

A Comparison of Live Instruction and Interactive Televised Teaching: A 2-Year Assessment of Teaching an MSW Research Methods Course

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Objective: This study evaluated the performance and experiences of distance learning students enrolled in a graduate-level foundation social work research methods course. Method: Students who received face-to-face instruction in a media-readied classroom on the main campus of the university were compared with their remote classmates who simultaneously received course instruction at a regional campus via interactive television (ITV). Students' performance in the course was evaluated. In addition, students' attitudes toward distance education as well as their experiences in this course were assessed and compared. Results: The findings illustrate there were no statistically significant differences in students' performance or attitudes and only minor differences in the assessment of their experiences in the course. Conclusions: With no statistically significant differences found in students' performance or experiences, ITV appears to be a viable technological option for schools of social work to deliver research methods courses.

Recent developments in multimedia technology have had a significant impact on the field of social work education, with distance learning as an instructional delivery method increasingly being used by schools of social work across the nation (Siegel, Jennings, Conklin, & Flynn, 1998). Larger public institutions with combined MSW-BSW programs are the most likely academic environs to use distance education (Siegel et al., 1998). Of the 41 institutions Siegel et al. (1981) found to be engaged in distance learning, 39% used compressed video, 42% used satellite transmission, and 42% used television. Yet, with the advent of such technologies come questions regarding

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their quality and effectiveness in educating students for the social work profession, which values the importance of human interaction.

Although social work educators are coming to recognize the potential telecommunication technologies offer for expanding the delivery of courses, there is still a relatively limited body of research evaluating the effectiveness of distance learning in social work education. As early as 1982, Australian educators Jones, Putt, and Store explored the use of distance education for expanding the academic and continuing education opportunities of those who could not attend classes in traditional university settings. Other articles discussing distance learning in social work education appeared during the ensuing decade (Cnaan, 1989; Falk, Shepard, Campbell, & Maypole, 1992; Kelley, 1993; Weinbach, Gandy, & Tartaglia, 1984). More recently, models for social work education delivery and teaching strategies have been suggested by Jennings, Siegel, and Baskind (1992) and Blakely (1992, 1994). Preliminary assessments of student learning have found remote students to perform as well as or better than their traditional in-class counterparts (Patchner, Petracchi, & Wise, 1998; Petracchi, 1998; Petracchi & Morgenbesser, 1995).

Given the increasing use of distance learning, thoughtful consideration of how students view these learning experiences is also important. Of the limited number of studies that have assessed student experiences, some evaluations have found students to be relatively positive in their responses to distance learning, although a major challenge is students' desire to interact with their peers (Barker, 1992; Beare, 1989; McNeil, 1991), and one recent investigation found students to prefer live instruction. Petracchi (2000) assessed the experiences of remote learning students on two urban campuses. Of the 142 respondents, the overwhelming majority (100% at one school and 75% at the other) indicated that if given the opportunity, they would enroll in a distance learning course again. Heitkamp (1995) evaluated interactive television in North Dakota where technology was used to provide baccalaureate and graduate social work courses to rural communities located 90 to 370 miles away from the main campus. Heitkamp (1995) found course satisfaction of remote rural learners mirrored that expressed by the on-campus students. Similarly, Jennings et al. (1992) as well as Thyer, Artelt, Markward, and Dozier (1998) found no significant differences in overall satisfaction between on-site and remote students registered in an interactive television course. However, Thyer, Polk, and Gaudin (1997) found that students favored live instruction over distance learning when offered the option with the same instructor.

The body of knowledge regarding the experiences of students who have participated in distance learning courses is limited but expanding. The challenge of teaching with mediated student interactions is addressed by this study, which adds to the literature through an evaluation of the performance and experiences of students enrolled in a foundation graduate-level social work research methods course that used interactive television (ITV). ITV has also been referred to as compressed video, interactive video, or video conferencing. The performance of students enrolled in the course offered face to face on campus was compared with the performance of remote students who simultaneously participated in the course via ITV. In addition, students' attitudes toward distance education as well as their experiences in this course were evaluated.

METHOD

Classroom Sites

During the spring semester of 1996, two groups of students were enrolled in a foundation graduate-level social work research methods course. One group of students ($n = 14$) received face-to-face instruction while seated in an ITV classroom on campus. In this classroom, students could view their remote classmates over TV monitors and could interact with them. Students at the remote site ($n = 8$), which was located at a regional campus approximately 75 miles from the main campus, were able to see, hear, and interact with their peers who received face-to-face instruction. The course was repeated during the 1998 spring semester, and an additional two groups of students were added to the evaluation. One group of students again received face-to-face instruction in the media-readied classroom on campus ($n = 17$), while the other group ($n = 19$) simultaneously received the course at the same remote site via ITV.

Teaching Methods

Each time the course was offered, it met once a week during the 15-week spring term, with the same instructor delivering the course each term. The course consisted of lectures with brief in-class assignments primarily focused on developing research skills. The instructor made one trip each semester to the remote site to deliver a lecture in person to the remote students, during which the on-campus students participated via ITV.

Outcome Measures

Academic performance was evaluated by two examinations (based on the content of lectures and readings) and a final research paper. The first examination, given during the 7th week of the term, consisted of true-false, multiple-choice, and short-answer questions. These examinations primarily administered definitional questions that assessed basic knowledge of research methods, concepts, and their application. The second examination, administered on the last day of the term, used a comparable format. The examination grades were calculated as the percentage of the total correct answers.

Each student's final paper grade was derived from a class project that entailed an evaluation of the effectiveness of ITV versus face-to-face instruction in delivering a research methods course, thus enabling students to evaluate their course while concurrently serving as the subjects in their own evaluation. Both remote students and on-campus students were assigned to work on the same group project. According to criteria listed in the syllabus, students' final papers were graded based on: content coverage relevant to the topic of the paper, quality and development of the paper, paper organization, use of proper citations and referencing methods, format of the reference list and/or bibliography, wording and phrasing, grammar and sentence structure, punctuation, spelling, and unedited typing errors. The research papers were blind-graded by the instructor and assigned a letter grade. Letter grades were then converted to a percentage grade—A+ = 98%, A = 95%, A- = 92%, B+ = 88%, B = 85%, B- = 82%, and so on.

To calculate each student's final grade for the course, the scores on the two examinations and on the final paper were averaged together with equal weight applied to each.

All of the students in each class completed a questionnaire that, in part, assessed background information—specifically, age, gender, marital status, employment status, student status, and paid and volunteer experience. On each of these variables, comparisons were made between those receiving the course face to face and those receiving the class via ITV.

To assess students' attitudes toward their distance education experience, a survey instrument was adapted from one used by the University of North Dakota (Haga & Heitkamp, 1995). The student satisfaction survey, administered by a social work faculty member who was not associated with the course, elicited both qualitative and quantitative information describing the benefits and the drawbacks of distance learning. The questionnaire directed students to respond to three distinct categories of questions. First, students

were asked to assess the teacher's interactive skills. Second, students were asked about resource availability. Finally, student attitudes about ITV technology were assessed, including whether their experience had been such that they would enroll in a distance education course again.

Research Design

During the final week of the course, the student satisfaction survey was mailed to students at the remote site and distributed in class to the on-campus students. Students were provided with a stamped envelope addressed to the independent faculty evaluator. Students were asked to return their completed surveys at their convenience and were assured that survey results would not be shared with the instructor until after final grades for the course had been submitted to the university registrar.

Although not all students chose to participate in the satisfaction survey, information was available for each student regarding course grades (inclusive of grades for examinations, papers, and final grades). To assess the differences between the two groups of students on examinations, papers, and final course grades, *t* tests were used. Chi-square was used to assess differences in their attitudes and experiences on the student satisfaction survey.

RESULTS

In all, 58 students were enrolled in this course over the two terms it was offered, with 31 receiving face-to-face instruction on campus in the media-readied classroom and 27 remote students receiving instruction via ITV. Both on-campus students and remote students were remarkably similar in their demographic characteristics, with no statistically significant differences found. Of the on-campus students, 87% ($n = 27$) were female. They averaged 34 years of age, with 6.2 years of paid social work experience and 4.6 years of volunteer experience. Similarly, 88% ($n = 24$) of the remote students were female. They averaged 35.8 years of age, with 8.2 years of paid experience in the human services and 5.2 years of volunteer experience. Both on-campus and remote students had completed an average of 1.9 courses in research or statistics prior to enrolling in the foundation research methods course under discussion.

Students' performance in the class. Students' academic performance was evaluated according to three criteria—performance on the two examinations and on the final paper. The grades on each of these assignments were averaged

TABLE 1: Comparison of Mean Scores for On-Campus and Remote Students

	<i>On-Campus Students (n = 31)</i>	<i>Remote Students (n = 27)</i>	<i>t Value</i>	<i>df</i>	<i>p Value</i>
Exam 1	85.6	84.4	-.504	56	.616
Exam 2	81.1	78.6	-.907	56	.368
Paper	90.6	90.2	-.265	56	.792
Final course grade	85.8	84.5	-.755	56	.454

together to obtain a final grade for the course. As Table 1 demonstrates, there were no statistically significant differences between the on-campus students and the remote students on these measures. The students receiving face-to-face instruction scored 85.6% on the first examination, 81.1% on the second examination, 90.6% on the paper, and 85.8% for the overall course grade. By comparison, the remote students receiving ITV instruction scored 84.4%, 78.6%, 90.2%, and 84.5%, respectively.

Students' attitudes regarding the class. During the first term the course was offered, 73% of 22 students enrolled in both sections of the course responded to the survey (64%, $n = 9$, of on-campus students and 88%, $n = 7$, of remote students). Among the 1998 spring term students ($n = 36$), 92% (or 33 students) responded to the survey, with 82% ($n = 14$) of on-campus students and 100% ($n = 19$) of remote students responding. Hence, for the purposes of this statistical analysis, responses were available from a total of 49 students (on-campus $n = 23$ and remote $n = 26$), giving an overall response rate of 84.5%.

Questions regarding the teacher's interactive skills queried students about their assessment of the instructor's ability to communicate verbally and nonverbally. All of the on-campus and remote students found the instructor to appear comfortable delivering the course using ITV. One hundred percent of both groups of students also found the instructor's verbal communications to be adequate. However, 5 remote students (19%) were neutral in their impressions of the instructor's ability to communicate nonverbally ($p < .01$). Although not statistically significant, it is interesting to note that on-campus students were more concerned with the quantity and quality of interaction between the instructor and the remote students than the remote students were themselves. Of the on-campus students, 22% ($n = 5$) felt that the amount of interaction with the remote classroom was inadequate, with 13% ($n = 3$) being

concerned about the quality of these interactions. Only 2 remote students (8%) shared these concerns.

In this investigation, remote students' experiences with resource availability did not differ significantly from the experiences had by on-campus students. However, 2 remote students (8%) felt that classroom materials were not readily available, and 1 remote student (4%) was concerned about the accessibility of the library, research facilities, and the instructor outside of class. Four remote students (15%) felt that the library and research facilities were inadequate. However, in anecdotal discussions with the instructor, remote students indicated that their library concerns had more to do with using the time they devoted to this class efficiently than with the adequacy or accessibility of the library and research facilities themselves. The remote students, who all held full-time jobs during the day, would have preferred to have had a complete course packet inclusive of all supplemental materials available at the first class rather than having to go to the library to retrieve and/or photocopy the materials themselves.

When students were asked to assess the technology itself, both on-campus and remote students were pleased with the various video transmissions viewed on their monitors (this included transmission of human images and other instructional aids). Interestingly, 3 (13%) of the on-campus students and 1 remote student (4%) indicated concern about the clarity and understandability of sound transmissions. This is not an entirely unexpected result given that clarity of sound in ITV is where technicians expend most of their efforts (Spirek, 1995).

Finally, students were asked whether the course met their expectations and whether they would enroll in another course delivered in this format. Whereas both groups of students expressed a desire for more interaction with the other group of students, of the students receiving face-to-face instruction on campus, 83% ($n = 19$) felt that their expectations for this course were either met or exceeded, as did 77% ($n = 20$) of the remote students. With this in mind, 86% ($n = 20$) of the on-campus students and 96% ($n = 25$) of the remote students indicated they would enroll in another course if it were offered in the ITV format.

DISCUSSION AND APPLICATIONS TO SOCIAL WORK EDUCATION

The results of this study demonstrated that students at a remote site receiving instruction via ITV performed as well as students receiving face-to-face instruction in a foundation social work research methods course. Students in

both groups indicated that their expectations for the course were either met or exceeded and felt that ITV was an acceptable mode of instruction.

Effectively delivering social work classes to remote sites via ITV requires that sufficient resources be made available to the students outside of the classroom. Delivery of courses using technology should also strive to ensure comparability of the learning experience between remote students and on-campus students. Unfortunately, instructors often have less control over resources (such as the availability of books and journals) at remote sites. In this study, the instructor put reference materials on reserve at the remote campus library. However, an interesting finding from the remote students (all of whom held full-time jobs during the day) was that they would have preferred supplemental articles and reference materials photocopied together in a single course packet available at the first class rather than being available at the reserve desk of the library. These remote students felt that retrieving and photocopying materials outside of class was an inefficient use of their time.

The instructor is another resource that needs to be made available to remote students as he or she would be to on-campus students. Remote students described in this study attended class at a regional campus that had computer facilities and access to the Internet. Having such resources facilitated student learning and allowed the instructor to use broader teaching strategies. Therefore, the instructor was able to provide instruction on using a computer for data input and analysis and was easily available to all the students either in person or via ITV or telephone after class as well as by e-mail and in person or by telephone during regular office hours.

Students at both sites in this study anecdotally expressed a desire for more interaction with the other group of students. This is a major challenge in distance education (Barker, 1992; Beare, 1989; McNeil, 1991). Offering a social work education course face to face while simultaneously delivering instruction via ITV to another class requires creativity and planning to promote both formal and informal interaction among the students. The ITV system used by these research classes was not available except during class time, thus it did not allow for down-time communication between the two groups of students. Facilitating interaction between sites during periods outside those designated for course delivery may enhance the cohesion between on-campus students and students at remote sites.

The findings of this study must be viewed with some caution. The convenience sample and small number of students in each class prevent generalizing the findings beyond this study. Both groups of students also reversed roles and experiences as a result of the instructor's visit to the remote site each term, influencing the purity of this design. Moreover, requiring students to conduct a research project in which they themselves served as subjects may

have influenced their responses to the satisfaction survey. There also may be differences between the two groups of students that may have affected the results of this evaluation in unknown ways (e.g., one group of students lives in a more rural environment, and the other group of students lives in a more urban area). Perhaps the most important limitation to this study is the fact that the face-to-face instruction was not the traditional face-to-face instruction administrators, faculty, and students normally expect. Students who received face-to-face instruction in this study were instructed in a media-readied ITV classroom surrounded by sophisticated technical equipment with a technician present at all classes. This limitation prevents comparisons of ITV students with truly traditional classroom students and calls for research designed to make these comparisons.

Despite the aforementioned limitations, this study's findings contribute to the distance learning knowledge base in social work education and suggest that ITV can be employed effectively to deliver research methods courses without sacrificing student achievement and satisfaction.

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