

Summary of Studies of the effect of supportive learning environments on enhancing overall distance education learning experiences.

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Topic Sentence: Is having a supportive learning environment a factor in the overall success of distance education students' learning experiences?

Distance education has been the subject of studies in one form or another for well over eighty years. The early forms of distance education took into account correspondence courses, radio-based learning, film, television, interactive television, and eventually reached computer based learning in one form or another (Logan & Conerly, 2001). While learners have proven a demand for distance education through its popularity, studies have shown that incorporating a sense of community into distance education courses and programs can improve the learning experience on the whole.

The research question of my review is the same question asked in the Topic Sentence: Is having a supportive learning environment a factor in the overall success of distance education students' learning experiences? The idealized independent variable is taking a class online as opposed to traditionally in the classroom. The idealized dependent variable is the impact social interaction can have on learners taking distance education courses.

Differences in how the IVs were operationally defined

The independent variable in each of the articles chosen for this review is the differences in effectiveness of distance education classes as perceived by learners through their social interaction. Since effectiveness is an abstract concept, the measurements vary from article to article with the idealized independent variable.

Differences in how the DVs were measured

The dependent variable, effectiveness of supportive learning environments to educational experiences, is not so easily calculated. It was measured using questionnaires, surveys, and evaluations. The questionnaires in two of the studies (King, 1995 & Shin, 2003) used a Likert type scale to rank the extent to which students felt their learning experience had been positive or negative. Ivers, et al, (2004) chose to base their results on an end of program survey and midpoint reflections written by students. Since this study was descriptive, they were more concerned with the options students appreciated, then comparing data from group to group. Logan (2001) collected data on the number and type of active questions or voiced participation by face-to-face and online groups through a course evaluation using a Likert type scale. A post-test questionnaire was used in the 1996 study (Hiltz) using an eight-item scale, which was rated by three expert judges (blind to condition) whose scores were analyzed to assess a level of agreement (inter-rater reliability = .85).

Sources of internal validity compromise; e.g., problems with the design and execution of the study.

The studies had varying response rates at the end of the studies that could compromise the validity of the findings. The lowest results came from the Logan study with a return of only 32% from their web class group. Shin, Ivers, and King were uniform with approximately an 83-84% response rate. Hiltz's findings were based on information collected during the class sessions and from class materials, which allowed them to collect data on 100% of the participants remaining at the end of the class term, but they did have some no shows after assigning students to groups, which affected their initial even distribution of students within groups.

Differences in samples, populations, and assessments of external validity.

The populations in all of the studies either represented a random sample or were from a modified random sample. The modified random sample was from the

study by Shin (2003) and involved undergraduate students from various academic programs at Korea National Open University, limited to only those students who attended compulsory tutorials at two regional study centers. Since these students were required to attend tutorials, the external validity of this study is not as strong as the other articles. In addition, the gender distribution of subjects was slightly skewed in favor of females (71%) making the study more representative of female students. King's study (1995) included all students enrolled in distance education courses through the Off-Campus Professional Agriculture Program through Iowa State University giving this study a strong external validity since no limitations were imposed on the sample. The key article (Logan, et al, 2001) focused on 30 students enrolled in a traditional face-to-face offering of a course and 49 students enrolled in the same course offered through web classes. The demographic profile of the students showed that the web class participants were making a considerable effort of time and money to gain a higher level of education while the on-site students expressed less interest in career building and more in specific course-related goals. The personal dedication to their programs of study made the internal validity of this study variable and therefore, subject to speculation. The 2004 study (Ivers, et al) chose a population of 18 graduate students in a Master's of Science Instructional Design and Technology program, which is a small amount of students to be evaluating in order to project that the study has external implications. Hiltz's (1996) population came from a random sampling beginning with 140 undergraduate students in an ethics course covering computers and society. This sample had a few members leave during the course that changed the makeup of the smaller internal groupings that resulted in a lower statistical power than originally planned for the study.

Implications of the degree to which the studies support or deny the hypothesis.

The hypothesis tested in each article can be summarized as: Is having a supportive learning environment a factor in the overall success of distance

education students' learning experiences? One of the studies was descriptive (King, et al, 1995), but the study supported the idealized hypothesis. The hypotheses in three of the other articles was supported and conditionally supported in the Hiltz, et al, article (1996).

In the Key article (Logan, et al, 2001) the hypothesis was supported by the indication that there are different forces working in the distance education environment that are operationally different than on-site or face-to-face classes. Social communities are imperative to the effective learning process for students and interestingly enough, students that seemed intimidated to participate in discussions in an open forum were less frightened by the online opportunities where social pressures were less evident.

The 1995 article (King, et al) was descriptive and postulated that there were differences in the interaction needs of students taking distance education courses and the effectiveness of the courses. Their results suggested that instructors need to develop and maintain personal contact with all students regardless of the course delivery medium, and that all students involved in distance education specifically desired a high quality of interaction that enhanced communications, improved teaching and increased student interest in content matter.

A stable and supportive learning environment was projected as necessary in order for students to have a positive attitude toward online learning (Ivers, et al, 2004), which would also promote student achievement and course completion. Their study's hypothesis was supported indicating a need to provide a stable and supportive learning environment, which in turn promoted positive attitudes, positive course perceptions, and the expected course completion and student achievement.

Shin (2003) predicted that learning achievement, satisfaction and persistence in distance education courses would be significantly effected by a learner's

perception of Transactional Presence of teachers, peers and the educational institution. The findings of the study were consistent with the hypothesis and indicated that dependent variables influenced learners' motivation, course engagement, as well as learning achievement.

Hiltz (1996) proposed that groups are better at making decisions and would be more creative at generating options and that since other studies have shown that online students are more motivated than traditional students, that online groups would produce significantly better products than those online students working alone. Their hypothesis was conditionally proved correct in that individuals interacting online with course materials were not as effective as those in traditional classrooms, but with the use of collaborative materials, they became at least as effective as students in the traditional classrooms.

The five studies reviewed are timely based on the ever increasing enrollment in distance education programs. They all show that it is imperative that institutions and instructors actively include opportunities within distance education courses that will promote the feeling of community between learners resulting in more effective and positive online experiences for their students.

References:

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Summary of Studies of the effect of supportive learning environments on enhancing overall online learning experiences.

Author(s)	Independent Variable	Dependent Variable	Hypothesis Tested	Threats to Internal or External Validity?	Hypothesis Supported?
Logan, E., & Conerly, K.	The independent variable for this study is the location of the class and the mode of teaching.	The dependent variable for this study was the difference in social interaction among students in distance learning and face-to-face educational environments.	Distance Education classes and traditional face-to-face classroom environments create a different sense of community for students which in turn enhances the overall learning experience.	Generalizing the observations of the study to a larger population outside of the study is questionable since student face-to-face communication varies in different course delivery formats. However, it was concluded that for web-based course formats, it did appear that students do feel a need for a learning community and will find ways to communicate and connect with their classes, even if a format is not formally provided by the class structure.	There are basic forces at work within a distance education environment that are different from those operating within on-site or face-to-face classes and social communities are integral to an effective learning process for most students.
Hiltz S.R.	The independent variables for this study were individuals working off-line, groups working off-line, individuals	The dependent variable was the difference in individual on-line effectiveness as compared to collaborative learning	Groups are better at making decisions and more creative at generating options and on-line groups would produce	Results were only marginally significant at .08, but students in the individual on-line condition reported lower levels of	Putting individuals on-line to interact with course materials is not as effective as the traditional classroom, but

	working on-line and groups working on-line	effectiveness.	disproportionately good results and members of on-line groups would be more motivated than those working alone.	motivation than either students working together in a classroom or working in groups on-line.	using collaborative learning approaches can make on-line learning at least as effective as the traditional classroom.
King, J. and Doerfert, D.	The independent variables were student interaction through courses offered in 3 formats: face to face, online, and through videotape.	The dependent variable was the interaction needs of learners.	Determine the differences in interaction needs of students taking distance education courses and the effectiveness of the courses.	Findings were calculated with a .95 reliability coefficient. Questionnaires were developed by the researchers and of the 139 students involved in the study, 115 responded by returning their questionnaires. Interaction statements were developed from a review of relevant literature and instruments used in similar studies. Cautions were noted since only a few students took the classes face-to-face or online.	Results suggest that instructors need personal contact with all students regardless of delivery method. All students desired high quality interaction with the distance education technology
Ivers, Karen S., Joyce Lee and JoAnn Carter-Wells.	The independent variables were students' prior experience with computers, peer interaction, teacher/student interaction, and institutional support.	The dependent variable was the identification of multiple variables that can influence students' online learning experiences.	A stable and supportive learning environment is necessary in order for students to have a positive attitude toward online learning, which promotes student achievement and student course completion.	Findings were based partially on student reflections, which then had to be interpreted, and only 15 of the 18 participating students responded.	The hypothesis was supported and indicated the need to provide a stable and supportive learning environment in order for students to have a positive attitude toward online learning. Positive attitude and perceptions promoted course completion and student achievement.
Shin, Namin	The independent variables were student measurements of perceived learning achievement, satisfaction with overall distance learning experience and persistence to continue distance	The dependent variable was the degree of difference in the relationships of learners within student/teacher, student/peer and student/institutional partnerships.	Distance education learner's perceptions of the Transactional Presence of teachers, peers, and the education institution significantly predict learning achievement,	Literature behind the logic and rhetoric of Transactional Presence construct is selective, so may be limiting; mode of measurement was through student self-evaluation which may be argued	Findings were consistent with the hypothesis and indicated that students' interaction with the institution, teacher presence and instructor's social interactions with students influence

	learning		satisfaction, and persistence.	as not being reliable; and the gender distribution was not even, being skewed towards females.	students' motivation, course engagement, and learning achievement.
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