Lower Perceived Performance in Testing

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INTRODUCTION

Distance education is big business; more than 1.6 million students enroll in distance education classes annually. The Institute of Higher Education (2000) estimated that by 2004 more than 90% of all two- and four-year colleges will offer some sort of online courses. By the end of 2003, the virtual education market will grow in excess of $21 billion (Svetcov, 2000). New technologies and improvements in networking capabilities are enabling distance education instructors to come closer to providing the traditional learning environment for their students. However, many issues still need to be resolved and, according to recent research studies, it does not appear that these will be resolved any time soon.

The research in distance education goes back into the late 1920s, when the first studies were published comparing the test scores of students in a classroom to their counterparts in a correspondence course (Crump, 1928). Since then, hundreds of journal articles, studies and reports have been published with similar comparisons with TV, radio, videotapes, computer-based training, audio-conferencing, groupware and now the Internet, representing the technology compared to the traditional classroom (Moore, 1995).

Much of the distance education research compares the distance education approach to the traditional classroom approach, looking for areas where the results from the distance education approach equals or exceeds those from the traditional classroom approach. Table 1 provides a summary of selected research.

Many confounds are involved, making this type of research difficult. One of these confounds is the definition given to "distance education." These definitions range from correspondence courses to satellite classrooms, where the instructor travels to lecture to a group of students meeting face to face, to courses that are held via e-mail, to courses that are held via two-way full-motion video with other technological support. The definition debate will probably never end, as some definitions do not include the use of any technology (correspondence courses), while others require several technologies to be implemented (full-motion video with chat rooms, listservers and e-mail). For the purpose of this study, our definition of distance education involves a student body who never see each other or the instructor; who communicate via e-mail, phone or chat; and who hand in assignments via e-mail or via posting to a common work group area.

This study looks more closely at student satisfaction; specifically, student satisfaction with the testing process in our distance education program. To help reduce the threat of cheating, all student tests are timed. A timer starts when the student begins the test. The timer counts down the time, and is clearly visible in the corner of the screen. After the timer is started, the student can view the questions and take the test. Should the timer expire, the students' work up to that point is automatically submitted.

One potential problem with this method is the increased stress that might arise. Building on the work of Hora and Kling (2002) and Haythornthwaite, Kazmer, Robins and Showmaker (2000), we hypothesize that this stress comes from two sources. The first source is the fear of not performing well; the second is the fear of not performing as well as your peers. Both fears exist in a traditional classroom, although the latter fear may be somewhat lessened since students can receive some visual clues as to how well they are doing compared to their peers.

Table 1. Selected distance education findings

Researcher	Findings
Kling (2000)	Social informatics – social issues brought on by use of Internet technology.
Shipley and Veroff (1952); Papert (1980); Hills & Francis (1999)	Learning requires a social context to be effective.
Bandura (1977)	Social Learning Theory – the interaction of people with their environment.
Gunawardena and Little (1997)	"Social presence is a strong predictor of satisfaction."
Tu (2000)	The main driver of learning is the "consciousness of another person in the environment."
Russell (2003)	Meta analysis of distance education studies where "no significant difference" between students in distance education and students in traditional classroom environments was found.
Colorito (2001)	Online students participated more than traditional students.
Neslar and Hanner (2001)	Online nursing students showed more socialization characteristics than their peers in the traditional classroom environment.
Gagne and Shepherd (2001)	Found online students less satisfied than their peers in the traditional classroom with the availability of the instructor.
Maki, Maki, Patterson and Whittaker (2000)	Found satisfaction with a lecture course to be lower for online students than for traditional students.
Chen, Lehman and Armstrong (1991)	Found that the attitudes of students in a computer-based class were less positive than attitudes from students in a conventional classroom.
Hogan and Kwiatkowski (1998)	Calls for more research on impact of technology of large groups.
Hearn and Scott (1998)	Suggest that the technology in the distance environment must be able to address the social context of learning.
Hill and Francis (1999)	Students were more successful in the computer-based training environment when more social interaction occurred.
Carr (2000)	Found lower retention in distance classes.
Brown and Liedholm (2002)	Found that students in the virtual classroom performed worse than their traditional counterparts on examinations.
Agger-Gupta (2002)	Offer cheating and plagiarism as concerns for distance education.
Kirkman, Rosen, Gibson, Etsluk and McPherson (2002)	Dealt with creating trust and overcoming feelings of isolation in the distance environment.
Hora and Kling (2002)	Suggest that distance courses may create new anxiety and stress for the student.
Haythornthwaite et al. (2000)	Found that the distance environment limited the number of social cues.

THE RESEARCH STUDY

In the traditional test-taking environment, students get feedback from the other students in the room. This feedback takes several forms. The first is in the form of pre-quiz, "working" of the room. Students ask each other how much they studied for this quiz and how difficult/easy they think it will be. A second form of feedback occurs during the actual taking of the test. In the role of a student, suppose I see that time is running out and I'm only 75% of the way through the quiz. If I notice that 90% of my peers are still taking the quiz I may realize that at least we are all "tanking" this quiz together (misery loves company). This socialization cue will help to dampen my fear. A third cue is in the form of the post-quiz "working" of the room. Students get a chance to see how well the others thought they did (albeit perceived performance) on the quiz. The distance student does not have easy access to any of these