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A Study on How Interactive Distance Education Affects Perceived Instructor Credibility

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A Study on how Interactive Distance Education

Affects Perceived Instructor Credibility

(TITLE)

BY

D. Brent Crebo

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A Study on how Interactive Distance Education
Affects Perceived Instructor Credibility

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Abstract

A group of distance education students at four Illinois colleges and universities were studied to see if sending class students rated distance education instructors differently in reference to credibility when compared to receiving class students. A survey was used to gather initial data and then subjects were interviewed by telephone to obtain more information on the topic. The results of the study revealed no significant difference between how students at receiving sites and how students at sending sites perceived an instructor in terms of overall credibility in distance education courses. Responses indicated that students did not have a problem with distance education instructors for the most part, but many of them had problems with the interactive process of the courses. These problems led to many difficulties in the learning process. Responses also showed students to be very abstract in creating criteria for worthless or valuable traditional

classroom instructors and worthless or valuable distance education instructors. Future research needs to use a narrower operational definition of teacher credibility that factors in the setting of the classroom. A more focused definition will allow for a truer representation of perceived instructor credibility within the distance education classroom. Future research that is more focused needs to be conducted on this topic in order to confirm or reject the findings of this study. Future studies would also be very helpful in the upgrading, design, and implementation of new equipment to alleviate currently existing problems.

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Chapter I: Review of Literature and Historical Foundation

I find distance education to be a fascinating topic. It seems to be the "new wave" in educational practices. More and more schools at various levels are adopting distance education programs to enhance their scholastic offerings. Being a communications student, I became very interested in the aspect of communication between teacher and student in the distance education process. One of the most important elements of communication is credibility of the communicator. I was surprised to find no research about distance education directly relating to the issue of communicator credibility. This void is what brought me to this study.

Distance education is not a new phenomenon, nor is research on the topic. Many papers have been published on the subject of distance education. Some of the aspects which have been studied include ease of learning (Bernt & Bugbee, 1990; Piirto, 1993), degree of learning in comparison to traditional classrooms (Clark, 1989; Chung, 1991), degree of interactivity (Stone, 1988; Zhang &

Fulford, 1994), attitudes toward distance education (Catchpole, 1988; Simmons, 1991; Burton, 1989), and procrastination (Wilkinson & Sherman, 1989).

Bernt and Bugbee (1990) looked at distance education through the ease of learning perspective. They surveyed 300 adult learners who had taken distance education courses in the past and found different types of study methods were being used by different types of students. Piirto (1993) also looked at this aspect. She wrote a short article dealing with some problems and benefits associated with student learning which should be considered with distance education.

Degree of learning in comparison to traditional classrooms was covered very well by Clark (1989) and then by Chung (1991). Clark studied two groups of students that were taking a course with the National Fire Academy. One group attended the course at a teleconference site and the other gathered in the classroom with the instructor. He found that while both groups of students learned the course material, the group that met in the classroom with the instructor scored significantly higher on tests. Chung completed a similar study which found contradictory results.

Students taking a course in the traditional classroom format, a live telecourse format, and a studio format were used for the study. Chung found "...no significant difference between student academic performance in the three kinds of delivery methods" (p. 44).

Distance education studies have also touched on the aspect of interactivity. Stone (1988) completed a study which observed a graduate engineering course that used distance education. His study contended that degree of interactivity did not affect students in terms of test scores. Zhang and Fulford (1994) studied 260 students and found related results. They found that no significant relationship existed between student satisfaction or attitude towards interaction itself and actual interaction time.

Catchpole (1988) conducted a study that measured students' level of satisfaction with distance education courses. A study involving 92 students found them to be very positive about the experience. Ninety-two percent of the students surveyed rated their distance education course as "good" or "excellent." Simmons (1991) also found students to be supportive of courses supplied through

distance education. Burton's study (1989) found that community leaders had similar reactions to distance education courses. They felt that distance education could provide answers for some rural community problems.

Wilkinson and Sherman (1989) decided to address the aspect of procrastination as it dealt with distance education. They found that noncompletion in distance education courses was a major problem. Administrators and professors of distance education programs were interviewed to determine if procrastination was a significant part of the problem. Wilkinson and Sherman's study found procrastination to be a problem that was associated with noncompletion in distance education. The study provided the groundwork for developing a strategy to combat procrastination in distance education courses.

While these studies are very important, they do not focus on how students perceive their instructor when taking a course which involves distance education. As a result, the present study examined the distance education process as a variable which could possibly affect a student's perceived credibility of an instructor.

The fact that little or no research has been published

in this area was not the only reason for conducting a study on this topic. Credibility is an extremely important part of the learning experience. It is important that students think that their instructor is a credible person on the subject that the instructor teaches for an adequate level of learning to take place. Students need to be able to believe an instructor in order to accept what that instructor is teaching. In addition, students need to feel that the instructor is somewhat an expert in the field which he or she is teaching. Teaching level and degree of learning can be impaired when these aspects of instructor credibility are perceived to be absent by students.

This study could have taken many directions due to the various forms of distance education that exist. However, the purpose of the study was to observe whether or not instructor credibility was affected by using distance education as a mode of teaching students. To direct the research down a specific path, some major terms had to be defined before this study could take place. It was obvious that a clear definition of distance education was needed.

Joy Riddle of the University of Northern Colorado studied students in a distance education class with a pre-

test/post-test method. The study dealt with students' concerns and feelings toward such a class. From the information that was collected, she provided recommendations for designing a distance education system . Riddle defined distance education in this way:

The learner is physically separated from the sponsoring institution which administers the contract between the student and the teacher.

There is some mediated intervention such as satellite, fiber optics, or microwave which makes bridging the distance possible. Other media uses such as audiotape, videotape, facsimile machines, and print help provide access to the instructional content (1990, p. 4).

A second and more recent definition of distance education is shown by Terry Ann Mood. She put together an annotated bibliography which examined many distance education aspects such as teacher roles, student roles, and the overall philosophy. Mood came up with her own definition of distance education through a compilation of research. Her definition includes four characteristics.

1. Teacher and learner must be separated for most

of the learning process.

2. The course or program must be influenced or controlled by an organized educational institution.

3. Some form of media must be used, both to overcome the physical separation of teacher and learner and to carry course content.

4. Two-way communication in some form must be provided between teacher and learner (1995, p. 19).

These two definitions are very broad because there are many types of distance education. Distance education can be accomplished with the use of audio tapes, video tapes, written communication, computers, and interactive video to name a few channels. This study focused on interactive video used in the distance education process, within the constraints of the above definitions, and how it affects perceived credibility of the instructor.

Evan Pitkoff and Elizabeth Roosen used their experiences with distance education in Connecticut high schools to write an article describing what they considered to be a successful interactive video system. The type of

distance education system that Pitkoff and Roosen wrote about in their article contains the characteristics of the distance education system used in this study. Pitkoff and Roosen describe the type of distance education used for the purposes of their article.

In a typical distance learning arrangement, a few students meet in a classroom with their teacher.

This is the "sending" class. In another town, miles away, a small group of students meet in a classroom with no teacher physically present.

This is the "receiving" class (1994, p. 37).

This type of learning environment is possible with the use of interactive video. This communication channel was chosen for two main reasons. The first is that interactive video, or interactive television is the newest and most used technology in distance education programs today.

Interactive television is also the most popular communication channel installed in new distance education programs.

Gloria Musial and Wanita Kampmueller are both experienced distance education instructors. They wrote an article which dealt with aspirations and misconceptions

related to distance education. They reflected on the use of interactive television in distance education programs.

...in order to provide academic opportunities for more students and faculty, American institutions of higher education as well as P-12 suburban and urban schools are installing their own telecommunications infrastructures (1996, p. 28).

The second reason, relevant to the study, is that interactive television is the closest comparison to traditional in-class, face-to-face instruction that is available today. "IVN (Interactive Video Technology) systems facilitate access and interaction between and among citizens, students, teachers and known experts in many different locations...(Musial & Kampmueller, 1996, p.28). Pitkoff and Roosen (1994, p. 37) state, "Students at both sites can interact as if they were in the same classroom."

The advent of interactivity as a teaching tool reduces the likelihood for comparing dissimilar communication modes within a single context. In addition, it reduces the number of variables that must be accounted for to ensure that the research remains focused.

This study addressed students' perceived credibility of

instructors in a distance education format. Credibility then became another term that needed to be defined. An operational definition had to be comprised that would encompass the many different qualities that instructors must possess.

Alan M. Rubin is a professor and Director of Graduate Studies in the School of Communication Studies at Kent State University. He wrote about credibility in an abstract and all encompassing form, that of source credibility. Rubin stated that, "Source credibility refers to the believability of sources of information" (1994, p. 327).

Patricia Kearney is a Professor and Deputy Chair of the Speech Communication Department at California State University. Kearney, a renowned researcher, has published books, chapters, and articles in more than five different communication journals. Kearney (1994) narrowed the aspect of credibility from the abstract source credibility to the more descriptive teacher credibility. Her definition is as follows, "Teacher credibility refers to students' attitudes toward or evaluation of their teachers" (p. 352).

Cleveland State University Professor of Communication
Michael Beatty and Miami University Assistant Professor of

Communication Christopher Zahn clarified teacher credibility further. They collaborated to write an article dealing with instructor credibility in 1990. The article originated from their study which examined the relationship between teacher credibility and student perceptions about the respective instructor and course. They described a credible teacher as "qualified; knowledgeable; expert; informed; and experienced" (p.278).

These three definitions synthesize to form two dimensions of credibility: 1) Competence (Kearney, 1994) or Perceived Expertness (Rubin, 1994), and 2) Character (Kearney, 1994) or Perceived Trustworthiness (Rubin, 1994). These dimensions of credibility are important criteria for teaching as shown in the example discussed earlier.

The first dimension of credibility as defined by this study is competence or perceived expertness. This part of the definition is most likely related to the instructor's use of the technology involved in the distance education process. Instructors as a whole have achieved their respective positions due to their knowledge and expertise in their respective subject area. Linda Costigan Lederman of Rutgers University would agree. Lederman edited and

partially authored the textbook *Communication Pedagogy: Approaches to Teaching Undergraduate Courses in Communication*. In it she stated, "...simply by having the title of instructor/professor, the teacher is perceived as a credible source of information on the subject matter" (1992, p. 7) Although using interactive television does not change the knowledge base of the instructor, he or she must also be able to use the technology effectively and efficiently in order to appear competent or as an expert in the eyes of the students.

Teaching in a traditional classroom and teaching over interactive television are similar, but they are not identical. "Teachers cannot walk into a distance learning room without technical training. They must be able to work with the equipment to be effective" (Pitkoff & Roosen, 1994, p. 39).

An instructor may have to learn new methods of teaching in order to effectively deliver a course over interactive television. Jules Older taught his University of Vermont course, "Writing for Real," in the distance education format. He wrote about his experiences teaching over interactive television.

TV teaching takes getting used to. I've learned to signal the cameraman with one finger or two when I want one image or two to appear on the screen. I signal with a beckoning hand when I want him to move in for a close-up and with a wagging finger when I want to change from Burlington to Springfield on the monitor. I've learned to turn off the mikes during the break and to move a little slower than usual to accommodate the slightly jerky transmission over the dedicated phone line's compressed signal (1993, p. 10).

Many interactive television classrooms are set up so that the instructor is responsible for all of the technological procedures including making sure that remote sites come on-line, moving cameras, selecting monitors, and the numerous other procedures that are involved. This type of setting can be even more difficult for an instructor to adapt to and learn. An instructor's perceived credibility level by a student may suffer if the instructor is unable to use the equipment in an effective and efficient manner.

The second dimension of credibility is character or perceived trustworthiness. This dimension can be affected

through aspects such as teaching style and interaction. An instructor's teaching style cannot always be the same when comparing a class taught with interactive video to one taught in a traditional classroom setting.

Professor of Business Administration Edna Ward and Assistant Professor of History Edward Lee are experienced distance education instructors at Winthrop University. They wrote an article which covered tips and basic methods for teaching over interactive television. Ward and Lee agree that an instructor must sometimes adapt their teaching style for interactive video. They addressed this idea through one of the most generic tools of teaching, the handout or visual. "The demands of cameras and monitors change the way you'll design and create visuals. Inappropriately prepared visuals can make distance learners feel left out of the conversation" (1995, p. 42).

On the other hand, visuals which are prepared properly for this type of use can be very beneficial. Older found that the use of video cameras made his visuals more effective. He wrote, "I can also show manuscripts and contracts to the camera more easily than I can to a roomful of students. They get an instant close-up view of a problem

clause in a sentence-or in a publishing contract" (1993, p.11).

The method which an instructor uses to teach material can also have an effect on how students using this medium perceive him or her. An instructor who is accustomed to straight lecturing can appear to be a "talking head." This type of teaching objectifies students. It just does not work very well as shown through the education television movement of the 1960's.

Elaine K. Bailey and Morton Cotlar believe that a collaborative learning environment needs to be created between the instructor and students. Bailey is an Assistant Professor and Cotlar is a Professor in the College of Business Administration at the University of Hawaii. They studied students at the University of Hawaii to find what methods were being used to teach students with the technology that is now available. They wrote, "Students should not be viewed primarily as recipients of information, but as collaborators in the pursuit and creation of knowledge" (1994, p. 193). Keeping students involved in the learning process allows them to reach the limits of the learning situation. Today's interactive video technology

makes this collaborative learning environment possible, even at a distance.

While an instructor needs to avoid becoming a "talking head," the instructor must also avoid becoming over animated. The video technology that is used is not fast enough or accurate enough to follow an instructor who quickly moves from place to place in the classroom. An instructor who does this will remove him or herself from the viewing screen at the receiving site. Fast movements by an instructor can also cause trailers to appear on the television screens at receiving sites. It is sometimes difficult for an instructor to find the middle ground in teaching style that will not distract and aggravate students in a distance education course.

Another aspect that could alter perception of the character or perceived trustworthiness dimension of credibility is interaction. A student's interactivity with an instructor is of major importance when trying to create the collaborative learning environment. Although students at the sending site and at the receiving site have the ability to interact with the class, that does not mean that they will.

Associate Professor in the Department of Communication Studies at the University of North Carolina-Wilmington

Patricia Comeaux conducted a study in 1995 that addressed this very issue. She "...examined the impact of the interactive distance learning network on the human factors involved in communicating and learning..." in two separate courses (p. 354). Both courses were observed 15 times. Comeaux showed that students felt that the idea of being projected on a television screen somehow enhanced their persona. "Students described the experience of seeing themselves on the monitor as 'very uncomfortable' or 'intimidating'" (p. 358). "In addition, several students felt they had to have a 'profound' question or comment to warrant 'the sound of the camera coming after you and then focusing on you'" (p.360).

This feeling about images projected on a television screen could show a positive effect in perceived credibility of an instructor for both groups of students due to the fact that each type of classroom contains video cameras, television sets, and microphones. The same feeling by students could also bring about an equally adverse effect. Comeaux (1995) showed that students who felt intimidated by

the cameras did not participate for the most part. Many of these students became complacent and uninvolved. They compared the course experience to that of watching television. "One student described the experience as 'watching a documentary that was not particularly interesting'" (p. 357).

A lack of interaction between the instructor and the students can lead to a feeling of impersonalness. This takes the instructor right back to the aspect of the "talking head." The instructor can worsen this problem by relying on the interactive technology too much. Older described this problem by stating, "When I wanted to check the feelings of the students sitting beside me, instead of looking directly at her, I watched her on the television monitor" (1993, p.10).

The review of literature shows that there are many aspects which must be considered when teaching through this interactive medium. As a result, an important question emerged. Is there a relationship between the perceived credibility of an instructor and the mode of instruction (direct to classroom or through interactive television)? This study looked at what students perceive the distance

education instructor's credibility level to be, in reference to the stated dimensions.

Chapter II: Method

The best way to determine if a difference existed between sending class and receiving class students in perceptions of instructor credibility is through a triangulated method of data collection. A survey was used to gather initial data. A list of interview questions was then formulated from the survey results. The interview questions were used to conduct telephone interviews with students who had previously agreed to participate. The interviews were recorded on cassette tape and a form of content analysis was applied to the responses in order to gather significant data.

Variables

There were two variables for this study in data collection. The independent variable was the use of an interactive distance education process. The students attended class by physically being in the same room as the instructor or they attended a remote site which was linked to the instructor through interactive television.

The dependent variable was the perceived credibility of an instructor by the student, according to the stated dimensions. This variable was described and measured in an ordinal manner through the use of a fifteen item semantic differential survey.

Survey

The instrument used to collect initial data was a survey. The first part of the survey featured fifteen constructs in a semantic differential response pattern (see Appendix A). The survey asked students to rate their respective instructor's credibility by assigning a value toward adjectives describing their instructor on a seven point scale. Responses were taken by filling in circles on an answer sheet that correlated to questions on the survey.

The second part of the survey asked students questions about their demographic information and about their experience with distance education courses (see Appendix B). This section asked students to respond to questions with a yes-no or multiple choice type answer. The students did this by filling in corresponding circles on the answer sheet

once again. This information was used to correlate the semantic differential data by separating groups for comparison.

The majority of the survey was formed by combining aspects of three established surveys. McCroskey's *12-Item Semantic Differential* (Rubin, 1994), Berlo's *Source Credibility Scale* (Rubin, 1994), and McCroskey, Holdridge, and Toomb's *Teacher Credibility* scale (Kearney, 1994) were chosen. Twelve of the constructs were collected from the above three surveys. The remaining three constructs which were added to the survey were enthusiasm, sympathy, and experience. All fifteen of the constructs used in this survey were chosen because they fit within the previously stated dimensions used to define credibility.

Validity

A pre-test of the survey instrument was completed to ensure that the survey was a valid instrument. A group of students in five communication courses at Eastern Illinois University were asked to rate their instructor by using both McCroskey's *12-Item Semantic Differential* and the

Credibility Survey that was put together for this study. McCroskey's *12-Item Semantic Differential* was chosen to compare to the *Credibility Survey* because of its extremely high reliability statistics.

All students in the pre-test took their respective communication course in the traditional classroom setting. Each student was asked to rate his or her instructor with one of the surveys and then with the other immediately after completing the first. The order that the students received the surveys was alternated from one class to the next.

The factor analysis statistical measure was applied to the data that was returned from the pre-test. Responses to both surveys showed that they were measuring similar concepts. This showed that the *Credibility Survey* and McCroskey's *12-Item Semantic Differential* are consistent instruments.

Reliability

Using established instruments to construct this survey gave the study a good start toward acceptable reliability measures. The reliability coefficients of the established

instruments which were combined to form this survey were very high. McCroskey's *12-Item Semantic Differential* scale posted reliability coefficients ranging from .93 to .98 (Rubin, 1994, p. 333). Berlo's *Source Credibility Scale* has shown reliability coefficients ranging from .67 to .92 (Rubin, 1994, p. 327). The *Teacher Credibility* scale by McCroskey, Holdridge, and Toomb has shown reported estimates of reliability coefficients ranging between .84 to .93. (Kearney, 1994, 353).

The *Credibility Survey* was not able to be measured for reliability statistics. Since factor analysis showed the *Credibility Survey* and McCroskey's *12-Item Semantic Differential* to be consistent instruments, McCroskey's reliability statistics of .93 to .98 can be accepted for the survey used in this study.

The survey was anonymous for both students and instructor. The students were asked to complete the survey without attaching their names on the answer sheet. There was also an absence of questions which would identify the specific course and instructor. The anonymity of the surveys helped keep reliability coefficients high by allowing subjects to respond without fear of repercussions.

Subjects

The subject pool for this experiment consisted of various undergraduate college students who attended Illinois universities and community colleges. Students from Eastern Illinois University, Danville Area Community College, Illinois Central College, and Western Illinois University participated in the study. The survey was given to both sending and receiving class students. The subject pool was made up of both male and female, part-time and full-time students. Female students represented the majority in both sending and receiving classes. Sending classes contained a majority of full-time students while receiving classes were dominated by part-time students.

Procedure

Surveys

The survey was given to all of the students who participated in the study. Students in both groups were given the same instruction by the same instructor at the

same time, in reference to their specific class, for the duration of the semester. Both groups were given identical surveys.

The survey was given to students in one of two ways. The students were either given the survey during a class period or they received the survey through the mail. All students participating in the study at Illinois Central College, Western Illinois University and the sending class students at Eastern Illinois University were given the survey and answer sheet during a class period which was determined by the instructor. The surveys and answer sheets were then collected for tabulation.

The remainder of the surveys were distributed to students by mail. All participating Danville Area Community College students and participating receiving class students from Eastern Illinois University received a cover letter, a survey, an answer sheet, and an addressed, stamped return envelope through the mail. The students were asked to respond to the survey and return the materials in the envelope provided.

All surveys completed in class at Illinois Central College and Western Illinois University were distributed to

the schools by April 1, 1996. Instructors were given a deadline of May 15 to distribute, collect, and return the surveys and answer sheets. I personally distributed and collected surveys which were completed in class at Eastern Illinois University on May 8, 1996. The mail surveys were distributed in the last week of May. The students were given a deadline of June 7 to return the survey packets in the return envelope.

Interviews

The survey results were used to initiate the second part of the data collection. Five interview questions along with possible follow-up questions were created to gather more information on the data already collected. The phone interviews were conducted shortly there after. Students who had previously agreed to interviews on the topic were questioned about their distance education experience. A series of open and close ended questions were used. Each interview took about 15 minutes to complete. A formal structure of questions was used for each interview (see Appendix D).

Some form of textual analysis needed to be applied to the phone interview recordings to interpret them. Frey et al., (1991) described content analysis as a viable measure to use for the purposes of this study. They wrote, "For communication researchers, content analysis involves identifying and examining messages contained in a text" (p. 212). They go even further in stating that, "The primary goal of content analysis is to describe the characteristics of messages..." (p. 213). For these reasons, the interviews were examined along the lines of the content analysis interpretation method.

Chapter III: Results

All of the surveys that were returned contained usable data. One hundred nineteen surveys were collected from sending class students and 56 surveys were collected from receiving class students for a total 175 subjects. Illinois Central College returned 25 responses during the final week of April. One hundred six surveys were returned from Western Illinois University during the first week of May. Fourteen surveys were collected from Eastern Illinois University sending class students during the second week of May.

Thirteen survey packets were sent by mail to Eastern Illinois University receiving class students. Nine survey packets were returned by the deadline of June 7. One hundred thirty-seven survey packets were also mailed to Danville Area Community College students. Twenty-one packets were returned before the deadline. Nine of the 21 packets were returned by sending class students and 12 were returned by receiving class students.

The Chi-Square statistical analysis method was applied to the survey responses. When all fifteen of the constructs

were averaged together as a whole, sending class students were not shown to perceive instructors' credibility levels in a statistically different manner from the receiving class students. The results of this survey indicate that these two groups of students did not rate their instructors in a significantly different manner in terms of overall credibility.

A more in-depth examination of the survey results did reveal some statistical differences. Two of the concepts described by the *Credibility Survey* were answered in a significantly different manner. Receiving class students rated instructors significantly lower ($P < .03$) than the sending class students on the concept of valuable/worthless (see Table 1). Receiving class students also rated instructors significantly lower ($P < .02$) than the sending class students on the concept sympathetic/unsympathetic (see Table 2).

The second portion of the survey also revealed a significant difference in responses. The receiving class students answered in a statistically different manner ($P \leq .000001$) to question number 26 (see Table 3). It reads, "Comparing this course to other traditional courses that you

have taken, do you find the instructor easy to interact with?" The results indicate that the receiving class students in this study had a much more difficulty interacting with the instructor than did the sending class students.

These results were then used to formulate questions for phone interviews as explained earlier. Eleven students left their names and phone numbers indicating their willingness to participate in interviews. Seven of the eleven students were interviewed. The seven participants had taken their respective distance education courses from Danville Area Community College, Eastern Illinois University, and Western Illinois University. Two of the interviewees were sending class students and four were receiving class students. The final student to take part in an interview took a course in the sending setting as well as a course in the receiving setting during the same semester. This gave her the opportunity to see the issue from both sides. The other four students who agreed to be interviewed could not be reached.

The answers given by all seven interview participants were very similar. Question number one addressed criteria

used by students in evaluating an instructor as being worthless or valuable. All but one of the interviewees described a valuable instructor as one who makes the course "interesting" or "fun." Responses also showed that these two qualities dealt directly with interactivity. A worthless instructor was described as one who was not knowledgeable, could not stay on the topic at hand, and one who made no attempt at forming an interactive classroom.

The second question looked for possible differences between distance education instructors and instructors in the traditional classroom setting. The difference that was brought up most often (5 out of 7 interviews) was that distance education instructors had more factors to deal with in the classroom than traditional classroom instructors. The responses showed that distance education instructors must be more patient because of technical difficulties and students' apprehension due to the use of the technology. Responses also brought up the idea that distance education instructors have to put forth more of an effort to effectively teach a course when compared to instructors in the traditional classroom setting.

The third question asked students to compare distance

education instructors with traditional classroom instructors to come up with criteria to evaluate them as worthless or valuable. Even though students thought that distance education instructors needed to be more patient and had to put out more of an effort to teach a course effectively, most students said that their criteria did not change between the two situations. They seemed to feel that a "good" instructor could effectively teach a course in both settings, while a "bad" instructor would have trouble in either.

Responses were varied in reference to question four. Three receiving class interviewees felt that the distance education instructor was unable to adequately deal with students' individual needs in relation to non-personal issues. They felt that it was difficult to get questions asked and answered due to message delays and the "impersonalness" of the transmission. The other students felt that the process required more effort, but was manageable.

All interviewees were concerned about the communication with the instructor in relation to personal issues. They felt that the interactive video transmission was not a good

medium to use when discussing personal issues due to the fact that all of the other students could listen to the conversation. One student described the situation in terms of "having ears all around you." The interviewees said that the receiving class students had to make a deliberate effort such as calling the instructor on the telephone or traveling to the sending site to speak to him or her about personal issues.

Question five and its follow-up questions brought about responses which tied in with the answers to question four. All but one of the interviewees described the distance education situation as being a good learning environment. They also brought about the idea of poor quality of interaction from remote sites during the same answer. Six of the seven respondents indicated that the interaction process from remote sites was hindered due to time delays in the audio transmission, or break-up of audio transmission, or both.

A majority of the respondents said that by the time questions from remote students were transmitted, the instructor had usually moved on in the discussion. One student said that this made her feel as if she were "butting

in." Respondents indicated that interaction between receiving students and the instructor or receiving students and sending students was possible, but it "took more effort on both parts" than that which took place within the sending class setting.

Another important idea was brought up as a hinderance to interaction. Six of the seven students interviewed expressed at least some apprehension toward the video cameras. All six of these students felt that the use of video had a negative effect on interaction during the course. Students found the idea of being on television to be "indimidating." One student said that she was "leary" of asking questions at first. Another said that the aspect of video added pressure to the situation. She felt that she had to have a "really important question or comment" to speak out in class. Three of the students said that they felt "uncomfortable" or "self conscious" about being projected on a television screen. Another said that the whole process was "distracting."

Despite these feelings, two receiving class students and the one student taking classes in both the receiving and sending settings during the same semester rated their

respective courses as excellent. One receiving student and the two sending students rated their experience as good. The remaining receiving class student rated her distance education experience as being average.

A wide array of terms surfaced when interviewees were asked to describe the experience using four adjectives. A few of the same terms came up in different interviews. "Interesting" was used the most. It was said by four of the students. The next most popular term was "educational." It was listed in three different interviews. The only other term which was listed more than once was "fun." It was brought up in two different interviews.

None of the interviewees had taken a distance education course before this experience. All but two of them said that they would be willing to take another course that involved distance education. The two students who would not take another distance education course were made up of both a sending and a receiving class student.

The last questions under number five on the interview protocol addressed the technology which was involved. While all students rated the technology as adequate, they all listed problems associated with it. Six of the seven

interviewees were concerned with the transmission of sound. These students once again expressed concern about the delay time of the sound transmission, students voices being "chopped off" or "cutting out," or both. These six students saw this as being a hinderance toward interaction within the classroom settings. They felt that audio speed and overall quality needed to be improved more than anything else.

Chapter IV: Conclusions

Some important conclusions about the distance education process can be drawn from the study. The first is that students seem to rate instructors in a similar manner in terms of overall credibility regardless of the distance education process. The phone interviews showed that students in both sending and receiving classes felt that the instructor was credible on the subject that he or she was teaching because he or she is the instructor. This finding was in direct agreement with the statement by Lederman. Instructors bring a high level of credibility with them into the classroom just because they are instructors.

Another reason for the lack of significant differences in responses emerged from the phone interviews. A majority of the students indicated that they did not change their criteria when judging instructors who are in a distance education setting as opposed to those in the traditional classroom setting. Although, most of the interviewees said they were aware that the distance education instructors had more tasks to perform and were willing to be more patient in that setting. These students were also very abstract about

their judgements of instructors. They felt that a "good" instructor would be able to perform adequately in either setting and a "poor" instructor would not.

Another conclusion that can be drawn from this study is that students do not seem to have a problem with distance education instructors for the most part, but many of them have a problem with the interactive process. Interviewees expressed problems interacting with the instructor and other students when using interactive video as a medium for communication. Students said that using interactive video took more patience and effort when compared to face-to-face communication due to time delays and break-ups in the audio transmission. Interviewees said that these problems caused the students and the instructors to become frustrated with the process. These students also felt that they could not use the interactive video process to discuss personal issues with the instructor or with other students because anything that was said over interactive video could be heard by all members of the connected classrooms.

Interviewees expressed the idea that these difficulties could cause, and in some cases did cause, students to become complacent and to avoid interaction with the rest of the

class. One student said that she had to repeat herself, often more than once, when she asked or answered questions. She also said, "After a while I felt that it just wasn't worth it."

Another student responded in a similar manner. She indicated that she became a spectator of the class due to the difficulty of interaction. She said, "After a while it was just like watching TV." These findings correlate directly with the findings in Comeaux's study.

The difficulties with interaction that emerged from the distance education system were not contained exclusively within the process. In response to the increased difficulty with interaction, some students indicated that they simply gave up. The interviews also showed that both students and instructors experienced similar problems. Therefore, it is possible that instructors may have responded in a similar manner. Such actions would have a negative effect on the interactive process, making the situation considerably worse. Giving people the ability and the necessary interactive tools does not guarantee that interaction will occur. Other aspects such as level of difficulty need to be factored into the process.

The results of this study show that the difficulties of interacting in the distance education setting can cause serious problems in the learning environment. Students can become lost in the process and forgotten about. These students can then very easily become passive members of the class instead of active members of the class. Students who said that they became passive members also indicated that they did not learn as much as they could have and that the learning experience could have been better over all.

It is important to note that six out of the seven interviewees rated their respective distance education experience as "good" or "excellent." Five of these seven students also said that they would take another course which involved distance education. These students indicated that the extra effort which had to be put forth in a distance education course was a fair trade for the convenience that the course brought them. Some of the interviewees said that they would not take courses in the traditional classroom setting because they would have to travel a great distance to do so, sometimes over 100 miles. Factors such as convenience make distance education a viable source of coursework for students even with all of its problems.

These responses indicate that students who have no other recourse for education would tend to look more favorably on the distance education process and be more willing to deal with problems that may arise than students who have the option of taking courses in the traditional classroom setting. This may be a reason why sending and receiving class students did not rate instructors in a significantly different manner in terms of overall credibility. This does not mean that the problems associated with distance education can be overlooked. The process needs to be "fine tuned" so that students can achieve the highest potential of this learning environment. These problem areas need to be researched in order to determine exactly where the problems originate from and what can be done to solve them.

While the results of the study show a need for examination of the distance education system, they also show that a generic definition of credibility does not always fit the situation. This study narrowed the concept of credibility to the more operational definition of teacher credibility, but that was not enough. Teaching is an active process. For the instructor to be perceived as a credible

source, he or she must be effective in the act of teaching. The perceived credibility of an instructor is not based solely upon content knowledge, but also on his or her ability to disseminate and clarify information. The instructors in this study were rated very similarly in terms of overall credibility. However, interactivity with the instructors was perceived to be significantly more effective by students in the sending classes than students in the receiving classes.

While the problem may have stemmed from the interactive process that was used, the fact that there was a significant difference in responses still remains. This result calls for a more narrowed operational definition that will better fit the situation. A definition of a credible instructor needs to take the setting into account and factor in all of the aspects that are related to that particular situation.

An instructor may have the knowledge and skills necessary to be perceived as a credible source in the traditional classroom, but he or she may not have the skill or experience that is required in certain situations such as the distance education setting. A more detailed operational definition of credibility needs to be established in the

distance education classroom for this reason. The definition and instrument that were used made no overt distinction in criteria for instructor credibility due to setting. The abstractness of the definition and instrument that were used may have played major roles in the students' inability to observe qualities that differentiate traditional classroom instructors from distance education instructors.

Limitations

This study had a few limitations which must be considered. The first, and probably most important, was the difficulty of getting the project approved by individual instructors. The survey that was used contains many constructs that are similar to those found on an instructor evaluation form that must be distributed to students before the completion of many courses. Many instructors were hesitant to allow their students to take the survey. These instructors did not want to put themselves into a situation that would allow an "outsider" to have this type of evaluative data about them. Even though the utmost

precaution was taken so that there was no way for responses to be traced back to individual instructors, these measures were not enough in many cases.

The number of subjects suffered due to the fact that many instructors refused to allow their students to participate in the study. This project began with the intention of obtaining responses from at least 200 students in each setting. I soon found that this would be extremely difficult and almost impossible due to my personal time constraints for completion of the study.

Another problem with the number of subjects is that they are extremely weighted in the direction of the sending class. The number of receiving class students is extremely lower on average when compared to sending class students. Distance education courses are usually set up with around 15 or more students in the sending classroom. Two to three receiving classrooms that contain anywhere from one to ten students also take part in the course.

The next limitation ties in with the first two. Many students rate instructors higher than they believe the instructor actually deserves on teacher evaluation scales. These scales have some bearing on an instructor's job

security in many cases. This could have been a problem because the *Credibility Survey* was very similar to a teacher evaluation scale. The smaller number of subjects may not have been able to overcome this possible occurrence. Such an occurrence would not allow for a proper instructor rating by the "average" student.

Recommendations

This study raised a number of unanswered questions about the distance education process. The study needs to be repeated with a larger sample size so that the credibility findings can be confirmed. Using a larger sample size would give more of a realistic average of data to work with and to draw conclusions from. This would improve the study's external validity.

Another area that should be addressed is the qualitative research that was used. A better way to collect the necessary information would be through focus groups instead of phone interviews. Focus groups would allow for a free flowing of ideas. They would also greatly reduce the opportunity for biased or leading questions.

The last idea that I would recommend for a future study is the implementation of more hypotheses or research questions that relate to the conclusions drawn from the current study. Although this study was focused to one area of interest, it did not account for related aspects that must be factored into the process due the the setting. Future studies should narrow their focus to include only aspects of instructor credibility directly related to the distance education setting. Concepts inherently related to credibility in this setting such as interaction would then have to be accounted for. This will allow for a truer representation of perceived instructor credibility within the distance education classroom.

Information produced from future studies that are focused to the situation will be very helpful in upgrading existing equipment and with the design and implementation of new equipment to alleviate currently existing problems. Distance education is very effective in giving students a channel for taking courses and learning ideas for those who are in need of an alternative method. Even so, some of the problems associated with distance education can hinder the learning process and should not be ignored. Research to

find and solve these problems needs to be conducted in order to strive for the collaborative learning environment that is so very important to the learning process.

References

Bailey, I. K. & M. Cotlar. (1994). Teaching via the Internet. *Communication Education*, 43, 184-193.

Beatty, M. J. & C. J. Zahn. (1990, Oct). Are student ratings of communication instructors due to "easy" grading practices?: An analysis of teacher credibility and student-reported performance levels. *Communication Education*, 39, 275-282.

Bernt, R. M. & A. C. Bugbee. (1990, Apr). *Study Practices of Adult Learners in Distance Education: Frequency of Use and Effectiveness*. (ERIC Document Reproduction Service No. ED 323 385).

Burton, L. G. (1989). *Communication Technology for Rural Communities: A Qualitative Study of Rural Communities, Northeastern Washington State*. Pullman, WA: Washington State University. (ERIC Document Reproduction Service No. ED 325 296).

Catchpole, M. J. (1988, Dec). *Student Response to a Distance Education Course Incorporating Live Interactive Television*. Paper presented at the World Congress of the International Council for Distance Education. Oslo, Norway. (ERIC Document Reproduction Service No. ED 311 886).

Chung, J. (1991, Jan). Televised teaching effectiveness: Two case studies. *Educational Technology*, 31, 41-47.

Clark, B. A. (1989, March). *Comparison of Achievement of Students in On-Campus Classroom Instruction Versus Satellite Teleconference Instruction*. Paper presented at the National Conference on Teaching Public Administration. (ERIC Document Reproduction Service No. 327 668).

Comeaux, P. (1995, Oct). The impact of an interactive distance learning network on classroom communication. *Communication Education*, 44, 353-361.

Frey, L. R., C. H. Botan, P. G. Friedman, & G. L. Kreps (Eds.), *Investigating Communication: An Introduction to Research Methods*. Englewood Cliffs, NJ: Prentice Hall.

Kearney, P. (1994). Teacher credibility. In Rubin, R. B., P. Palmgreen, & H. E. Sypher (Eds.), *Communication Research Measures: A Sourcebook*. (pp. 352-355). New York: The Guilford Press.

Lederman, L. C. (1992) Creating the learning environment: Communication and relationships in the classroom. In Lederman, L. C. (Ed.), *Communication Pedagogy: Approaches to Teaching Undergraduate Courses in*

Communication. (pp. 3-18). Norwood, New Jersey: Ablex Publishing Corporation.

Mood, T. A. (1995). *Distance Education: An Annotated Bibliography*. Englewood, CO: Libraries Unlimited, Inc.

Musial, G. G. & W. Kampmueller. (1996, Winter). Two-way distance education: Ten misconceptions about teaching and learning via interactive television. *Action in Teacher Education*, 17, 28-36.

Older, J. (1993, Nov). Lights! Camera! Teach! *Writer's Digest*, 73, 10-11.

Piirto, R. (1993, Sept). Teaching on television. *American Demographics*, 15, 6.

Pitkoff, E. & E. Roosen. (1994, Sept). New technology, new attitudes provide language instruction. *NASSP Bulletin*, 78, 36-43.

Riddle, J. R. (1990, Oct). *Measuring Affective Change: Students in a Distance Education Class*. Paper presented at the Annual Meeting of the Northern Rocky Mountain Educational Research Association. (ERIC Document Reproduction Service No. ED 325 514).

Rubin, A. M. (1994). Source credibility scale - Berlo. In Rubin, R. B., P. Palmgreen, H. E. Sypher (Eds.),

Communication Research Measures: A Sourcebook. (pp. 327-331).

Rubin, R. M. (1994). Source credibility scale - McCroskey. In Rubin, R. B., P. Palmgreen, H. E. Sypher (Eds.), *Communication Research Measures: A Sourcebook.* (pp. 332-339).

Simmons, I. V. (1991, Jan). *Survey of Students' Attitudes toward the IHETS Delivery System.* (ERIC Document Reproduction Service No. ED 330 311).

Stone, H. R. (1988). *Does Interactivity Matter in Video-Based Off-Campus Graduate Engineering Education?* (ERIC Document Reproduction Service No. ED 325 071).

Ward, E. C. & J. E. Lee. (1995, Nov). An instructor's guide to distance learning. *Training & Development*, 49, 40-44.

Wilkinson, T. W., & Sherman, T. M. (1989, Dec). Distance education and student procrastination. *Educational Technology*, 29, 24-27.

Zhang, S. & C. P. Fulford. (1994, Jul-Aug). Are interaction time and psychological interactivity the same thing in the distance learning television classroom? *Educational Technology*, 34, 58-64.

Table 1

Chi-Square Analysis of Responses to the Construct
Worthless/Valuable on the Credibility Survey

<u>Number of Responses by Setting</u>			
Answer Chosen	Sending Class	Receiving Class	Total
1	1	2	3
2	0	1	1
3	0	2	2
4	5	7	12
5	8	6	14
6	25	11	36
7	80	27	107
Total	119	56	175

Chi-Square	14.900232
Degrees of Freedom	6.000000
Probability Level	0. 21047

Table 2

Chi-Square Analysis of Responses to the Construct
Sympathetic/Unsympathetic on the Credibility Survey

<u>Number of Responses by Setting</u>			
Answer Chosen	Sending Class	Receiving Class	Total
1	61	23	84
2	32	10	42
3	10	3	13
4	9	7	16
5	1	5	6
6	2	4	6
7	2	4	6
Total	117	56	173

Chi-Square	17.916311
Degrees of Freedom	7.000000
Probability Level	0.012353

Table 3

Chi-Square Analysis of Responses to Question #26 on the
Credibility Survey

<u>Number of Responses by Setting</u>			
Answer Chosen	Sending Class	Receiving Class	Total
1	97	26	123
2	21	30	51
Total	118	56	174
Chi-Square	23.458426		
Degrees of Freedom	1.000000		
Probability Level	0.000001		

Appendix A

Credibility Survey

This instrument was used to measure students' perceived credibility of their respective instructors. The survey was applied to distance education classrooms for this study.

Credibility Survey

Instructions: On the scales below, please indicate your feelings about your instructor. To do so, darken the circle on your answer sheet which corresponds to the correct number. All numbers show feeling toward the adjectives which they are closest to. Numbers "1" and "7" indicate a very strong feeling. Numbers "2" and "6" indicate a strong feeling. Numbers "3" and "5" indicate a fairly weak feeling, Number "4" indicates you are undecided or do not understand the adjectives themselves. Please work quickly. There are no right or wrong answers.

1.	Skilled	1	2	3	4	5	6	7	Unskilled
2.	Reliable	1	2	3	4	5	6	7	Unreliable
3.	Unintelligent	1	2	3	4	5	6	7	Intelligent
4.	Qualified	1	2	3	4	5	6	7	Unqualified
5.	Worthless	1	2	3	4	5	6	7	Valuable
6.	Dishonest	1	2	3	4	5	6	7	Honest
7.	Enthusiastic	1	2	3	4	5	6	7	Unenthusiastic
8.	High Character	1	2	3	4	5	6	7	Low Character
9.	Competent	1	2	3	4	5	6	7	Incompetent
10.	Untrained	1	2	3	4	5	6	7	Trained
11.	Sympathetic	1	2	3	4	5	6	7	Unsympathetic
12.	Untrustworthy	1	2	3	4	5	6	7	Trustworthy
13.	Expert	1	2	3	4	5	6	7	Inexpert
14.	Informed	1	2	3	4	5	6	7	Uninformed
15.	Experienced	1	2	3	4	5	6	7	Inexperienced

Appendix B

Student Information

This appendix represents the second page of the survey used in the study. It gathered demographic type of information that was used to separate the semantic differential data into groups.

Appendix C

Telephone Interview Protocol

This appendix gives an exact listing of the questions that were used in the telephone interviews to gather qualitative data. All questions listed were asked in every interview. New questions and follow-up questions were also asked depending on the situation.

Telephone Interview Questions: Distance Education

Introduction

My name is Brent Crebo. I am a graduate student at Eastern Illinois University. You recently filled out a survey describing your experience in a distance education course. You also left your name and phone number indicating that you would participate in a phone interview about the experience. Do you have time to participate in the phone interview? Do you mind if the interview is recorded on tape to ensure accuracy?

Questions

1. In evaluating an instructor as being worthless or valuable, what criteria would you use?
2. What would you determine to be the major differences between distance education instructors using interactive video and instructors in the traditional classroom setting?
3. Comparing your distance education experience to traditional courses, what characteristics would cause you to evaluate each type of instructor as worthless or valuable?
4. How would you rate a distance education instructor in terms of being able to deal with your individual needs as a student?
 - Was the instructor able adequately handle issues such as personal emergencies, questions and problems with assignments or the course in general, overall problems and concerns?
5. Speak on the overall experience of taking a course involved with distance education.
 - Describe the experience using four adjectives.
 - Rate the overall experience with one of the following adjectives: Excellent, Good, Average, Below Average, Poor.
 - Had you taken a course which involved distance education before this experience?
 - Would you take another course which involved distance education?
 - What are your feelings about the technology which was involved?
 - Was the technology adequate, helpful, bothersome?
 - What would make the technology better for use in the learning environment?