a learning tool in the classroom. Findings indicate that podcasting can be used for developing academic English (O'Bryan & Hegelheimer, 2007), to stimulate undergraduate students' independent learning in Japan (Gromik, 2008), to enhance students' appreciation of political philosophy (Woodcock & Duckworth, 2010), to provide learning material to dermatology departments in the US (Alkhan, Kaur & Feldman, 2010) as well as to deliver training videos to PhD students (Lawlor & Donnely, 2009) and to assist children with Autism (Cihak, Ayres & Smith, 2010). The literature has extensively reported on teachers recommending certain iTunes audio/visual resources for students to access either on their computers or mobile devices to deepen their understanding of a particular issue. The objective of this research is to document the use of both iPod and iTunes by female undergraduate students at a university in Qatar.

LITERATURE REVIEW

In educational environments, the iPod has been used as a tool to deliver supplementary course content, enabling students to view or listen to lectures on their mp3 players anywhere and anytime at their convenience (Evans, 2008). Cebeci and Tedka (2006) provide explanations for creating appropriate learning resources for delivery on iPod devices. Lawlor and Donnelly (2010) contribute to the discussion by assessing the type of formats that postgraduate students prefer to develop their communication skills. Such evidence assist content producers to provide "accurate, objective content" (Alikhan, Kaur, & Feldman, 2010). Such teaching approach places the iPod and iTunes as prescriptive services whereby the teacher creates and prescribes a particular dose of learning materials to enhance students' knowledge of a particular content.

Research questions have investigated iPod affordances as a tool for enhancing revision (Evans, 2008), to deepen participants' "knowledge and/or skills" (Ragusa, Chan & Crampton, 2009), and to confirm that iPod/iTunes based learning leads to better student performance and content comprehension (McKinney, Dyck, & Luber, 2009). Research on language learning and mp3 technology has employed similar strategies to disseminate complementary learning materials to learners (O'Bryan and Hegelheimer, 2007). Gromik (2008) has argued that students could actually be entrusted to self-select their English learning materials from iTunes. This is a shift away from the complementary prescriptive approach.

The purpose of mp3 technology and mobile learning is to eventually empower subscribers to become efficient viewers of content related to their educational field or interests. Few articles have reported on students' independent selection of content for autonomous learning.

Therefore this research project was designed to investigate Arabic female use of iPod as a tool to learn independently. Two groups of female university participants were selected.

RESEARCH PROPOSITIONS

Prior students' needs analysis revealed that Arabic female students were familiar with mobile technology (Gromik, 2010), but little was known about their use of such technology. The objective of this research was to understand and observe students' use of iPod Nano devices to study independently. Evans (2008) evaluated the benefits of iPod technology in terms of the time students spent studying with the device, the affordances of learning with such tool, the amount of time learners spent to understand a particular material and student-teacher relationship due to podcasting. Evans' comments guided the four hypotheses considered for this research, which are as follows:

P1: There is a difference of ease of use of iPod/iTune technology between Foundation Program (FP) and College of Business and Economics (CBE) students

P2: There is a difference between use of iPod/iTune technology outside classroom between FP and CBE students

P3: There is a difference in selecting iPod/iTune learning content between FP and CBE students

P4: There is a difference in use of iPod/iTunes for improving independent learning skills between FP and CBE students

The literature on iPod use in the classroom has seldom investigated whether or not participants with academic experiences behave differently in relation to familiarity and ability to use the technology than their peers with no prior academic experiences. The literature asserts that iPods are user-friendly, however little is known about Arabic female interaction with iPods. Proposition 1 addresses this issue to ascertain whether or not the technology is user-friendly and if this plays some influence on learning.

Reports on mobile learning have suggested that participants do take the time to study outside the classroom. However, Shudong & Higgins (2005) have argued that society is filled with distracters and limitations that affect student and technology performance. Proposition 2 aims to ascertain whether or not students with different academic background and experiences will use technology in a similar fashion outside of class time.

Investigators have for the most part provided all the necessary learning material to iPod users. In contrast, Gromik (2008) has suggested that undergraduate and postgraduates students are mature enough to be entrusted with searching for podcasts that would suit their learning needs. The third proposition considers whether or not students are able to search and select material relevant for their studies.

Students are happy using technology, but seldom are personal experiences reported. The last proposition investigates if using iPods/iTunes engages students to consider the learning strategies they utilize. In the case of Taiwanese students, Ho and Cho (2009) found that their participants did not recognize any learning benefits of using podcasts. In contrast, Abdous et al. (2009) reported that learning with podcasts had a positive effect on his participants' study habits. Walls et al. (2010) report similar findings indicating that podcast did contribute a bit to learning outcome. However both Abdous et al. and Walls et al.'s research did not investigate the study habits as micro skills. For example could using iTunes resources and/or an mp3 player improve note taking skills? McKinney et al. (2009) suggested that there was a correlation between viewing podcast content and taking notes. The aim of proposition four is to investigate whether or not the use of iTunes/iPods is conducive to improve students' learning skills.

DATA COLLECTION & RESEARCH METHOD

First, in order to test the survey items, a pilot study was conducted with ten students. These respondents felt that survey was a little difficult to complete. Based on this feedback, changes were made to the layout of the questionnaire, with a view to improve readability, to reduce the amount of time to answer the survey and to increase the reliability of respondents.

Thereafter, two groups of female participants at a large university in the Gulf region were selected. The first group was 10 Foundation Program (FP) female students enrolled in the English Foundation. The second group was

comprised of 50 female undergraduate students enrolled in College of Business and Economics (CBE) principals of Management Information Systems (MIS).

Participants were informed that the survey was anonymous, participation was entirely voluntary, and response would be secured as per university confidentiality policy. Without much encouragement, participants are less likely to return all surveys (Burns, 2000). Therefore data for this study was gathered by a weekly paper-based survey collected in class, thus increasing the return rate. Sixty surveys were distributed weekly, and the return rate was 90%. However, since some respondents missed significant parts of the survey (i.e., perception and/or demographic questions) they were taken out of the study. The total valid sample for analysis was 53 (FP=9, CBE = 44).
The students were provided with an iPod Nano each, a weekly survey, as well as with a list of iTunes audio-visual resources relevant for the course topics. Students were informed that the purpose of the research was to understand their use of the iPod and that they had to regularly complete and return the weekly survey.

Students were informed to use their iPod to view or listen to iTunes content anytime anywhere as often as possible at their convenience and to fill in the survey to report their use and opinion of such learning approach.

The survey used contains of few sections: Demographic information: including questions on educational level, nationality, and whether participants have or used iPod/iTunes. Perception questions: A section on Five-point Likert-scale questions pertaining to attitude, intention to use, iPod and iTunes weekly use, content of audio/video listened/watched in iPod/iTunes.

It should be pointed out that while some of the participants may not be familiar with iPod features owing to lack of iPod experience, other respondents may have prior exposure to iPod. To handle this difference, at the beginning of the course both groups were provided with one training session to demonstrate the process for downloading iTunes, searching for content, and synchronizing the new content to the iPod. All students were provided with the same guidelines and assistance, however; technology support was provided to students experiencing extreme difficulties.

DATA ANALYSIS

The responses revealed that while 77% of the participants were Qatari nationals, 23% were non-Qatari. A small percentage of participants (22%) had used iPod previously. This may affect students' experience and responses on the survey, but these researchers did not think that it would jeopardize the reliability of the findings. Once the students started using the iPods, it became apparent that while 17% reported using only iTunes to access learning materials, 83% of the participants used their iPods to view these resources. In addition, while 77% of the participants used the iPods provided by the researchers, 23% indicated that they would prefer to use their own iPod mp3 players. They explained that they wanted to learn more about the capabilities of their mp3 player.

Reliability Analysis

Once all surveys were collected, The SPSS software was used to calculate descriptive statistics, reliability coefficient and t-test. Internal consistency for each of the four propositions was measured in the questionnaire with the reliability analysis using Cronbach's alpha coefficients (Hill and Lewicki, 2006). Reliability is a measure of consistency and gives the properties of measurement scales and the items that make them up. It provides information about the relationship between individual items in the scale, and tests the extent to which a set of questionnaire items accurately measures the same variables. The Cronbach Alpha for ease of use questions was 0.728 (6 items), for outside classroom use was 0.927 (10 items), for choosing content was 0.681 (4 items) and for independent learning skills was 0.76 (6 items) which are all above value acceptable 0.65 (Armstrong & Laschinger, 2006; Lake, 2002; Laschinger & Leiter, 2006).

RESULTS

In the findings of the proposition results, an independent-samples t-test was conducted to compare the related group of questions which related to each proposition. Independents-samples t-test was chosen to assess whether the means are statistically different between two groups. This analysis is appropriate whenever you want to compare the means of two groups, and especially appropriate as the analysis for the post test for only two group experimental design. The statistics t-test allows to answers questions by using the t-test statistic to determine a p-value that indicates how likely we could have gotten these results by chance. By convention, if the p-value is a less than 5% chance of getting

the observed differences by chance, we reject the null hypothesis and say we found a statistically significant difference between the two groups. The results for each proposition are presented separately below.

Proposition 1 investigates if there is a difference of ease of use (EOU) of iPod/iTune technology between Foundation Program (FP) and College of Business and Economics (CBE) students. As shown in table 1, there was not a significant positive association in EOU of iPod/iTune between the Foundation Program (FP) Female Student and College of Business (CBE) female students.

Table 1. Mean, Std. Dev, t-test, significant of EOU variables

Satisfaction Method	CBE (n1=44)		FP (n2=9)				
	Mean	Std. Dev.	Mean	Std. Dev.	t	Sig (2-tails)	Status
Have problem with iTunes	1.886	.321	1.666	.500	1.691	.236	Retained
Have problem with iPod	1.892	.2893	1.850	.000	0.433	.667	Retained
Time spent on using iTunes	1.250	.438	1.111	.333	0.897	.374	Retained
Time spent on using iPod	1.512	.476	1.510	.000	0.016	.972	Retained
I give up if I couldn't find anything	1.840	.369	1.888	.333	-0.36	.706	Retained
I take rest and try again if I couldn't find anything	1.636	.486	1.888	.333	-1.48	.076	Retained

The t-test did not reveal a statistically reliable difference between the mean number of EOU that the CBE student has (M = 1.88, Std. dev = 0.32) and that the FP student has (M = 1.66, Std. dev. = 0.50), t = 1.691, p = 0.097, a = 0.05. This indicates that students from both groups did not experience problems with using iPod/iTune and they were more likely to use iTune/iPod. In addition, it implies that if students from both groups do find problem with iTune/iPod, they are not going to give up, instead they are most likely to take the risk of solving the issue. Therefore; there was not a significant association between two groups in EOU and we do retain the null hypothesis.
The second proposition explores the difference between use of iPod/iTune technology outside classroom between FP and CBE students. The t-test analysis indicated no statistically significant difference of iPod/iTunes technology use outside the classroom between the FP Female Student and CBE Female students except for using this technology when they are at home where FP Female Student (M=1.22, SD=0.44) and CBE Student (M=1.63, SD=0.48) ; t=2.36, p = 0.022.

Table 2: Mean, Std. Dev, t-test, significant of outside classroom use variables

Satisfaction Method	CBE (n1=44)		FP (n2=9)				
	Mean	Std. Dev.	Mean	Std. Dev.	t	Sig (2-tails)	Status
I use iPod when I am at home (woke up/go to bed/relaxed)	1.6364	.48661	1.2222	.44096	2.36	**.022**	Rejected
I use iPod when I am having meal (lunch/dinner)	1.9773	.15076	1.8889	.33333	1.263	.212	Retained
I use iPod when I was on the way to university/home	1.7500	.43802	1.7778	.44096	-.173	.863	Retained
I use iPod when I walked around in campus	1.8409	.36999	1.8889	.33333	-.360	.720	Retained
I use iPod when I waited for others	1.7955	.40803	1.8889	.33333	-.643	.523	Retained
I use iTunes when I am at Home (Woke up/relaxed at home/went to bed)	1.5000	.50578	1.5556	.52705	-.298	.767	Retained
I use iTunes when I am having meal (lunch/dinner)	1.9545	.21071	1.8889	.33333	.766	.447	Retained
I use iTunes when I was on the way to university/home	1.8409	.36999	1.7778	.44096	.452	.653	Retained
I use iTunes when I walked around in campus	1.8864	.32104	1.8889	.33333	-.021	.983	Retained
I use iTunes when I waited for others	1.7955	.40803	1.8889	.33333	-.643	.523	Retained

Therefore, there is no significant difference in iPod/iTunes use outside classroom between FP and CBE female students and the null hypothesis is retained for all items except the first item "I use iPod when I am at home (woke up/go to bed/relaxed). Proposition three considers that there is a difference in selecting iPod/iTunes learning content between FP and CBE students.

Table 3: Mean, Std. Dev, t-test, significant of learning content variables

Satisfaction Method	CBE (n1=44)		FP (n2=9)				
	Mean	Std. Dev.	Mean	Std. Dev.	t	Sig (2-tails)	Status
I choose Arabic audio/video because I feel better	1.772	.423	2.000	.000	-1.556	**.001**	Rejected
I choose Arabic audio/video because it is easier	1.646	.321	1.888	.333	-.021	.983	Retained
I choose English	1.340	.479	1.111	.333	1.367	.178	Retained
Use iTunes/iPod for entertainment	1.393	.428	1.333	.500	.370	.713	Retained

The results on Table 3, indicate that there is no statistically significant difference for choosing the contents when using iPod/iTunes between both groups, except for "I choose Arabic audio/video because I feel better" where Foundation Program Female Student (M=2, SD=0.00) and CBE Student (M=1.77, SD=0.42); t (51) =3.55, p = 0.01. Therefore, the null hypothesis is retained.

The last proposition examines any difference in use of iPod/iTunes for improving independent learning skills between FP and CBE students.

The t-Test analysis indicated no statistically significant difference of the reasons for not using iPod/iTune technology between pre and post female CBE Student except for Improving in note taking strategies where FP Female Student (M=4.13, SD=0.60) and CBE Student (M=3.52, SD=0.75) ; t=2.25, p = 0.029 and Improving learning time management where FP Female Student (M=4.00, SD=0.87) and CBE Student (M=3.38, SD=.83) ; t =2.01, p = 0.049.

Table 4: Mean, Std. Dev, t-test, significant of independent learning variables

Satisfaction Method	CBE (n1=44)			FP (n2=9)				
	Mean	Std. Dev.		Mean	Std. Dev.	t	Sig (2-tails)	Status
Watch video using iPod improve knowledge on subject	3.93	.728		4.44	.732	-1.904	.082	Retained
Listen audio on iPod improve knowledge on subject	3.95	.746		4.13	.599	-.658	.460	Retained
Improve note taking strategies	3.52	.754		4.13	.599	-2.247	**.029**	Rejected
Improve learning time management	3.38	.834		4.00	.866	-2.01	**.049**	Rejected
Clips for learning keep best interest in mind	3.86	.966		4.11	.782	-.728	.417	Retained
Easy to do task that wanted to do	4.07	.789		4.00	1.000	.193	.822	Retained

There is a difference between pre and post female CBE Student of the reasons for not using iPod/iTunes technology in term of improving note taking strategies and improve learning time management.

DISCUSSION

Very little evidence concerning technology use by Arab female students is available; therefore the purpose of this case study was to investigate their ability to study independently with iTunes services and/or iPod technology.
Previous research has indicated that there was a lack of quality content available from iTunes (Thomas, 2006) and teachers were most likely to create their own learning materials. In addition Thomas (2006) reported that most students did not have enough basic technical skills to work with digital environments. Abdous, Camarena and Facer's (2009) research also reported that some students did not feel proficient with using podcast technology.
While case study results cannot be generalized (Yin, 2003), the findings in this case study did not report any barriers that would prevent these female participants from accessing iTunes to download resources to view on their iPod. Students in this case study had the time and inclination to use their iPods to study anytime anywhere. If students had any challenges with using iTunes or iPod, they were most likely able to resolve this problem on their own. By the end of the term students commented that they had become familiar with iTunes and their iPod, thus highlighting the user-friendliness of this online service and mp3 player for this particular group of female students.

Results for proposition 2 indicated that students used their iPods outside of class in a similar fashion. They mostly used it during travel time to and from university. According to the findings students seemed to behave differently once they were at their place of residence. It would seem that students were more likely to use iTunes rather than to continue to make the most of the mobility that their iPods affords them. This seems to concur with Gromik's (2008) findings which indicated that Japanese students were able to decide where and when to use their iPods. Indeed some students recognized the benefits that mp3 technology affords them and they were willing to capitalize on the mobility factor (Evans, 2008).

Female Arabic students from the CBE department felt more at ease with listening to Arabic podcasts compared to the female of the foundation program. This is most probably due to the fact that the purpose of the foundation program is to enhance students' English abilities; a prerequisite for entering and participating in university courses. Also both groups commented that it was easier to search for podcasts in their native language. Both groups also indicated that they used iTunes and iPods entertainment for non-academic purposes.

Proposition four concurs with findings from Walls et al. (2010) that students perceived some benefits of using iTunes/iPods to enhance their learning. However, while students utilized iTunes and their iPods to improve their interest and knowledge of the subject, they differed in their perception that iTunes and iPods improved their note taking skills and improved their learning time management.

It would seem that students perceived some benefits with studying with iTunes and iPods. However depending on their academic background students with less academic preparation needed more time to develop the necessary skills to use the technology independently.

The opportunity to use different devices to access podcasts means that students do not need to use iPods in order to access iTunes (Walls, et al. 2010). As the old adage states "you can lead a horse to water, but you can't make it drink". It is true that teachers can demonstrate and explain the advantages of learning on the move anytime anywhere, but there are limited strategies for researchers to ensure that students use the technology outside of class. This affects how students interact with the technology and consequently the feedback they provide.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Sample size is a contentious issue amongst researchers, as it may affect analysis and interpretation (Hinkle et al., 1998, Pallant, 2007). While the sample size of 9 students from the Foundation Program and 44 from the BCE group may be small, the sample focus group contributes towards understanding a group of participants that has up to now received little attention from the research community. The objective of this research was never to offer generalizations, but to begin a conversation about Arab female use of mobile technology.

Another controversial limitation is the possibility that a Hawthorn Effect may have occurred in this research (Burns, 2000). The research investigates the use of iTunes and iPods by Arabic female students and these participants may have modified their behavior to demonstrate that they did use the technology. This may not reflect their normal daily study activities during which these learning tools may not have had an influential role.

Since this is one of the few researches that investigate technology use by Arab females' students, the research focus addressed only a few propositions. Nonetheless, the preliminary findings have established areas for further research. For example some researchers have commented on perpetual connectivity and its effect on students' isolation and establishment of more introverted social networks.

CONCLUSION

iPod is a powerful multimedia device which is increasingly being reported as a useful study tool for students anytime and anywhere they want. iTunes is a reliable online source of audio-visual resources, and the iTunes University section with its many free and professional learning materials holds promise for the development of online and distance learning. As students learn to access and utilize these resources to construct and deepen their own knowledge base, they will be able to develop lifelong learning skills and carry these with them to their future career path. Results indicated that iTunes and iPods have the potential to encourage learners with and without prior academic experience to capitalize on mobile learning and to engage them to select learning materials of interest and relevance to their learning needs. The results revealed that Arabic female students are using mobile technology to extend their academic knowledge and it would appear that they had sufficient English language cognizance to view content produced in the target language. This study also suggested that there was not a significant difference in performance between CBE students and student from foundation program; meaning that iTunes and iPods are user-friendly and can accommodate for any academic level. Research with iTunes and mp3 can now shift away from prescriptive teaching methods towards more individualized learning approaches.

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- All pages must be portrait orientation. Tables and figures in landscape orientations should be reformatted into portrait orientation.
- All paragraphs should be justified left and right, single spaced, in 10 point Times font, no indent on first line, l line between each heading and paragraph.
- One line between each paragraph.

Titles, Authors, and Headings:

- **Title centered 14 point bold**. One line between title and author's name.
- Authors: centered, 12 point. Name, affiliation, state, country.
- One line space to **ABSTRACT** (title 10 point, bold, all capitalized, aligned left; text of abstract 10 point, no bold)
- After **ABSTRACT**, one line space, then **Keywords**. Followed by one line space to first major heading.
- **HEADINGS, MAJOR**, 10 point, bold, all capitalized, aligned left.
  The specific headlines will be based on the content of the paper, but major sections should at a minimum include an abstract, keywords, introduction, conclusion, and references.
- **Sub-headings**: 10 point, bold, first letter capitalized, no line to following paragraph. Align left.
- *Third level headings: Italic*, 10 point, first letter capitalized, no line to following paragraph. Align left.
- **Keywords:** heading: 10 point, bold, first letter capitalized, no line to following paragraph. Align left. Your list of keywords in 10 point, no bold.

Tables, Figures and Graphs:

- All fonts 10 point.
- Numbered consecutively within each category. Table 1, Figure 1 etc.
- Title: 10 point, bold, left justify title, one space, then the table, figure, etc.
- Example: **Table 1: Statistical Analysis**

References:

- APA format when citing in the text. For example (Smith, 2009).
- References section: 8 point font, first line left margin, continuation lines 0.25 inch indent. Justify left and right. No line spacing between references. List alphabetically by first author.
- Specific references: Last name, First initial, middle initial (and additional authors same style) (year of publication in parentheses). Title of article. *Journal or source in italics.* Volume and issue, page number range.
- Example: Clon, E. and Johanson, E. (2006). Sloppy Writing and Performance in Principles of Economics. *Educational Economics*. V. 14, No. 2, pp 211-233.
- For books: last name, first initial, middle initial (and additional authors same style) (year of publication in parentheses). *Title of book in italics.* Publisher information.
- Example: Houghton, P.M, and Houghton, T.J. (2009). *APA: The Easy Way!* Flint, MI: Baker College.

Example (note that this example represents a change from previous style guides)

Evidence to Support Sloppy Writing Leads to Sloppy Thinking

Peter J. Billington, Colorado State University - Pueblo, Colorado, USA (12 point)
Terri Dactil, High Plains University, Alberta, Canada

ABSTRACT (10 point, bold, all capitalized, left justified)

(text: 10 point Times font, no indent, justified, single space, 150 words maximum for the abstract)
The classic phrase "sloppy writing leads to sloppy thinking" has been used by many to make writers develop structured and clear writing. However, although many people do believe this phrase, no one has yet been able to prove that, in fact, sloppy writing leads to sloppy thinking. In this paper, we study the causal relationship between sloppy writing and sloppy thinking.

Keywords: sloppy writing**,** sloppy thinking **(10 point, bold title, first letter capitalized, left justified).**

INTRODUCTION (10 point, bold, all capitalized, left justified).

The classic phrase "sloppy writing leads to sloppy thinking" has been used by many to make writers develop structured and clear writing. However, since many people do believe this phrase, no one has yet been able to prove that in fact, sloppy writing leads to sloppy thinking. Is it possible that sloppy writing is done, even with good thinking. Or perhaps excellent writing is developed, even with sloppy thinking.

In this paper, we study the writing of 200 students that attempts to test the theory that sloppy writing leads to sloppy thinking.

PREVIOUS RESEARCH

The original phrase came into wide use around 2005 (Clon, 2006), who observed sloppy writing in economics classes. Sloppy writing was observed in other economics classes (Druden and Ellias, 2003).

RESEARCH DESIGN

Two hundred students in two business statistics sections during one semester were given assignments to write reports on statistical sampling results. The papers were graded on a "sloppiness" factor using…

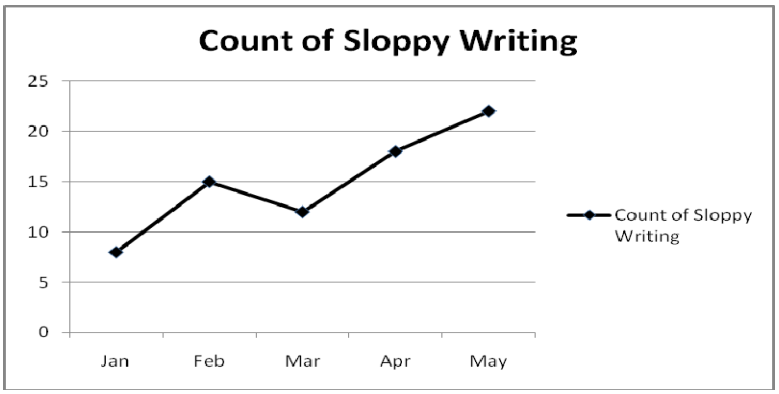
Data Collection (Sub-heading, bold but not all caps, 10 point, aligned left, bold, no line after to paragraph)
The two hundred students were asked to write 2 short papers during the semester…

Data Analysis(Sub-heading, bold but not all caps, 10 point, aligned left, bold, no line after to paragraph)
The two hundred students were asked to write 2 short papers during the semester…

DISCUSSION

The resulting statistical analysis shows a significant correlation between sloppy writing and sloppy thinking. As noted below in Figure 1, the amount of sloppy writing increases over the course of the spring semester.

Figure 1: Sloppy Writing During the Semester



The count results were compiled and shown in Table 1 below.

Table 1: Counts of Good and Sloppy Writing and Thinking (bold, 1 line after to table, left justify)

	Good Thinking	Sloppy Thinking
Good Writing	5	22
Sloppy Writing	21	36

*-Indicates significance at the 5% level)

As Table 1 shows conclusively, there is not much good writing nor good thinking going on.

CONCLUSIONS

The statistical analysis shows that there is a strong relation between sloppy writing and sloppy thinking, however, it is not clear which causes the other…

Future research will try to determine causality.

REFERENCES (title10 point, all caps, bold, align left, one line to first reference)
(1line spacing) (All references 8 point, indent second line 0.25 inch, justify left and right)

Clon, E. (2006). Sloppy Writing and Performance in Principles of Economics. *Educational Economics*. V. 14, No. 2, pp 211-233.

Devad, S. and Flotz, J. Evaluation of Factors Influencing Student Class Writing and Performance. *American Journal of Farming Economics*. V. 78, Issue 3, pp 499-502.

Druden, G. and Ellias, L. (1995). *Principles of Economics*. New York: Irwin.

(short bio section optional, can run longer than these examples; removed before sent to reviewers)

Peter J. Billington, Ph.D., is a professor of operations management at Colorado State University – Pueblo. His research interests span from lean six sigma to innovative education.

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