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The Importance of Social Presence and Motivation in Distance Learning

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The Importance of Social Presence and Motivation in Distance Learning

Dr. Cathy A. Robb, Dr. John Sutton

ABSTRACT

The purpose of this experimental study was to investigate whether motivational emails sent from an instructor to students had an impact on student motivation and performance, measured by course completion and final course grade in a community college online course. The theoretical framework for this study was based on the four elements of the ARCS model: attention (A), relevance (R), confidence (C), and satisfaction (S). This theory by John Keller (1983) enhances the learning environment and stimulates students' motivation to learn, therefore improving retention and course grade.

The sample for the study was students enrolled in 12 online classes offered by one community college during the spring 2009 semester. These students were randomly assigned to two groups, a control group and an experimental group, with the experimental group receiving five motivational email messages. Keller's (2006) Course Interest Survey (CIS) was used to measure student motivation. The CIS instrument was modified so that the experimental group received six open-ended questions concerning the impact of the motivational messages on their course performance.

The findings showed students participating in an online course benefited from the treatment. Results showed a higher proportion of the experimental group were successful completers of the online course than the control group. Results also showed a significant difference in final course grade and CIS scores for the experimental and control group. The final grades of the experimental group exceeded the control group.

This study stands apart from other ARCS research as being one of the first empirical studies to use emailed motivational messages and the CIS, supplemented with open-ended questions, for community college online courses. The results provide valuable insights into how email can be used in online classes to motivate students and enhance course performance.

INTRODUCTION

"External pressures exerted on the traditional

educational systems are forcing change on time honored scholastic practices" (Glahn & Gen, 2002, p. 778). Over a decade ago, Drucker (1992, p. 97) anticipated the need for change and predicted that in the next 50 years "schools and universities will change more drastically than they have since they assumed their present form 300 years ago when they organized around the printed book" (p. 97). New technologies are an important contributor to the changing environment, and as society changes, colleges respond by implementing new technological developments in the curriculum and in course delivery.

In today's economic times, colleges are challenged to serve more students with fewer resources than ever before. Offering online courses removes the burden of maintaining facilities, allowing colleges to expand course availability without having to manage physical classrooms, which can be a financial savings to the institution.

The profile of the typical online student is someone who is non-traditional in age compared to the traditional college student and also employed with dependents at home, and they are often students who enroll part-time after having interrupted previous college studies ("American Association of Community Colleges," 2006; Carr, 2000; Cohen & Brawer, 2003; Diaz, 2002; Dutton, Dutton, & Perry, 2005; Levine & Sun, 2003). "This influx of adults taking distance education courses has occurred in part because of the proliferating demands of our technological society and in part because of the complexity of modern life" (Parker, 2003, p. 1). Addressing the complexity of adult lives and learning, Dr. Mark David Milliron discussed the concept of how a traditional student is becoming harder to define today and how more and more students are in a "learning swirl", where students swirl in and out of education. Increasingly, students come to an educational institution to obtain their primary degree and then return to upgrade or refresh their skills (Mooney, 2008, p. B9). Society today calls for life-long learning in order for students to stay employable in the workforce and yet many adults are unable to participate in traditional, face-to-face courses because of employment and family responsibilities.

Using technology for online learning may open geographic boundaries by offering educational opportunities to students who are physically removed from the institution and help to facilitate the learning swirl.

PROBLEM

With the growth of online learning in higher education comes a problem of non-completion where students withdraw from a class before the ending date. Numerous studies have shown non-completion is higher for online than traditional college classes (Carr, 2000; Diaz, 2002; Parker, 2003; Visser, 2002).

Research has indicated that the lack of motivation is an important contributor to dropout when students study online (Gabrielle, 2003, Huett, 2006; Visser, 1990). Since motivating elements found in a traditional class, such as group pressure, social interaction and a familiar learning environment, can be absent in online settings, motivational strategies should be purposefully integrated into the course to enhance learner motivation. Student motivation is particularly necessary in an environment where technology may be perceived as a replacement for human presence in instruction (Glahn & Gen, 2002). Representing a perspective that is spreading among college educators, Dr. Mark David Milliron envisions that technology will play a crucial role at colleges, observing the “human touch isn’t necessarily about not using technology – it’s about leveraging it in a way where the human touch can be improved” (Mooney, 2008, p. B9). Technology is not a replacement for social interaction, but should be utilized as a tool to facilitate connecting students from anywhere in the world.

PURPOSE

The purpose of this study was to investigate the impact of motivational messages on student motivation and performance, measured by course completion and final grade, in a community college online course during the spring 2009 semester.

Motivation refers to “the choices people make as to what experiences or goals they will approach or avoid, and the degree of effort they will exert in that respect” (Keller, 1983, p. 389). Motivation is viewed as highly unpredictable and changeable, being subject to many influences (Keller, 1987). No matter how motivated students are when they begin a course, their motivation to complete the class may diminish due to a variety of factors. “People tend to persist longer, or more intensely for a shorter period, at tasks when they are motivated than when they are not” (Keller, 1983, p. 388).

As Keller (1999) explains, the ARCS model is a method for improving the motivational appeal

of instructional materials and is based on four dimensions of motivation. These dimensions were derived from a synthesis of research on human motivation and are known as attention (A), relevance (R), confidence (C), and satisfaction (S), or ARCS. The ARCS model is an approach that is intended to enhance the learning environment to stimulate and sustain students’ motivation to learn therefore improving retention and course grade. See Figure 1 below, which illustrates how the four ARCS elements of Attention, Relevance, Confidence, and Satisfaction relate to building motivation.

FIGURE 1. ARCS MODEL.



The theoretical framework used for this study is the ARCS model and Keller’s Course Interest Survey (CIS) (Keller, 2006) which was used to measure these four elements of motivation. The ARCS model focuses on using motivational messages that are intended to enhance faculty-student interaction, which leads to enhancing student motivation. Visser’s (1998) MMSS (Motivational Messages Support System) study was shown to increase completion rates in distant learners from 34% to 61%. Visser’s study utilized eight motivational messages that were delivered via regular mail. This study was based on Visser’s research but utilized technology with email being the delivery mode for motivational messages.

Another theory that adds support for this study is Rendon’s (1994) validation concept, which places the focus of student success on the active, supporting role of the institution and specifically the instructor. Rendon contends that students perform better when they are valued as individuals and made to feel they are members of a college community. Rendon’s study involved face-to-face interviews with 132 first-year community college and university students at four different institutions. The research showed that while traditional students expressed few concerns about succeeding at college and becoming involved in college life on their own, nontraditional students communicated some doubts about their ability to succeed. Rendon observed that the nontraditional students expected an outreach or an intervention to become involved.

Rendon found nontraditional students are more likely to succeed when they experience active efforts to validate them on the part of their educational institution. Validation for example occurs when faculty, take an active interest in students, providing encouragement and affirming them as being capable of doing academic work. Rendon explained that validation is a prerequisite for student development and is most effective when offered early in the student's college experience. The institution plays an active role in fostering validation by taking the initiative to reach out to students in an effort to promote the students' feeling of self-worth and active learning.

RESEARCH HYPOTHESES

The main focus for this study was:

What impact do motivational messages have on student motivation and performance, measured by course completion and final grade, in a community college online course? Three research hypotheses were used to analyze student motivation, course completion, and final grade for students who were randomly assigned to a treatment or a control group, where the treatment group received five motivational email messages.

1. Students in the experimental group showed a significant difference from the control group in successfully completing the course with a grade of C or better.
2. Students in the experimental group showed a significant difference from the control group on final course grade.
3. Students in the experimental group were significantly different from the control group on motivation, as measured by the CIS.

RESEARCH DESIGN

The research design was experimental. Students enrolled in an online community college course were randomly assigned to two groups, an experimental group and a control group. This research design used a between-group, true experiment, where the participants were randomly assigned to different conditions (Creswell, 2005). This design included a treatment group of students who received five emailed motivational messages from the faculty member teaching the online course. All messages were delivered electronically to the students' email accounts. The control group of online students did not receive the motivational communications from the faculty member, but did have access to the same information presented in the motivational messages from the college's website and the course syllabus that was posted online. Therefore, the experimental design did not deprive students of information that was readily available to them via the Internet.

This experimental study assigned 388 students in 12 online classes to a control group and an experimental group. The 12 online classes were representative of transfer and vocational courses. The experimental group received five motivational emailed messages (see appendix A) designed by the researcher using the ARCS elements and at the end of the course students were asked to complete a survey with 6 open-ended questions asking their reactions to the emailed messages.

The first motivational email was delivered after the 10th day class rosters to include any late additions to the class or students dropping making schedule changes. This emailed message was entitled "Class Success" and included an embedded graphic to relate to the students' goal towards success in their online class. The graphic was included in the email so the students were not required to download or open any files.

The second motivational message was emailed as an online greeting card after the fourth week of classes. This email included a link for students so they could view the online card. This message was animated with humorous graphics and music to get the students' attention. The text with the greeting card offered advice to students who might be struggling with the course on how to get on the right track. The hurdle of submitting some of the first assignments is the reason for a substantial number of withdrawals (Simpson, 2003).

The third motivational message was sent after the sixth week of classes. This included text with a graphic that was sent directly in an email message with nothing to open or download. This message informed students of the importance to review the posted comments on their work provided by the instructor, as this will aid towards improving in the course.

The fourth emailed motivational message was timed to arrive at midterm and included a congratulations message for the students continuing with the course with a motivating quote, "There is no challenge too great for those who have the will and heart to make it happen." This message was designed to have more visual appeal with a graphic and color, along with text. This message was aimed at capturing the student's interest more so than just a textual email. Following the study of Visser (1998) who asked students which message they liked the most and finding that her last message was the most popular because it contained more pictures than text, this researcher provided a message that offered an appreciation for the students' efforts at submitting assignments. Students were reminded that they had reached the halfway point in their online course.

The last motivational message included text and graphics and was timed to arrive after week 11. There were a variety of photos in this message with the intent of having the message appeal to all students and show they are in this together. This message congratulated students on only having four weeks left in the course, encouraged them to work hard in finishing the class, and reminded them of the final date for submitting work.

ANALYSIS

Three research hypotheses statements were tested to determine significant differences between the control and experimental groups:

Hypothesis 1. Hypothesis 1 stated that students in the experimental group would show a significant difference from the control group in successfully completing the course with a C or better. All students listed on the 10-day roster for the 12 online classes were included in this analysis. There were 197 students in the control group and 191 students in the experimental group, totaling 388 students. To determine if the difference in successful course completion between the two groups was statistically significant, a Chi-square test was used. Results of the Chi-square test ($\chi^2 = 4.636$, $df = 1$, $p = .024$) showed a significant association in the proportion of completers in the treatment. Table 1 shows completion information by group.

TABLE 1. CHI-SQUARE TEST FOR SUCCESSFUL COURSE COMPLETION BY GROUPS

Group	Successful Completion	n	Percentage
Control	Completers	93	47.2%
	Non-completers	104	52.8%
	Total	197	100.0%
Experimental	Completers	112	58.6%
	Non-completers	79	41.4%
	Total	191	100.0%

Hypothesis 2. Hypothesis 2 stated that students in the experimental group would show a significant difference from the control group on final course grade. Table 2 shows the mean grade of each group, representing all 248 students who received a final letter grade. To determine if the difference in the mean final course grade was statistically significant, an independent-samples t-test was used to compare the mean scores of the two groups. While the mean final grade for both groups is equivalent to a C grade, results of the t-test reflected a significant difference in the mean final grade at $\alpha = .05$ level ($t = 2.33$, $df = 246$, $p = 0.020$).

TABLE 2. T-TEST FOR FINAL COURSE GRADE BY GROUPS OF ALL STUDENTS IN THE STUDY

Group	n	Mean	SD
Control	121	2.40	1.327
Experimental	127	2.78	1.201

Hypothesis 3. Hypothesis 3 stated that students in the experimental group were significantly different from the control group on motivation as measured by the CIS. Table 3 shows the mean CIS score of the two groups, based on a 5-point response scale, ranging from 1=not true to 5=very true. To determine if there is a significant difference in the overall mean scores on the CIS for the two groups, an independent-samples t-test was conducted. Results of the t-test showed a significant difference in the mean score on the CIS for the two groups at $\alpha=.05$ level ($t=1.696$, $df=187$, $p=0.047$). This result supported this hypothesis that students in the experimental group who received the five motivational messages showed higher motivation, as measured by the overall CIS score, than the control group.

TABLE 3. T-TEST FOR OVERALL MEAN SCORE ON COURSE INTEREST SURVEY BY GROUP

Group	n	Mean	SD
Control	100	3.67	0.68
Experimental	89	3.87	0.62

Open-ended survey responses. To better understand students' reaction to the five motivational email messages, the experimental group's survey included six open-ended questions:

1. What impact did the five emailed messages have on your class motivation?
2. What if anything did these messages motivate you to do?
3. Out of the five messages sent, which one did you like the best and why?
4. Out of the five messages sent, which one did you like the least and why?
5. What was your reaction to the five emailed messages?
6. What impact did the five messages have on your communications with the instructor?

This qualitative data collection included 70 responses from students in the experimental group. To analyze the responses from the six questions, codes or labels describing a segment of text were assigned to that text (Creswell, 2005). When the list of codes was aggregated, three themes and one subtheme emerged from the analysis of the students' responses.

Theme 1: Increased motivation.

The first theme that emerged from coding the data was students' increased motivation to continue their courses. This theme emerged from 58 coded student responses, indicating that their motivation was positively impacted from the emailed messages. A subtheme emerged from the coding associated with this theme where students who did not state directly the impact of the messages on their motivation, but implied how these emailed messages benefited their motivation by using other related terms. This subtheme is labeled as Working Harder, and represents coded student responses indicating that the emailed messages helped them to work harder or study harder to successfully complete the course.

Theme 2: Caring instructor.

The second theme that emerged from the data was students citing how the emailed messages reflected a caring instructor, which the students viewed as surprising and added a personal touch to the online class. This theme reflected 56 coded student responses indicating that the students felt surprised by the emailed messages and that the instructor sending the messages cared about their success.

Theme 3: Willingness to communicate.

The third theme that emerged from the data was students citing in their responses how the emailed messages made them more comfortable to ask questions and communicate with their online instructor. This theme reflects 46 coded student responses indicating that more apt to communicate with the faculty member teaching their online class due to the emailed messages.

RESULTS OF THE STUDY

The main focus for this study was to determine what impact motivational messages had on student motivation and performance (course completion and final grade) in a community college online course. Three research hypotheses statements were tested and this study's findings validated that students participating in an online course benefited from receiving five motivational emailed messages. This study confirmed the conclusions of Visser (1990), Visser and Keller (1990), Gabrielle (2003), and Huett (2006) that motivational messages did impact student motivation level and have a positive influence on their class performance.

This study showed a significant association in the

emailed messages, had a higher motivation level and better course completion rates, which also reflected in students earning more A's, B's, or C's for a final course grade than the control group. These results suggest e-mail messages attempting to enhance the performance of online students taking an online college course can improve their motivation and impact their final course grade and course completion.

From the qualitative analyses, three major themes of Increased Motivation, Caring Instructor, and Willingness to Communicate emerged from coding six open-ended questions included in the survey for the experimental group. These six open-ended questions were included to gain a better understanding of the impact of the five motivational emailed messages on student online course performance.

This represents one of the first online community college student research studies that have used the CIS (Course Interest Survey) instrument supplemented with open-ended questions, which adds to the literature. Kim & Keller's (2008) study also used the CIS with emailed messages showing positive results on student motivation, but this study was based on one in-seat archaeology class of 101 students. This experimental study ranged over 12 online classes and incorporated open-ended questions with the CIS, unlike Kim & Keller's (2008) study.

IMPLICATIONS

Results provide valuable insights into how email can be used in a college online class to build a social presence towards motivating students and improving their course performance. This was one of the first empirical studies to use emailed motivational messages at a community college based on Keller's ARCS model and Rendon's Validation theory.

College faculty and administrators are always interested in improving student performance in courses. Due to limited funds and time, a low-cost, time efficient method for improving student performance is needed for improvements to be implemented. By using email to deliver motivational messages to students in an online course, no extra expenses are incurred.

With the increase in technology and online learning there is an increasing acceptance that educating students beyond the traditional campus environment is a major element of a college's mission (Rovai, 2002). Society today calls for life-long learning for students to stay employable in the workforce, and many students turn to colleges to maintain or upgrade their skills. Yet, many adults are unable to participate in traditional face-to-face

classes due to current employment commitments, family responsibilities, or geographic limitations. Online learning offers colleges the opportunity to better serve these students' needs. With the online learning opportunity also comes unique challenges of: technology issues, feelings of isolation, lack of communication, or problems understanding the course content. Building student motivation by utilizing the technology will aid in overcoming the challenges of online learning and improving success.

FURTHER RESEARCH

This study should be replicated at other educational institutions to further explore the impact of motivational messages on student motivation and performance due to limitations of this study. Since this study was conducted at one community college in Illinois the external validity threat arises from the inability to generalize from the setting. During this study there was also potential for internal validity threats related to treatment, such as diffusion, rivalry, resentful demoralization, and compensatory equalization, which are all possibilities in between-group experimental designs (Creswell, 2005). Because this experimental design was completed using online courses, there was no way to predict the relationship among participants, and no guarantee that the populations would not communicate and share information regarding their course.

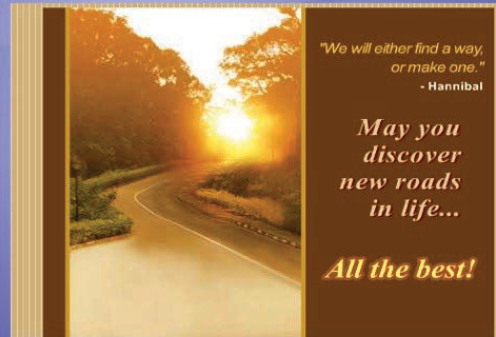
This study was conducted in 2009 using emailed motivational messages in an experimental design. Since then text messages on mobile devices has become more prevalent and students are more connected via their mobile device than ever before. A recommendation for further research would be to replicate this study but by creating the motivational messages for texting. A new generation of college students are emerging that relies on the Internet and mobile devices to stay socially connected. Utilizing text messages for creating a social presence in academia aids in engaging students to communicate with their online instructor. Students who have a higher level of social presence are more satisfied with online learning and thus will have better performance (Aragon, 2003).

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Appendix A

Message #1 – Emailed on 10th day of class!

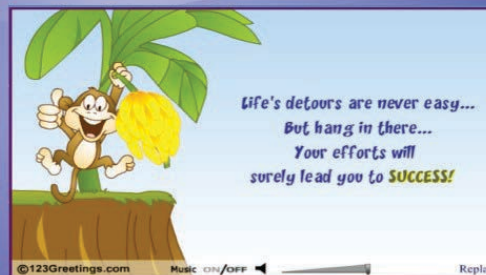


The road to success may be filled with bumps and curves, but through hard work and determination this road will become smooth and straight.

I look forward to working with you and helping you succeed in your online class!

C. Stennett Robb

Message #2 – Emailed on fourth week of class!



Are you experiencing roadblocks with the assignments?

If so, keep going..... don't give up. Take time to review the posted course instructions and syllabus to overcome any detours and to get on the right track!

C. Stennett Robb

Message #3 – Emailed on sixth week of class!

Emailed Message....



Congratulations on making progress towards completing your online class! Pat yourself on the back for crossing what can be an important hurdle towards finishing an online class.

Not done as well as you hoped on these past assignments? Don't understand why you have lost points? Be sure to email questions before progressing in the course!

Keep in mind you have plenty more assignments ahead towards completing the course. So, stay focused on the positive, learn from your mistakes, and stick with it!

C. Stennett Robb

Appendix A

Message #4 – Emailed at midterm!



“There is no challenge too great for those who have the will and heart to make it happen”

Congratulations! You have reached midterm in your online class, which means you are at the halfway point.

Your efforts in submitting work by the posted due dates are appreciated and will serve you well in completing the class successfully!!

C. Stennett Robb

Message #5 – Emailed at end of week 12

You are all in this together.....



As you prepare for the final exam, remember that you are not alone. You have classmates that are working right along with you in finishing the class!

Congratulations.... only two weeks left in the class. You can do it!

C. Stennett Robb