text messaging
to Improve Social Presence in Online Learning

A pilot study of text messaging explored its usefulness in enhancing social presence and communication in online courses

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Jimmy, an Army private, waiting in a hot and smelly tent West of Baghdad; Molly, a stay-at-home mother, waiting with her baby in a Laundromat for clothes to dry; Jane, a science teacher, waiting for the ferry to arrive; and Keith, a cell phone account executive, waiting for a day of cold calls to begin.

What could these four people possibly have in common? They represent the types of students continuing their education through distance education programs at East Carolina University (ECU). For each of them, accessing course content means connecting to the Internet to receive information presented on a Web-based learning/course management system such as Blackboard, Sakai, or Moodle.

ECU provides more than 650 class sections that are totally online each semester, serving more than 5,800 students. Jimmy, Molly, Jane, and Keith are all online learners, but they have much more in common than this. Like most of their classmates, they are working adults with busy schedules. They have all learned how to manage their time and to make compromises to get things done.

Keeping Up with New Technology—or Not

On and off campus, students use their cell phones, wireless personal digital assistants (PDAs), laptops, and iPods and take full advantage of Bluetooth. Each device offers a similar technology medium but also a new way to access course material and communicate with faculty and other students. With the proliferation of technology devices, students have begun exploring new methods of learning, thus paving the way for educators to adopt new instructional strategies. Educators have identified many elements that lead to student success, including frequent communication and participation within a learning community.[1] Some of the new technologies can potentially facilitate student involvement in learning. But how?

Most of us would agree that technology is neither good nor bad. It's up to the user to select appropriate solutions and employ them effectively. One problem with trying to gauge the quality of courses by measuring the amount of cutting-edge technology used is that instructors can never keep up, and students can't afford to buy all the latest technology required for their own learning. The dual challenge of staying current and being able to afford the newest hardware and software is almost overwhelming. Luckily, research has shown that the key to success in online learning involves using strategies that facilitate communication and enhance social presence among online learners, not just applying the newest technologies.

Communication, Learning, and Social Presence

Let's take a moment to think about our hypothetical students—Jimmy, Molly, Jane, and Keith. When they start a new course, they have to establish themselves as members of a learning community. This is important because they will work with their peers on many collaborative projects. The extent to which they can interact and how well they are respected as valuable members

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understand the meaning of what is being conveyed. In short, the listener has to "get the message."[2] There is a lot to the process of communication. It is important to realize and appreciate not only that communication is vital for enhancing social presence but also that social presence has a strong impact on learner satisfaction in an online learning environment.

A seminal article by D. Randy Garrison emphasized collaboration and connectivity as essential features of asynchronous online learning. Garrison suggested that the major components of educational experience consist of social presence, cognitive presence, and teaching presence.[3] The central premise of Garrison's model is that learning occurs through interaction.

Taken in combination, these elements support both the cognitive and affective objectives of learning.[4] Social presence affects both objectives by supporting critical thinking and engaging learners in the social interaction process.[5]

Stephen R. Aragon, in *Creating Social Presence in Online Environments*, noted a new body of emerging research that investigates the relationship between student satisfaction and learning outcomes.[6] Aragon went on to say that learners who have a higher level of social presence are more satisfied with online learning. This substantiates Jung's findings about the importance of online communities[7] and reinforces the need for students to communicate and create a social presence. It is Jung's belief that by not creating a social presence in a course, students will exacerbate their feelings of isolation.

In their study on the impact of social presence on perceived learning of students in online classes, Jennifer Richardson and Karen Swain found that "students' perceptions of social presence are a predictor of students' perceived learning in online courses."[8] More recently, Terry Anderson suggested that the "killer app" for the evolving field of social software is indeed distance education. In his article, Anderson did an outstanding job of identifying electronic source selection software that is, or may be, applied to distance learning courses to enhance social presence.[9]

of the community offer an indication of their social presence. In a new class, they may not know anyone. Relationships, friendships, and support networks have not yet been created, and they are not yet sure what will happen.

They also experience varying degrees of feeling isolated at their computers and may worry about the impact of their presence on other students. They may wonder what impact others will have on their learning. Feelings of isolation are common because nonverbal communication cannot be used to help understand the full meaning of what is being communicated. Learners sitting together in campus classrooms rely on nonverbal

cues such as body language, facial expressions, gestures, physical proximity, and dress to convey meaning and establish relationships with others. This is missing in an online environment.

The Importance of Social Presence

The importance of communication and its role in improving social interaction in people and animals has been studied for years. Communication is not an automatic process that just involves transmitting information from a sender to a receiver. For communication to occur, the receiver must be willing to receive the information, must be listening, and must

Text Messaging: A Tool for Improving Social Presence

Faculty are working with a new generation of college students who increasingly rely on new technologies and Internet services to stay socially and academically connected. In the quest to infuse innovation into the curriculum, faculty seem to be trying to pack as many communication tools into their courses as possible. Most would agree that voice communication, MySpace, Facebook, discussion boards, online chats, blogs, wikis, and videoconferencing all have strengths and weaknesses. Tools such as these have demonstrated their effectiveness in strengthening communication and social presence in many online learning environments.

One approach for enhancing interaction and communication among students and between an instructor and students is through text messaging. Undergraduate students participating in a Write On! Workshop at the University of New Mexico were asked how many text messages they sent each day, how long these messages were, and for what tasks they used text messaging. Responses indicated that the majority of students wrote either 5 to 10 short, to-the-point text messages a day to make plans or see what's going on with friends. When asked about e-mail, the majority of students wrote up to 10 e-mails per day to keep in touch with friends and family.[10]

With the proliferation of cell phone use among students, each student has access to text messaging, which they use to communicate with friends, peers, and teachers. Surveys indicate that nearly every student has a cell phone, which means they have access to text messaging wherever they go (if they have the feature activated). Security on Campus, for example, found that more than 90 percent of all on-campus students carry cell phones.[11] In 2006, the Technology Advancement Center (TAC) at East Carolina University conducted a mobile phone user survey to assess the mobile needs of distance education and campus learners. The goal was to learn about students' uses of cell phones in order to create new ways of teaching and learning. More than 4,000 students responded to the survey. Data indicated that 94 percent of the population had their own cell phones, and 70 percent of users always had their cell phones turned on. Also, 43 percent had text messaging activated on their phones, and 93 percent were interested in this feature. The preferred interpersonal communication device carried by campus students was a cell phone.[12]

Most analysts agree that college students use text messaging regularly. Text messaging is the second most frequently used computer-based tool, next to e-mail. Instant messaging is third.[13]

Institutions of higher education are increasingly concerned with methods for connecting and communicating with students. With an increase in the number of face-to-face courses being moved online, there is a greater need than ever to create a social environment where students and instructors can become comfortable and interact with each other. Text messaging is considered one way to accomplish this.

The ECU Text²Phone Pilot

The ECU TAC completed initial research in the spring of 2006 to identify Web-based software that could be used to distribute campus alerts and distance education course updates. After evaluating software against performance criteria and conducting initial testing, the TAC selected Omnilert by e2Campus for a pilot (http://www.omnilert.com). The pilot project, called ECU Text²Phone, was completed in the summer of 2006. The test group for the project consisted of distance education students enrolled in three courses from the College of Education.

Description of the System

The pilot system worked through a Web interface, linking content from a campus Web page to the e2Campus Web site. At the beginning of the summer semester, students interested in participating in the pilot received a URL to the page to sign up for the service. They were asked to create an account with a username and password and provide the course selection number and the cell phone number they would use to receive text messages. A unique validation number was sent to each student's phone, and the students entered this number from their computers to verify that their phones were working correctly. They were then ready to receive messages from their instructor.

The instructor sent messages by logging on from the Web page. After selecting the group to which she wanted to send a message, the instructor typed a short message and sent it. Students received the message in two minutes or less.

It was important to restrict use of the text messaging tool to important course updates. One reason for concern about the number of messages transmitted was that some of the students had to pay for the messages they received—as much as 8 to 10 cents per message, depending on the carrier. Only two carriers in the area provided unlimited incoming text messages in their calling plans.

Description of the Pilot

A Text²Phone pilot conducted in the summer of 2006 evaluated the effectiveness of integrating text messaging in an online environment. The pilot was created to (1) identify if the text messaging approach for updating students with important information was effective; (2) evaluate text messaging as a tool for improving social presence; and (3) study student perceptions of text messaging as a tool for communication.

The study was designed to provide students enrolled in three online courses in the Department of Business, Career, and Technical Education an opportunity to experience text messaging. A distance education participant group (DEPG) was established, consisting of students enrolled in courses on Dreamweaver and Flash, personal finance, and independent study.

For the pilot, e2Campus absorbed the costs. Estimated expenses for a full-scale rollout to all students on campus were about one dollar per student per year.

Prior to the implementation of text messaging during the summer session, students enrolled in the online courses were surveyed to determine their cell phone carriers and if they had text

messaging capabilities. Of the students surveyed, 72 percent had text messaging and used it on a regular basis. Of the students enrolled in the courses, 28 percent received text messages for free, whereas the remainder had to purchase a text message bundle or pay up to 10 cents per message. Those students who did not own a cell phone could receive the identical information via e-mail.

The professor's role is to create a dynamic learning environment encompassing several outlets for learning to take place. Vygotsky[14] stated that learning is a social process. If the professor provides the appropriate environment, students should have multiple opportunities to interact and communicate. Developing a dynamic technological infrastructure allows the creation of a social space in which communication is abundant to ensure that both instructor and student have a voice.[15]

Prior to the start of the summer session, we developed ideas for the type of information to send students via text messaging. Elizabeth Hodge, the professor who was involved in the pilot study, addressed several instructional design factors before implementing the new technological tool as a medium for communication. Based on the traditional theoretical approach to instructional design, Hodge analyzed content, delivery method, learner characteristics, and the process necessary to provide material in an online environment. The main focus of the evaluation was to determine the best way to tie the short message service (SMS) text messages to information students wanted to receive. We selected the following types of messages for the pilot:

■ *Course updates*: General information about the course for a particular week, including information students need to complete course requirements.
■ *Grade information*: Updates on grades.
■ *Deadline information*: Course calendar information to keep students on task.
■ *Weekly "hot" topics*: Topics provided to invoke debates and foster communication about the curriculum for the online course.

What We Learned

We conducted a survey to evaluate the effectiveness of text messaging in an online environment.[16] Students in the three participating distance education courses who completed the survey indicated that text messaging is a technology they enjoy using to communicate. Table 1 shows how students responded to the questions from the survey.

Some of the students' comments in response to two open-ended questions on the survey follow:

1. *What did you think when you found this course would be incorporating text messaging as a communication device?*
"Interested."
"Nervous."
"I do not own a cell phone."
"Cool."
"Nice."
"It was a change from other courses."
"Excited."
"Curious, ready to try something new."
"I thought it was OK."
"I thought it was a neat idea."
"Not used that often, didn't like it."
"Needed to add additional option to phone."
"Worried over cost."

"How is that going to work?"
"It would be fun."
"Interested in how it would work."
"Wasn't sure the value of it."
"A good alternative way to communicate."
"Challenging."
"I didn't know what to expect."
"It was fine with me, trying something new."

2. *Please make additional positive or negative comments about the course, technology, or communication process.*
"It met all of my expectations."
"I had the opportunity to learn about something that was of interest to me that was not offered as a course option."
"Wonderful class."
"Excellent instructor and a lot of information."
"Excellent."
"I don't mind it, but I don't think it is necessary."
"The communication was great!"
"Allowed a variety of learning methods."
"Great course, instructor very encouraging and interacts more than other instructors."
"I think that all of these new ways of communication are great, and I am glad

Table 1	
Student Responses to Survey	
Response to Survey Questions	**Percentage of "Yes" Responses**
Felt comfortable participating in this online course	100%
Felt comfortable expressing their feelings during this online course	95.8%
Would enroll in another course that offers text messaging as an option	91.7%
Said that course communication met their expectations	91.7%
Found text messaging for course information helpful	87.5%
Said that the cost of receiving text messages was NOT a hindrance	87.5%
Feel that text messaging is a useful tool for use with distance education courses at ECU	83.3%
Have previously used text messaging	79.2%
Found text messaging for grade updates helpful	75.0%
Feel that text messaging is a tool that can improve a sense of caring and trust between students and instructor	75.0%

I am a part of a department [that] is not afraid to go to the next level."

"Great way to stay in touch [with] class."

"Text messaging takes much longer to use and it was not used that much."

"If text messaging is used to notify us about grades, and used as a reminder for important events, it could definitely be a very useful tool."

Data collected in this survey indicated that most students were willing and anxious to experiment with the use of text messaging to enhance communication with their instructor. As with any technology, some students were early adopters, anxious to try anything new. Others were more cautious and concerned about potential expenses or complications in using the tool. Also, some students simply did not want to think much about using another tool to communicate.

A major consideration when implementing a communication tool such as text messaging is the cost to students. Some carriers do not charge a fee for each message, while others do. We learned early in our pilot that not all cellular handsets could receive the entire message sent out by the instructor because some cellular providers split the message into two messages, while others cut off part of the message. This issue had to be resolved for the pilot to proceed. Our software partner, e2Campus, solved the problem by reducing the character counter so that individuals sending alerts had to limit the size of messages. This resulted in effective use of the text messaging tool for sending course updates and campus alerts.

Conclusion

This study aimed to adapt instructional pedagogy to make it more compatible with the mobile lifestyle of today's students. The goal of this research was to evaluate and provide suggestions on how to incorporate SMS text messaging so that both professors and students could maintain a social presence within a learning community.

Data collected indicated that the students liked to use SMS text messaging and felt that it was useful for enhancing communication in their online class. The collaboration and communication created through the use of text messaging also supported the creation of a social context that fostered a sense of community. Using the text messaging tool, teachers and students became active participants in the learning process. Furthermore, the use of SMS text messaging to share online resources allowed students to learn through interaction with other students in an online environment. The learners applied their combined knowledge to solve course problems.

The SMS text messaging tool also provided a medium for communication and dialogue, which engendered the "immediacy" sought by many online learners. Consequently, we believe that if text messaging is integrated effectively into an online class and used for well-defined objectives, it provides a useful tool for enhancing social presence and communication among learners. *e*

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