UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

GRADUATE STUDENT PERCEPTIONS OF TEACHER NONVERBAL AND VERBAL IMMEDIACY AND CREDIBILITY IN DISTANCE EDUCATION

A Dissertation

SUBMITTED TO THE GRADUATE FACULTY

In partial fulfillment of the

requirements for the

Degree of

Doctor of Philosophy

By

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Norman, Oklahoma
2005

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GRADUATE STUDENT PERCEPTIONS OF TEACHER NONVERBAL AND VERBAL IMMEDIACY AND CREDIBILITY IN DISTANCE EDUCATION

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ACKNOWLEDGMENTS

The successful completion of this dissertation could not have been done without the advice, support, and assistance of friends, faculty, and staff at both the University of Oklahoma in Norman and East Central University in Ada. I am most grateful to Dr. Eric Kramer, my chair, for his continual advice, motivation, support, encouragement, and guidance throughout the writing and completion of this dissertation, especially having faith in me throughout this arduous but rewarding journey.

Special thanks go to Dr. Amy Johnson, co-chair, for her constructive reviews and revisions, guidance, and invaluable assistance with her statistical expertise and analyses, and especially in the final editing of this dissertation.

To the rest of my committee members, Dr. Dan O'Hair, Dr. Amy Johnson, Dr. Todd Sandel, and Dr. Courtney Vaughn, I offer my deepest gratitude for the support, advice, and diverse expertise they contributed to this dissertation.

My appreciation also goes to Drs. Blake Armstrong, Tara Emmers-Sommer, Lynda Kaid, Mitchell McKinley, and Jennifer Samp, former faculty at the University of Oklahoma who advised me and made valuable contributions at the initial stages of this research study.

I am also thankful for the assistance and support that I received from Dr. Jack Paschall, my former supervisor and Dean of Graduate Studies at East Central University. Thanks also to the I-TV distance site coordinators and students, the I-TV on-campus Distance Education faculty, staff, and student assistants especially Starlene Harper and Costa Kukurinkov for their assistance and contributions to the success of this dissertation. Also, thanks to Dr. Tom Lanis, my friend and assistant professor of Business Administration at East Central University for his assistance in the review of data and statistical analyses of my study.

I would like to express my thanks and appreciation to Karola Schwartz, a dear friend and doctoral student of communication at the University of Oklahoma. Her support, encouragement, assistance, constructive comments and initial reviews, and editing of the dissertation were invaluable.

Thanks also to friends like Jeanie Anderson, former graduate student at East Central University, and Rhonda Barnett, Coordinator of Distance Education at the University of Central Oklahoma in Edmond, for their assistance with the collection of several research journals and manuals at their respective university libraries.

I would like to extend my thanks to the staff at the Graduate College, especially Ms. Rene Jenkins, Graduate Programs Representative for her invaluable assistance and for the wonderful job she does for all doctoral students at the Graduate College.

Last but not least, my deepest appreciation goes to my wonderful wife, Silviya, for her love, understanding, and endless patience and support throughout the writing of this dissertation.

Finally, I thank God for His spiritual guidance, strength, and inspiration in the pursuit and completion of my lifelong educational dreams.

May I add that while all these people made valuable contributions in many aspects of this dissertation, the final work represented in the dissertation is my own and, therefore, I am responsible for its contents.

DEDICATION

I would like to dedicate this dissertation to my late beloved mother, Mrs. Helen Jimaima Nnochirionye, who as a young widow in Nigeria encouraged me to go back to school after the Nigerian - Biafran Civil War. It was she who made it possible for me to seek higher academic goals as a way to alleviate the poverty and hardships that befell our family after the civil war. Thanks Mom for the strength, foresight, and fortitude that you bestowed on all of us to pursue our goals and strive towards achieving our lifelong dreams before you passed away. Mom, you will be proud that I finally made it.

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ABSTRACT

This study was designed to examine how student perceptions of teacher nonverbal and verbal immediacy relate to dimensions of credibility between I-TV face-to-face and distance education classroom settings. The study further examined to what extent classroom setting was a moderator for the relationship between teacher immediacy and credibility.

Specifically, the study compared the master's level graduate classes at East Central University, Ada, Oklahoma that are taught face-to-face on-campus and broadcast simultaneously to students at seven selected I-TV distance education classrooms via the Interactive Television (I-TV) instructional system.

A total of 224 graduate students participated in this study which was conducted at East Central University, Ada, Oklahoma in the Spring of 2002. Of the 224 participants, 79 were on-campus (ONC) and 145 were off-campus (OFC) at seven selected distance education sites in Oklahoma. A total of nine I-TV instructors participated in this study, six of whom were females and three were males.

The following results were found: (1) The first hypothesis predicted that perceived teacher nonverbal

immediacy will be significantly lower in the distance education classroom than in the face-to-face classroom was not supported even though the means were in the predicted direction. (2) The second hypothesis that predicted perceived teacher verbal immediacy would be lower in the distance I-TV classroom than in the face-to-face I-TV classroom was significant. Therefore, there was a stronger relationship between class format and verbal immediacy than perceived teacher nonverbal immediacy. (3) Hypotheses 2b and 2e, which predicted that perceived teacher competence and composure will be lower in the distance education I-TV classroom than in the face-to-face I-TV classroom was supported. However, hypotheses 2a, 2c and 2e, which predicted that perceived teacher sociability, extroversion and character respectively will be lower in the distance education I-TV classroom than in the face-to-face I-TV classroom were not significant, even though the means were in the predicted direction. (3) The result of the research question that asked “Was classroom setting a moderator for the relationship between immediacy and credibility in distance education?” indicated no support. All the correlations showed a positive relationship between teacher immediacy behaviors (nonverbal and verbal) and the

five dimensions of credibility (competence, sociability, extroversion, composure, and character) and all were significant at the .01 alpha level, except the correlations between nonverbal immediacy and competence for the on-campus students, which was not significant ($r = .181$; $p > .05$). Thus, this pattern of results does not suggest that classroom setting is a moderator for the relationship between nonverbal and verbal immediacy and dimensions of credibility, as these variables were related positively in both classroom settings.

This report reviews relevant literature, outlines the methodology utilized in this study, reports and discusses the findings, limitations of this study, and recommendations for future research.

CHAPTER 1

Introduction

Advances in telecommunication technologies such as Computer Assisted Instruction (CAI), WebCT and Blackboard Instructions, Computer Mediated Instruction (CMI), and Interactive Television Instruction (I-TV), have created many educational demands and benefits for distance education programs and learners. These telecommunications technologies provide many opportunities to meet these demands with the promise of instant access to educational opportunities regardless of time or geographic distance (Haynes & Dillon, 1992).

With increasing frequency, a growing number of educational institutions are now turning to telecommunications technology to improve the quality and diversity of education and to promote access to and equity of services to distant learners (Eure, Goldstein, Gray, & Salomon, 1993).

The age range of participants in distance learning situations extend from preschoolers to senior citizens. Depending on learner maturity, virtually all forms of content stretching far beyond the traditional face-to-face

classroom can be delivered to distant locations and learners Shane, 1991). Zigerell (1984) notes that “distance education provides alternative and inexpensive educational opportunities to both adult and young learners to achieve academic degrees and certificates” (p. 8). In contrast to conventional education (which is oral, written, and group-based), Keegan (1986) contends that distance education shatters the interpersonal communication of face-to-face interaction and disperses the learning group throughout the nation.

Today, with the varied needs of learners of all ages and maturity levels, a wide variety of learning materials are designed and transmitted through various technologies to reach a plethora of audiences. According to Schrum (1991), “using telecommunications technologies to communicate with geographically distant learners has truly become part of the new information age” (pp. 41-60).

This trend in distance education has resulted in the exploration of telecommunications technologies for use in classrooms and in homes. As noted by Phillip Moss (1998), ”distance education programs using telecommunications technologies are now increasing in number and size as higher education institutions seek to increase access and

educational opportunities to distance learners” (p. 1).

As new technologies continue to evolve and grow, many institutions are now expanding the link between distance education and the traditional face-to-face classroom to offer the same courses taught simultaneously in both the on-campus and off-campus formats (Moore & Kearsley, 1996). For example, the technological linkage gives students the opportunity and flexibility to retain their face-to-face instructional options without disrupting the flow of their daily routines and/or work hours. Thus, it is important that educators begin to grasp how to best utilize these new technologies to offer courses, programs, and access for opportunities for educational degrees and certificates.

Despite the increasing demand for distance education and the educational opportunities it provides, distance education still has a second-class status compared to traditional face-to-face education among many students (Souder, 1993). As apparently there is no evidence of differences in student learning and achievement (e.g., Fulford & Zhang, 1993; Haynes & Dillon, 1992; Moore & Kearsley, 1996), we need to start looking at other variables to have a better understanding of whether the

skepticism comparing distance education to face-to-face environments is warranted.

Several studies have examined variables which examined individuals' negative attitudes toward the distance format and whether classroom format relate to such factors as student learning. In a video-based instruction study comparing traditional and distance learning in three master's degree programs at Georgia Institute of Technology (GaTech), the University of Alabama in Huntsville (UAH), and the National Technological University (NTU), Souder (1993) found that the NTU students did not agree that face-to-face instruction with a live instructor in the classroom were as effective as viewing of videotapes, live broadcasts or attending a traditional classroom lecture.

The GaTech and UAH students believed that the traditional classroom instruction was superior than the videotapes because they wanted to be face-to-face with their instructors and interact with other students. The GaTech and UAH students also disapproved of videotape instruction and viewed distance instruction as a "second-class affair appropriate only for students who were not [residing] near a university" (p. 45). Thus, notes Souder (1993), the "acceptance of distance learning techniques may

be impeded by personal biases and emotional reservations, especially when these techniques are considered as substitutes for well-entrenched traditional instruction" (p. 45). Therefore, it is not surprising that distance education still remains under-utilized and under-researched, even though comparative studies between distance education and face-to-face instructional formats on topics such as student achievement (e.g., Brunning, Landis, Hoffman, & Grosskopf, 1993; Ritchie & Newby, 1989), or course evaluation (e.g., Beare, 1989) found little difference between the instructional formats. In fact, some of the research studies actually found positive outcomes for the distance education format. Martin and Rainey (1993) compared the results of a course in anatomy and physiology that was taught to seven conventional classes and by videoconference at high school level. They note that while there were no significant differences found in the students' pre-test scores, significant differences were found in the post-test scores, in favor of the distance learners.

Fulford and Zhang (1993) and Haynes and Dillon (1992), investigated student learning, interaction and attitudes between distance education and face-to-face contexts at the

college level and found little or no significant difference between the two formats. According to Haynes and Dillon (1992), an important finding of their study on student learning, interaction, and attitudes is that “although the students [investigated] expressed negative attitudes towards the delivery system, their attitudes do not appear to have interfered with their learning” (p. 43).

Studies have also shown that performance by students on achievement-type tests are similar and/or have little or no significant difference between face-to-face and distance education contexts (Ritchie & Newby, 1989). Ritchie and Newby (1989) examined the effects on student performance, attitude, and interaction of traditional classroom lecture/televised broadcast on-campus versus live televised instruction at a distance. They found that the “traditional group [students] did not differ in achievement from either of the other two groups” (p. 39).

Bruning, Landis, Hoffman, and Grosskopf (1993) compared student achievement (i.e. test scores) in an introductory high school Japanese course between interactive TV-based distance learning context versus the traditional face-to-face classes. They found that student achievement was higher for the distance learning students

than the students in the face-to-face classes. They conclude that “a carefully designed language instruction delivered by I-TV on some dimensions, may be more effective than face-to-face instructions” (Brunning et al., 1993, p. 37).

Comparative studies between distance education and face-to-face formats have also been extended to the U.S. Armed Forces (Moore & Kearsley, 1996). Keene and Cary (1990) compared the effectiveness of audio and video teaching of U.S. Air Force students at remote sites in eight states, while Phelphs, Wells, Ashworth, and Hahn (1991) compared interactive TV in Army Reserve officer training via computer-mediated communication (CMC) with face-to-face instructional formats. Results of these studies indicate that the test scores, completion rates, student perceptions, and results of effectiveness of instruction by CMC, audio and video instructions were no different from that of face-to-face instruction. According to Phelps et al (1991), “although the pretest scores of the two groups were not significantly different, however, the post test scores of the distant group were significantly higher than those of the face-to-face group” (pp. 7-19). Thus, given the evidence of the studies illustrated above,

what seems reasonable to argue is that distance education instruction can be as effective in bringing about learning and the absence of face-to-face instruction is not in itself a restraint to the learning process and outcomes of students (Moore and Kearsley, 1996). Why then, do individuals have negative attitudes about distance education, perceiving it as inferior? Perhaps individuals believe that their lack of face-to-face interaction limits the amount of important variables such as perceptions of teacher immediacy and credibility. The next section will discuss research comparing these variables in face-to-face versus distance classroom format.

However, one concern individuals have about distance education is potentially lower levels of teacher immediacy. A relatively limited number of studies have compared the relationship between immediacy and credibility in distance education. Frietas, Myers, & Avtgis (1998) examined whether perceptions of instructor immediacy differed between students in conventional face-to-face and distributed learning classrooms. They defined distributed learning as the “use of computers in distance learning where students primarily interact with the instructor and other students through computer-mediated communication” (p. 367). They

predicted that students in the conventional face-to-face classroom would perceive a higher rate of instructor verbal and nonverbal immediacy than students in the distributed classroom. They found that students enrolled in conventional and distributed classrooms did not perceive a significant difference in instructor verbal immediacy, but rather the students in conventional face-to-face classroom perceived a higher rate of instructor nonverbal immediacy than students in the distributed learning classroom. Freitas, et al. note that perhaps “because students in the distributed classroom are aware that face-to-face interaction will not take place, any expectations on instructor nonverbal immediacy may be lower than the expectations of the face-to-face students” (p. 370). They note with surprise that students in the distributed classroom did not differ in their perceptions of instructor verbal immediacy “given that technological problems in interactive transmission may cause distributed students to feel less verbally involved with their instructors who are physically located in the face-to-face classroom” (p. 369).

Witt and Wheeless (1999) explored possible relationships between students’ expectations for teacher nonverbal immediacy and their enrollment in a distance

learning course. They predicted lower expectations of teacher nonverbal immediacy among currently enrolled distant students than among currently enrolled traditional classroom students. Utilizing Andersen's (1979) 9-item Generalized Immediacy scale, 182 undergraduate respondents completed the scale indicating their expectations for teacher nonverbal immediacy behaviors. The study found that distant students expected less nonverbal immediacy from tele-course teachers than the on site students. Overall, the study found that students with previous distance learning experience had slightly higher expectations than students without any distance learning experience.

However, unlike the present study, the aforementioned studies focused primarily on computer-mediated communication and tele-course classroom formats in distance education rather than on both teacher nonverbal and verbal immediacy in distance education I-TV format. Therefore, this study will examine whether lower perceived teacher nonverbal and verbal immediacy in distance education will be related to such variables as perceived teacher credibility.

Another study examined the relationship between immediacy and student learning. Carrell and Menzel (2001)

investigated teacher immediacy behaviors between a live classroom, a video classroom, and an audio with PowerPoint display classroom with lower and upper division undergraduate students. The impact of the three educational settings on participants' learning, motivation, and perceived teacher immediacy was assessed and they found that perceived instructor immediacy was significantly higher for the live classroom when compared to a video classroom and an audio-based PowerPoint classroom. Similarly, the study also found that student motivation, perceived learning, affect toward the instructor and the willingness to enroll with instructor were highest in the live classroom setting compared to the other two settings.

Arbaugh (2001) examined whether instructor immediacy behaviors are significantly associated with student learning and satisfaction in Web-based MBA courses. He found that immediacy behaviors were positive predictors of student learning and course satisfaction and that instructor experience with Web-based courses were also significant predictors of student learning and course satisfaction.

Hackman and Walker (1990) investigated the effects of system design and social presence, in the form of teacher

immediacy behavior, on perceived student learning and satisfaction in the televised classroom. They found that system design (i.e., TV cameras, monitors, microphones, etc.,) and teacher immediacy behavior strongly impacted student learning and satisfaction. They noted that "instructors who engaged in immediate behaviors such as encouraging involvement, offering individual feedback, maintaining relaxed body posture and using vocal variety were viewed more favorably by the respondents" (p. 196).

Freitas, Myers, & Avtgis (1998) examined whether perceptions of instructor immediacy differed between students in conventional and distributed learning classrooms. They found no significant difference in instructor verbal immediacy but rather a significance difference was found in instructor nonverbal immediacy between students in conventional classroom than in distributed learning classroom.

One potential drawback to lower perceived immediacy in the distance setting is that this perception may lead to lower perceived instructor credibility. Prior research has shown a positive relationship between these two variables, that teacher immediacy positively affects students' perceptions of teacher credibility (Johnson & Miller,

2002). Few studies have examined the relationship of teacher immediacy and credibility relative to distance education I-TV format. These studies have focused primarily on the effects of nonverbal behaviors and instructor competence in distance education videotaped courses (e.g., Guerrero & Miller, 1998), the effects of classroom design and students' perception of instructor's credibility and immediacy in distance education classroom (e.g., Jayasinghe, Morrison, & Ross, 1997) and the impact of teacher immediacy and misbehaviors on teacher credibility in a traditional context (e.g., Thweatt & McCroskey, 1998).

For example, Guerrero and Miller (1998) examined the relationship between nonverbal behavior and initial impressions of instructor competence and course content within the context of instructional videotapes used in distance education courses. They predicted and found that "instructors who are viewed as expressive, warm, involved and articulate were judged as highly competent" (p. 30). Competence was defined by the authors in terms of likeability and trustworthiness. The findings indicate that "even in non-interactive environments such as videotaped lecture, the more warm a student perceives an instructor to be, the more likely the student will perceive the

instructor as competent and likable and thus would see the course content as valuable and enjoyable" (p. 38). Although this study examine nonverbal immediacy variable in distance education, however, the methodology was between videotaped lectures of distance education courses compared to the "live" broadcast methodology of the present study. Further, the study did not examine all the five dimensions of teacher credibility. Only one dimension (i.e., competence) was studied, and credibility was operationalized differently in the study compared to the present study which will examine all five dimensions of credibility (i.e., competence, sociability, extroversion, composure, and character).

Jayasinghe, Morrison, and Ross (1997) investigated the effects of camera angle and monitor placement on perceived instructor credibility and immediacy behaviors. They found that camera angle alone did not significantly affect participants' perception of instructors' credibility; rather, camera angle combined with monitor placements positively influenced instructor credibility, immediacy and interactions in a distance education classroom. Five dimensions (i.e., sociability, dynamism, composure, competence and character) of credibility was utilized in

this study to assess source [instructor] credibility with camera angle variations while the General Immediacy Scale (Anderson, 1979) was used to assess the perceived immediacy level of the instructor (Jayasinghe, et al., 1997).

In a traditional classroom, Thweatt and McCroskey (1998) investigated the impact of teacher immediacy and teacher misbehaviors on student perceptions of teacher credibility. The authors predicted that (1) immediacy would have a positive effect on students' perceptions of teacher credibility and (2) that teachers' misbehaviors would have negative outcomes by students' perceptions of the teacher being less credible. They found positive effects for teacher immediacy and strong negative effects for teacher misbehavior on the three dimensions of credibility of competence, trustworthiness and caring.

While the aforementioned studies shed light on the relationship between teacher immediacy and credibility, none used the same procedures to examine both a face-to-face and a distance classroom. Without the same procedure, comparing findings from the different formats is difficult. Therefore, the present study will examine perceived teacher immediacy and credibility in both settings. Due to the limited amount of research in the area of teacher immediacy

and teacher credibility in relation to distance I-TV students, this makes the present study one of particular importance for distance learning students, instructors, and educators. As noted by Richardson and Swan (2003) “teacher immediacy behaviors are especially important issues for those involved in delivering or receiving either online and/or other distance education programs” (p. 81). Accordingly, the present study is designed to extend the findings of teacher immediacy and teacher credibility research on verbal and nonverbal immediacy variables and five dimensions of teacher credibility in distance education. Thus, the primary goal and contribution of the present study and dissertation is to examine to what extent teacher immediacy (both verbal and nonverbal behaviors) relates to student perceptions of instructor credibility in face-to-face interactive television (I-TV) versus distance education I-TV format.

Communication and Distance Education

Communication is a good field of approach for examining distance education. It is especially appropriate for the field of communication to do so because in distance education, instructors and students are exposed to, and

interact with, a variety of communication channels used for teaching and learning.

Up until the twentieth century, the learning channels of written and face-to-face instruction were the only media of instruction, and these remain the primary ones today. The change of modality for instruction represented by technologically-based distance education therefore is a major one. Thus, communication, with its emphasis on the entire process of human interaction including the impact of channels, can lend a vital perspective to the study of distance learning and education.

Technology and Social Presence

Technology is having a major impact on the pedagogy of the twenty-first century and part of its importance stems from its ability as a channel and/or medium of communication to decrease or increase social presence (Gunawardena & Zittle 1997). Short, Williams, and Christie (1976), define social presence as the “degree of salience of the other person in a mediated communication and the consequent salience of their interpersonal interactions and relationships” (p. 65). This means that the degree to which a person is perceived as a “real person” in mediated communication is important in a distance education format

and so does the quality of the medium used (Gunawardena & Zittle, 1997). One's perceived immediacy level should relate to this question.

In a traditional classroom, communication is face-to-face between student and instructor and student and student. In a distance education classroom, due to the separation of instructor and students, communication is mediated by technology, and the technology is influenced by the degree of social presence conveyed by the technology (Jayasinge, Morrison & Ross, 1997). Thus, according to Gunawardena & Zittle (1997) "the capacity of a medium to transmit information, [specifically in a distance education context], such as facial expression, direction of gaze, posture, dress, and nonverbal cues all contribute to the degree of social presence of a communications medium" (p. 9).Depending on the type of medium used in distance education, social presence can convey a sense of closeness between people through factors such as aye contact and physical proximity (Argyle & Dean, 1965) or communicate behaviors that enhances closesness to and nonverbal interaction with another (Mehrabian, 1969). Social presence can also convey immediacy or nonimmediacy behaviors by such factors as physical proximity, formality of dress, and

facial expression through verbal or nonverbal means to enhance closeness to and interaction between individuals (Weiner & Mehrabian, 1968).

In terms of the level of social presence that a communication media offers, this depends on the intimacy and immediacy of the systems or channels utilized for instruction (Dillon, 1996). *Immediate* systems (e.g., TV and video-based communication technologies) refer to systems that the participants perceive to be responsive and associated with more interaction while *intimate* systems (e.g., text-based computer communication technologies) are those perceived as shared environment that fosters closeness or bond with other participants (Dillon, 1996).

Short et al. (1976) hypothesized that communications media vary in the degree of social presence and depending on the information transmitted such as physical distance, eye contact, smiling, and posture, the social presence of the communications medium contributes to the level of intimacy and immediacy (Gunawardena & Zittle, 1997). Therefore, television rather than an audio only communication medium, makes for the potential of greater intimacy and immediacy because of its ability to convey

nonverbal cues such as eye contact, facial expression, gestures, and smiling (Short, et al., 1976).

To examine the hypothesis that communications media vary in their degree of social presence, Gunawardena & Zittle (1997) investigated the effectiveness of social presence as a predictor of overall learner satisfaction in a computer conference environment. They defined social presence as “the degree to which a person is perceived as ‘real’ in mediated communication” (p. 8.), and designed the study to “measure computer mediated communication (CMC) based on the ‘immediacy’ aspect of social presence” (p. 11) as defined by Short, Williams, & Christie (1976). They found that social presence is a predictor of student satisfaction within a computer mediated conferencing environment despite the lack of nonverbal communication cues in CMC environment compared to face-to-face.

In a distance education context, Hackman & Walker (1990) found that social presence contributes to student satisfaction and learning in an interactive TV classroom. While in traditional face-to-face classrooms, Kearney, Plax, & Wendt-Wasco, (1985); Gorham, (1988); and Christophel, (1990) found that the concept of social

presence is also a good predictor of student affective learning across varied course content.

Although the research on social presence in distance education is limited, a common theme found in the conclusions of the above studies indicate that social presence impacts the way a communication medium contributes to the potential level of intimacy and immediacy in distance education and face-to-face formats (Gunawardena & Zittle,1997).

Perhaps the most important outcome of these few studies is that social presence in a distance education environment is related to the level of intimacy and immediacy that the communication media provides. According to Dillon (1996), “there are elements in all communication media that can be used to recover the social presence that distance threatens” (p. 8). Thus, it stands to reason that technology utilized for distance education may not necessarily prevent students from having as high levels of intimacy and immediacy, and an overall good educational experience (e.g., student-teacher interaction, student-student interaction, self-directed learning, motivation, knowledge gain, etc.).

This study will examine the same instructors in both a traditional and distance classroom format to examine whether perceived immediacy will be lower in the distance condition.

Teacher Immediacy

Immediacy refers to behaviors which enhance closeness to others by reducing the physical or psychological distance between people (Andersen, 1978; Mehrabian 1969, 1971). Immediate teachers are those who communicate closeness, warmth, and overall positive affect towards their students (Gorham, 1988). Teachers who are highly immediate tend to use consistent eye contact, movement, vocal variety, gestures, humor and personalized examples during class whereas teachers with low immediacy tend to read from notes, stand behind a podium, use monotone voices, few gestures, little humor, and abstract examples in their classroom lectures (Andersen, Andersen, & Jensen, 1979). Furthermore, immediacy stimulates psychological arousal on the part of students. In conditions of high immediacy, Titsworth (2001), notes that “students have more psychological arousal and consequently higher affect toward a class, subject matter, or the instructor” (p. 170). Thus,

immediacy is important for instructors in distance education because it enhances closeness that can bridge the distance between students and I-TV instructors. Students need to feel the closeness and warmth that their instructor communicates through mediated technology and channels of communication to the distant sites in order to feel part of the classroom learning experience (Murphy & Farr, 1993).

Prior studies have found the effects of teacher immediacy in traditional face-to-face classrooms: teacher immediacy is a good predictor of motivating students to study and in turn, leads to students' cognitive, affective and behavioral learning (e.g., Christensen & Menzel, 1998; Christophel, 1990; Gorham, 1988; Gorham & Zakahi, 1990; Hess & Smythe, 2001; Rodriguez, Plax & Kearney, 1996), that teacher immediacy positively affects students' perceptions of teacher credibility (e.g., Johnson & Miller, 2002; Thweatt & McCroskey, 1998; Todd, Tillson, Cox, & Malinauskas, 2000), and that teachers' verbal and nonverbal immediacy are effective instructional strategy that enhances student cognitive and affective learning (e.g., Titsworth, 2001; Witt & Wheeless, 2001).

In instructional contexts, Witt and Wheeless (2001) note that "teachers' immediacy cues are more powerful than

nonverbal cues in influencing cognitive learning” (p. 340). Titsworth (2001) found positive correlations between students’ perceived teacher immediacy and their affect toward the instructor and classroom instruction.

In the distance education classroom, Hackman and Walkman’s (1990) study provides evidence that teacher immediacy contributes to student satisfaction and learning in an interactive television classroom. As previously reported “instructors who employ immediacy strategies to increase perceived social presence are likely to enhance both student learning and satisfaction in both video conferencing classes” (Murphy & Farr, 1993, p. 3) and [distance classrooms]. Gunawardena and McIsaac (2003) note that “video teleconferencing can create a ‘social presence’ that closely approximates face-to-face interaction because of the ability of video teleconferencing to show images of people” (p. 368). Thus, I-TV may use the same transmission channels as a video teleconference to transmit programs to a distant classroom but because of the difference in application, the transmission can be longer and distinguished from video teleconferencing application (Gunawardena & McIssac, 2003).

However, these studies do not compare the relationship of teacher immediacy and teacher credibility in a distance education interactive TV environment versus a face-to-face environment. As technology has changed, today's I-TV courses allow students and professors to see and hear each other through real time audio and video, even when students are at multiple sites and/or hundreds of miles away (Anderson & Kent, 2003).

As immediacy is positively linked to credibility in studies of traditional classrooms (e.g., Beatty & Behnke, 1980; Frymier & Thompson, 1992; Johnson & Miller, 2002; Thweatt & McCroskey, 1998; Todd, Tillson, Cox, & Malinauskas, 2000), does this relationship generalize to the distance classroom? If the technology limits the amount of immediacy that a teacher can communicate in a distance setting, then does this mean that teacher credibility will be lower as well? Or, if students have expectations of lower immediacy in the distance setting, do they take this into account and not lower their perceptions of teacher credibility? If teacher immediacy and credibility are positively related in a face-to-face setting but not related in a distance setting, then this would suggest that classroom format is a moderator of the relationship between

the two variables. This study will provide data to examine this possibility.

In a distance education setting that provides some form of audio-visual access to the teacher, teacher immediacy can be communicated through smiling, relaxed body position, addressing students by name, movement, positive use of gestures, eye contact,[1] (see Endnote 1), vocal expression, and invitations for students to telephone or e-mail. Although social presence or the ability to approximate the characteristics of face-to-face interaction is limited in mediated instruction, it is likely that I-TV instructors who employ immediacy strategies to increase perceived social presence will enhance both student learning and satisfaction in distance education classes (Murphy & Farr, 1993).

Freitas, Myers, and Avtgis's (1998) study of seventy-three undergraduate students enrolled in a second year, associate degree, nursing course predicted that students enrolled in the conventional classroom would perceive a higher rate of instructor verbal and nonverbal immediacy than students in the distributed learning classroom. Participants for the study completed a 17-item Verbal Immediacy Behaviors scale by Gorham (1988), a 14-item

Nonverbal Immediacy Behaviors instrument by Richmond et al., (1987) and using a 5-point Likert-type scale from never (0) to often (4), the respondents were asked to report perceptions of their instructor's use of both verbal and nonverbal immediacy behaviors. They found no significant difference in instructor verbal immediacy ($t(71) = .37$, $p > .05$. between conventional classroom students ($m = 46.71$, $sd = 8.70$) and distributed classroom students ($m = 46.71$, $sd = 7.76$). However, a significant difference was found in instructor nonverbal immediacy ($t(71) = 6.31$, $p = < .001$. between students in conventional classroom ($m = 36.92$, $sd = 5.63$) than in distributed learning classrooms ($m = 30.63$, $sd = 5.49$). Freitas et al, note that "because distributed learning classroom students are aware that face-to-face interaction will not take place, any expectations placed on instructor nonverbal immediacy may be lower than the expectations of conventional classroom students" (p. 370). They argued that perhaps because "students in the distributed classroom expected lower amounts of teacher immediacy, they rated their instructor as being less nonverbally immediate" (p. 370).

Witt and Wheeless (1999) study explored a possible relationship between students' expectations for teacher nonverbal immediacy and their enrollment in a distance learning telecourse. Before classes began, questionnaires were completed by community college students (N =182) enrolled in a telecourse or classroom course, indicating expectancies for teacher nonverbal immediacy during the upcoming semester and distant students expectations of their teachers. The hypothesis, which predicted lower expectancies of teacher nonverbal immediacy among currently enrolled distant students than among currently enrolled traditional classroom students was supported. Student expectations for teacher nonverbal immediacy were lower among students enrolled in distance learning (*m* = 41.77, n = 98) telecourse than among students enrolled in traditional classroom courses (*m* = 49.68, n = 84). The different in site (telecourse or on-site classroom) accounted for 10.6% of the variance in expectancies of teacher nonverbal immediacy.

The study further found that the expectancies for teacher nonverbal immediacy were lower among students who had never enrolled in distance learning (*m* = 35.48, n = 141) telecourse than among those who had distance learning

experience (*m* = 40.95, n = 41). The authors note that “further research is needed to clarify the relationship between nonverbal expectancies and student enrollment in distance learning and that perhaps nonverbal expectancies are related to which distance courses students select” (p. 153).

Carrell and Menzel (2001) compared the variations in learning, motivation, and perceived immediacy between live and distance education classrooms. One-hundred and twenty lower division and forty-nine upper division undergraduate students were randomly assigned to three experimental educational setting: a live classroom, a video classroom, and an audio with PowerPoint display classroom.

The lower division students viewed a brief lecture presented in the live classroom and simulcast to the other two settings. The upper division students viewed a 45 minute lecture presented in the live classroom and simulcast to the other two settings. The impact of the settings on participant learning, motivation, and perceived teacher immediacy was assessed in both studies.

Perceived instructor immediacy was significantly found to be higher for live setting. For the long lecture, motivation, perceived learning, affect toward the

instructor, and willingness to enroll with instructor all varied significantly and were highest in the live setting. The actual short-term learning varied significantly and was highest for the PowerPoint classroom.

Student cognitive style was assessed, but the researchers found no significant variation based on this variable. Anderson's (1979) Generalized Immediacy Scale was used to measure instructor immediacy behaviors and immediacy was found to be highest for the live lecture.

Although the results of the aforementioned studies suggest significant differences in the perceptions of lower expectations of teacher nonverbal immediacy for distance students compared to face-to-face students, the methodologies used for these studies are different compared to the present study. Freitas et al (1998) compared undergraduate conventional (i.e., face-to-face) classroom with distributed (i.e., computer-mediated communication) classroom whereas the present study will compare graduate students in face-to-face and I-TV distance education classrooms. Similarly, Carrell and Menzel (2001) compared undergraduate students enrolled in three experimental educational settings: a live classroom, a video classroom, and an audio with PowerPoint display classroom which is

different from the present study. Therefore, with the new technologies available in distance education, is perceived immediacy still lower in these settings? This study will examine this question.

Teacher Credibility

Teacher credibility refers to students' attitudes toward or evaluation of their teachers (McCroskey & Young, 1981). Credibility has been defined as composed of the subcomponents of perceived believability, trustworthiness, reliability, and expertise of the source or presenter Hovland, Janis, & Kelly, 1953; Self, 1988b). Teacher credibility evolved from the concept of source credibility as a multidimensional attitude of the source [teacher] based on their competence, character, sociability, extroversion, and composure (McCroskey, Holdridge, & Toomb, 1974).

In distance education, the credibility of the teacher is important because the students have to believe that the information and knowledge that they are receiving from their teacher is valid and reliable (Beatty & Behnke, 1980). According to Beatty and Behnke, "students simply do not accept information from sources lacking credibility" (p. 56). Thus, students want to believe that their

instructor is competent, knowledgeable of the subject matter, honest, trustworthy, and has expertise to teach the courses.

Teacher credibility can also vary based on the characteristics of the presenter, the presenting organization or medium, the information or message offered, and the circumstances under which the message is being perceived (Self, 1988b). Technology, whether mediated (e.g., interactive video) or unmediated (e.g., traditional chalkboard) shapes reality and impacts how one perceives or processes the messages or information received (Self, 1988b). Technology has the possibility of influencing credibility, as certain channels carry certain connotations. For example, print sources in scholastic settings are often accorded greater respect than, say, videotape sources (Dede, 1990).

Similarly, the concept of credibility has been studied since 1930s and applied to other areas of media such as television, radio and newspapers (Salwen & Stacks, 1996). These studies have continued to the present and were inspired by a desire to find out which media were used by most individuals to get their news and which medium was most trusted. In order words, which media do people get

most of their information from and how does the information they receive from these media sources influence their opinions? To study the credibility of mass communication messages, Hovland, Janis, and Kelly (1953) and Hovland and Weiss (1951-1952) examined how individuals received such messages from high credibility sources. They found that "high credibility sources changed attitudes more than low credibility sources, even though the information was learned equally well from both source types" (p. 637).

Following the work of Hovland et al., (1953), a broad interest in the credibility of media sources developed. The research interest in the credibility of media centered on the following areas: source (institutional media, individual speakers, and organization as sources) characteristics, message characteristics, and audience characteristics (Salwen & Stacks, 1996). For example, Baxter and Bittner's (1974) study of media or source characteristics found that "TV was more credible than other media among high school and college students of the 'television generation' regardless of differences in sex and educational level" (p. 519).

One important aspect of these media credibility studies is that the studies developed different dimensions

of credibility (Salwen & Stacks, 1996). For example, McCroskey, (1966) and McCroskey and Jensen (1975) examined the different potential dimensions of credibility. McCroskey (1966) used a five-point Likert-type format (strongly agree, agree, neutral, disagree, strongly disagree) (McCroskey, 1966), and a 12 bipolar adjective semantic differential statements. Both the Likert-type format and 12 bipolar semantic differential instruments revealed two dimensions of credibility (authoritativeness and character). McCroskey & Jensen (1975) used a twenty-five bipolar adjective semantic differential statements to measure credibility. The instrument revealed three more dimensions of credibility (sociability, composure, and extroversion). These dimensions of credibility, including perceived competence (or expertise) and trustworthiness, have been commonly recognized to contribute to perceptions of source credibility (McCroskey & Jensen, 1975). This study will apply these five dimension of credibility (competence, sociability, extroversion, character, and composure) to examine perceived teacher credibility for face-to-face and distance education students.

Thweatt & McCroskey (1998) examined the effect of teacher immediacy and misbehavior on student perceptions of

teacher competence, trustworthiness and goodwill. They predicted that (1) Teachers who are more immediate will be perceived as more credible than teachers who are less immediate and (2) that teachers who engage in misbehaviors will be perceived as less credible than teachers who do not engage in misbehaviors. Participants were students enrolled in undergraduate communication classes. The respondents were exposed to four descriptive scenarios in which teacher immediacy was manipulated. Two levels of immediacy were created by varying the proportion of behaviors that were immediate. The students' perceptions of their teachers' credibility was measured using an 18-item scale developed by Teven and McCroskey (1997). Each dimension was measured with responses to six 7-point bipolar scales. They found (a) positive effects for teacher immediacy on all dimensions (competence, trustworthiness and caring) of credibility and (b) strong negative effects for teacher misbehavior on all three dimensions (competence, trustworthiness, and caring) of credibility.

Jayasinghe, Morrison, and Ross (1997) found that "an eye-level camera angle and multiple television monitors in a distance learning classroom positively influence student perceptions of an instructor's immediacy, credibility, and

interactions” (p. 15). Thus, the question is does this level of technology engender similar levels of immediacy as in a face-to-face environment? As Thweatt and McCroskey (1998) found that in a traditional classroom, “teachers who are more immediate are perceived as more credible than teachers who are less immediate” (p. 350). Would potentially lower immediacy lead to less perceived teacher credibility in the distance classroom? Examining both the traditional and distance classroom together will allow comparisons between the two classroom formats.

Lower perceived immediacy and credibility levels in distance classroom might help explain why some view distance education as lower status. However, if immediacy is not related to credibility in distance education classrooms, then the concern that distance education is not as beneficial because of the lack of face-to-face contact with the instructor is potentially lessened. Thus, the relationship between teacher immediacy and teacher credibility is compared for face-to-face and distance classrooms in this study.

Problem Statement

Comparing the achievement of distance learners with learners in face-to-face classes has yielded no significant

difference in student learning (Figueroa, 1992; Haynes & Dillon, 1992; Moore & Kearsley, 1996). Yet, some skepticism continues to plague distance education, because of those who view distance education as a “second-class status, inferior to traditional face-to-face instruction” (Souder, 1993, p. 45) and obtained through the “back door” of traditional face-to-face education (Wedemeyer, 1981), despite the increasing institutional adoption of distance education as a viable educational alternative. This skepticism has continued to generate interest in re-examining some of the issues dealing with the impact of distance education on teaching effectiveness and learning outcomes as compared to face-to-face instruction (Moore & Kearsley, 1996). Since apparently there is no evidence of differences in student learning and achievement, we need to start looking at other variables to have a better understanding of whether the skepticism comparing distance education to face-to-face environments is warranted.

Two variables that would be a good starting point are immediacy and credibility because both variables play important roles in classroom student-teacher dynamics. For example, immediacy has been found to positively influence student affect toward teacher communication, course

content, the course in general, and the course instructor (Sanders & Wiseman, 1990). Thus, one problem this study addresses is whether student perceptions of teacher immediacy impact teacher credibility for students who attend courses in a face-to-face setting and students who attend the same courses in a distance education interactive television setting.

This study predicts that teacher immediacy will be lower in a distance education context than in a face-to-face I-TV context. Therefore, it predicts teacher credibility will be lower for the students in distance education I-TV contexts. This would replicate the findings of a positive relationship between immediacy and credibility in the traditional classroom. This suggests potential problems for distance instructors as teacher credibility is a necessary prerequisite for effective instruction (Russ, Simmonds, & Hunt, 2002).

Rationale for Study

Given the growth and advances of educational technologies, the access, and opportunities these technologies provides, it is vital to understand the impact of these technologies and the extent to which these technologies can enhance immediacy behaviors despite the

geographical distance between instructors and their students. Witt and Wheeless (1999) note that distance educators have sought to reduce the geographical and psychological distance by producing programs that utilize interactive communication technology, participative instructional design, and highly immediate teacher communication behaviors for distance education.

Yet, despite differing delivery systems (Hackman & Walker, 1990), and communication technologies (Guerrero & Miller, 1998; Murphy & Farr, 1993), that reduce physical and psychological distances, enhance immediacy and social presence with distance students, if distance education is limited in the amount of teacher immediacy, then perceived teacher credibility may also be limited (Thweatt & McCroskey, 1998). Whether a positive relationship between credibility and immediacy (if one changes, the other change in the same direction) exists also in distance education will be explored in this study.

The rationale for examining nonverbal and verbal immediacy in this study is because immediacy behaviors enhance closeness to others by reducing the physical or psychological distance between instructors and their distant student (Andersen, 1978; Mehrabian, 1968, 1971). In

addition, prior research has found differences for theses types of immediacy in regards to distance education. The perceptions of immediacy or physical and psychological closeness are affected not only by a person's nonverbal behaviors but also by their verbal behaviors (Rubin, Palmgreen & Sypher, 1994). Thus, research on immediacy in the classroom should assess both verbal and nonverbal immediacy behaviors (Rubin et al., 1994).

Research Hypotheses

For this study, distance education is defined as those instructional efforts in which there is separation between student and teacher in space and/or time but teacher and student are linked in several geographical locations via technology that allows for interaction (Cartwright, 1994; Keegan, 1986). The distance education students and instructors in this study were separated by distance but were linked simultaneously through mediated communication systems and networks that allowed for synchronous interactions (Cartwright, 1994; Moore & Kearsley, 1996).

The research on teacher immediacy in face-to-face classrooms has found that instructor use of immediacy (verbal or nonverbal) behaviors has a positive effect on perceived students' affective learning (e.g., Andersen,

1979; Christensen & Menzel, 1998; Christophel, 1990; Rodriguez, Plax, & Kearney, 1996; Sanders & Wiseman, 1990; Witt & Wheeless, 2001), behavioral learning (e.g., Christensen & Menzel, 1998; Comstock, Rowell, Bowers, & Waite, 1995; Sanders & Wiseman, 1990), and perceived cognitive learning (e.g., Comstock, Rowell, Bowers, & Waite, 1995; Gorham, 1988; Gorham & Zakahi, 1990; Hess & Smythe, 2001; Sanders & Wiseman, 1990; Witt & Wheeless, 2001). Additionally, instructor immediacy has been associated with perceived teacher evaluation (e.g., McCroskey, Richmond, Sallinen, Fayer, & Barraclough, 1995; Teven & McCroskey, 1997), and perceived student ratings of instruction (e.g., Moore, Masterson, Christophel, & Shea, 1996).

Prior studies in distance education have predicted and found lower expectations of teacher nonverbal immediacy behaviors among distance students than among traditional classroom students (e.g., Witt & Wheeless, 1999), lower expectations of instructor immediacy in conventional face-to-face and computer-mediated learning classrooms (i.e., the use of computers in distance learning classroom) (e.g., Freitas, Myers, & Avtgis, 1998), and immediacy behaviors between a live classroom, a video classroom, and an audio

with PowerPoint display classroom (e.g., Carrell and Menzel (2001).

What these research studies have shown is that when teachers are immediate with their students in face-to-face contexts, their immediacy behaviors results in numerous positive outcomes (Barringer & McCroskey, 2000). However, within the context of distance education, distant students may have lower perceptions of teacher immediacy behaviors than students in the traditional classroom because instructors and students are separated geographically and communicate via a medium that limits nonverbal communication behaviors (Guerrero & Miller, 1998). However, Dede (1990), notes that teacher immediacy may be increased from an initial lower level to higher levels of immediacy due to the bandwidth (richness of interpersonal information) of the medium or communication channels. For example, a channel such as interactive television (I-TV) can increase the bandwidth because it shows more communicative cues. I-TV opens up opportunities for immediate interaction between students and teacher via the two-way audio/video broadcast (Fulford & Zhang, 1993; Moore, 1993; Ritchie & Newby, 1989).Perhaps, distance teachers can seek to communicate warmth, enthusiasm,

composure, eye contact, and facial expressions in I-TV classrooms through the television camera because cameras often zoom in on the face of the instructor for facial expressions and eye contact of the instructor to the distance students (Guerrero & Miller, 1998). However, do these new technologies allow the immediacy levels in distance education classroom to obtain the same level of immediacy as in the face-to-face context? As the physical presence of the instructor is removed in distance, it seems that teacher immediacy may be adversely affected even in the I-TV context, hence, Hypothesis 1:

H1a: Perceived teacher nonverbal immediacy will be lower in the distance education classroom than in the face-to-face condition.

H1b: Perceived teacher verbal immediacy will be lower in the distance education classroom than in the face-to-face condition.

The research on the impact of teacher immediacy on teacher credibility suggests that it is important and significant for teachers to maintain high immediacy in order to protect their credibility in the classroom (Thweatt & McCroskey, 1998). The relationship between immediacy and teacher credibility suggest a positive

relationship exist between credibility and student learning in a traditional classroom (Beatty & Zahn, 1990).

Credibility is multidimensional, consisting of competence, sociability, extroversion, character, and composure (McCroskey, Holdridge & Toomb, 1974). Each of the dimensions of credibility has been used by researchers to examine perceived nonverbal and verbal behaviors in relation to teacher credibility in face-to-face classrooms. (e.g., Beatty & Behnke, 1980; Frymier & Thompson, 1992; Guerreo & Miller, 1998), perceived teacher immediacy and misbehaviors on teacher credibility (e.g., Thweatt & McCroskey, 1998), perceived teacher immediacy, credibility, and learning in the U.S. and Kenya (e.g., Johnson & Miller, 2002), and perceived teacher affinity-seeking in relation to perceived teacher credibility (e.g., Frymier & Thompson, 1992).

As previously indicated in this report, prior study by Thweatt and McCroskey (1998) predicted and found that teachers who were more immediate were perceived as more credible than teachers who were less immediate. Immediacy measures had a significant impact on the three dimensions (competence, trustworthiness and caring) of credibility included in the study. Additionally, Frymier and Thompson

(1992) predicted and found that affinity seeking behaviors were positively and significantly related to students' perception of teacher competence and character in face-to-face classroom.

In the present study, all five dimensions credibility will be examined: competence, sociability, extroversion, character, and composure (McCroskey, Holdridge & Toomb, 1974) as very few previous studies have examined all five dimensions. There is no evidence from prior research that immediacy would have a different impact on one dimension of credibility than another, hence, Hypothesis 2 makes the same prediction for all five dimensions. If perceived teacher immediacy and credibility are positively related, then lower perceived immediacy in the distance setting should relate to lower perceived credibility as well:

H2a: Perceived teacher competence should be lower in the distance education classroom compared to the traditional face-to-face classroom.

H2b: Perceived teacher sociability should be lower in the distance education classroom compared to the traditional face-to-face classroom.

H2c: Perceived teacher extroversion should be lower in the distance education classroom compared to the

traditional face-to-face classroom.

H2d: Perceived teacher character should be lower in the distance education classroom compared to the traditional face-to-face classroom.

H2e: Perceived teacher composure should be lower in the distance education classroom compared to the traditional face-to-face classroom.

Research Question

In face-to-face classroom setting, the relationship between immediacy and teacher credibility indicate a positive relationship exist between credibility and student learning in the classroom (e.g., Beatty & Zahn, 1990), as well as between teacher credibility, verbal and nonverbal immediacy (e.g., Thweatt & McCroskey, 1998; Johnson & Miller, 2002).

Johnson and Miller (2002) examined immediacy, credibility and learning between students in the U.S. and Kenya. They found “significant positive relationships between verbal, nonverbal immediacy, credibility and cognitive learning among the U.S. and Kenyan students in the study” (p. 288). The findings of the study suggests that “highly immediate teachers are perceived as being more effective and credible by their students” (p. 289).

One of the most consistent and important findings in the literature is that teacher immediacy (verbal and nonverbal) has positive effects on perceived student affective learning (e.g., Andersen, 1979; Christensen & Menzel, 1998; Comstock, Rowell, & Bowers, 1995; Gorham, 1988; McCroskey, Richmond, Sallimen, Fayer, & Barraclough, 1995; Moore, Masterson, Christophel, & Shea, 1996; Sanders & Wise, 1990; Witt & Wheeless, 2001).

However, much of the research in distance education has shown a lack of difference between traditional and distance setting in regards to student learning (Fulford & Zhang, 1993; Haynes & Dillon, 1992). How can this be if distance education is expected to have such factors as lower teacher immediacy and credibility? Are distance classrooms doomed to lower credibility if they have lower immediacy? One possibility might be that immediacy and credibility are not linked in the same way in a distance education setting as in a traditional face-to-face classroom setting. Maybe instructors can have high credibility in the classroom even if they do not have high immediacy. Could immediacy not be as important to credibility in the distance education setting?

To examine this, one can determine whether classroom setting is a moderator for the relationship between immediacy and credibility. In other words, is there a different relationship between immediacy and credibility in the distance setting than in the traditional face-to-face setting? Perhaps the two variables are not significantly related in the distance setting but are positively related in the traditional setting. This might explain why distance education can be just as effective even if teacher immediacy is not as high. Such a finding would argue against a bias against distance education. Perhaps this bias and skepticism is due to the belief of lower immediacy expectations of distance education settings leading to lower teacher credibility and student learning. Therefore, if we look at the classroom setting to determine if it is a moderating factor between immediacy and credibility, perhaps then we can determine if the bias and skepticism is warranted. Hence, RQ1:

RQ1: Is classroom setting a moderator for the relationship between teacher immediacy and teacher credibility?

Next, this report will examine prior literature related to distance education, immediacy and credibility. Then it

will outline the methods that will be used to answer the hypotheses and research question posited in this study. After revealing the results, this report will discuss the findings, identify the study’s limitations, and draw implications for future research.

II. LITERATURE REVIEW

The fundamental concept of distance education is that students and teachers are separated. Moore and Kearsley (1996) point out that this can include separation in time as well as distance and it is in contrast to the more familiar traditional face-to-face instruction.

In order to explore the factors of teacher immediacy behaviors that impact teacher credibility in distance education, this report will discuss the historical, theoretical, and technological perspectives supporting the practice of distance education. In addition, this report will review research on teacher immediacy (verbal and nonverbal), teacher credibility and the dimensions of credibility examined in this study. These dimensions include: competence, sociability, extroversion, character, and composure.

Distance Education: Historical Perspectives

The origin and evolution of contemporary distance education can be traced back to written correspondence education, the initial and primary purpose of which was to provide instruction to learners who were unable to attend traditional face-to-face classes (Moore &

Thompson, 1997). Dillon (1996) notes that “correspondence study evolved from the early extension movement of early twentieth century populism whose purpose was to extend education to all people” (p. 7). According to Holmberg (1995), “teaching and learning by correspondence is the origin of what is today called distance education” (p.

Correspondence education as we know it has been in existence for over 150 years. While formal correspondence programs were initiated in Europe during the latter half of the nineteenth century, the most significant early developments in correspondence education took place in the United States (Young, 1984). Young notes that by 1910, “there were more than 200 correspondence schools in the United States” (p. 13).

According to Garrison (1989) “much of the growth in correspondence education around the end of the nineteenth century was attributed to the rapid transition to an urban society with the only opportunity for many to improve their socioeconomic condition” (p. 52). William Rainey Harper, one of the founders of correspondence education, initiated the correspondence school of Hebrew in 1881, and shortly thereafter, helped organize a similar correspondence program at Chautauqua University in 1892. As president of

the University in 1892, Harper established the first university correspondence program in the Extension Division (Garrison, 1989).

The term *correspondence education* typically denotes a wide collection of formats featuring teaching through writing, particularly through instructional texts and correspondence between students and tutors (Holmberg, 1995). Both the terms *home study* and *independent study* have been used for correspondence education. Harry, John, and Keegan (1993) note that “the most important association attached to these competing terms is the teacher who instructs by writing and the student who learns by reading” (p. 12).

The term *home study* indicates that the teaching and learning does not take place in the class or lecture room but at home (Harry et al; 1993). It rather suggests pleasant feelings connected to one’s home privacy, familiarity, and coziness opposed to maybe unpleasant experiences at schools or colleges. Thus, from the perspective of today’s *home study* provider or user, *home study* continues to be utilized because of its attractive cost savings and flexibility as a tool for meeting public demand (Garrison, 1989).

Another term closely related to correspondence study is *independent study*. Garrison (1989) asserts that historically the guiding notion of *independent study* was that nobody should be denied the opportunity to learn because he or she is poor, geographically isolated, socially disadvantaged, or unable to relate to the institution's environment for learning. Harry, et al. (1993) note that with *independent study* "it is the student who determines the when, where and how of his or her learning and assumes more responsibility for their own learning than is possible in face-to-face situations" (p. 15). Studying in this way, *independent study* thus attempts to develop the student's ability to conduct self-directed learning, no longer forced to follow the lead of a teacher nor subjected to the conformity pressure of the learning or peer group (Harry et al., 1993).

In a sense, all traditional classes employ some *home study* and *independent study* elements when they use home readings/books and assignments. Traditional correspondence study likewise partakes of these elements, but misses the crucial interpersonal communication with teachers.

The earliest format of correspondence study was mail

(Moore & Kearsley, 1996). This method of educational delivery was made possible by the railway system which guaranteed quick and reliable delivery (Harry, et al. 1993). As Garrison (1989) notes, “it is the mail system that makes possible the transmission of information in correspondence education” (p. 53). This method of delivery assures the learner access to printed materials of instruction.

As the scope of correspondence study increased and better provided the learner with independence, convenience and individualization of instruction, “new innovations of communication technologies such as TV, radio, and satellite broadcasts began to provide support for the educational transactions of correspondence study” (Garrison, 1989, p. 53). Because TV and radio could bring education to many people at once regardless of the distance, time and place, correspondence study largely shifted from the “one-to-one” pattern of mail to the “one-to-many” patterns of communication offered by broadcast and satellite technologies (Dillon, 1996). Thus, as communication shifted from print to radio and television, the ideals of adult education shifted from humanistic ideals to the ideas of cognition and industrialization” (Dillon, 1996).

The transition from an industrial society to an information society plays a large part in the tremendous growth distance education experienced in the 1970s and 1980s (Garrison, 1989). Garrison believes that this growth is due to the inherent characteristics of correspondence study (i.e., the independence provided the learner, the convenience, and the individualization of the instruction). “Independence,” according to Garrison, “gives students some control over the pace of study while convenience refers to the opportunity for students to study wherever they wish” (p. 53). Thus, the concept of independence and convenience provides the basic foundation that is evident today in the practice and application of distance education for the student learner.

Distance Education Theory and Practice

The changing and diverse environment in which distance education is practiced has prohibited the development of a single theory upon which to base practice and research. According to Moore and Kearsley (1996), “a theory is a representation of everything that we know about something, a common framework, a common perspective, and a common vocabulary that helps us ask questions and make sense of problems” (p. 197). Holmberg (1986) notes that the

explanation for theoretical considerations in distance education can be developed to tell us what in distance education is “to be expected under what conditions and circumstances while paving the way for corroborated practical methodological applications” (p. 3).

In distance education, there is a need to describe and define the field, to discriminate between the various components of the field, and to identify the critical elements of the various forms of learning and teaching (Moore, 1994). However, according to Keegan (1996), the lack of an accepted theory of distance education has weakened distance education. He notes that “there was no systematic theory of distance education which might make it possible to classify practitioners’ individual experiences in relation to their essence” (p. 55). He argues that a firmly based theory of distance education will be one that “provides the touchstone against which decisions of political, financial, social, and educational can be made with confidence” (p. 55). Although institutionalized distance education has existed for over a hundred years, it has only been during recent years that the practice of distance teaching has commenced relying on theory.

Over the last two decades, several theoretical

frameworks have been proposed which seek to encompass the whole of activity in distance education. The theoretical positions and frameworks supporting the practice and field of distance education are classified into three categories: (a) Theories of Industrialization of Teaching; (b) Theories of Autonomy and Independence; and (c) Theories of Interaction and Communication.

Theory of Industrialization of Teaching

Otto Peters' theory of industrialization of teaching evolved in the 1960s when he contended that distance education is a product of industrial society (Peters, 1998). He presented a comparison between distance teaching and the industrial production of goods under these categories for his analysis of distance education: rationalization; division of labor; mechanization; assembly line; mass production; preparatory work; formalization; standardization; functional change; objectification; concentration; and centralization.

Rationalization. Refers to a characteristic of the distance teaching when knowledge and skills of a teacher are transmitted to unlimited number of students by a distance education course of constant quality.

Division of labor. The division of a task into simpler

components or subtasks, where conveying information, counseling, assessment and evaluation of performance are done by different individuals.

Mechanization. The use of machines and/or the use of communication tools such as faxes, duplicating and electronic data processing tools such as scanners, personal data assistants (PDAs), etc., in a distance education work process and environment.

Assembly line. A method of work where programs and materials for both teacher and student are not the product of an individual, rather, the instructional materials, are designed, printed, stored, distributed and by specialists.

Mass production. The production of goods in large quantities in distance education because demand outstrips supply at colleges and universities, and the trend is toward large-scale operations not consistent with traditional forms of academic teaching, thus mass production of distance education courses can enhance quality.

Preparatory work. As in industry, distance teaching is characterized by extensive planning by senior specialist in various specialized fields and staff, and prior financial investment – the success of which is linked to preparation

that is different from conventional teaching.

Formalization. The phases and process in distance education, where all the meetings from student, to teaching, to the academics, must be determined exactly.

Standardization. The limitation of manufacturer is restricted to the number of types of one product or products but in distance education, the format, organizational support, and academic content are standardized.

Functional change. The change of the role or job of the worker in the production process while in distance education, the functional role of teacher is split into provider of knowledge (i.e., distance unit author), evaluator of knowledge and progress (i.e., course maker or tutor), and counselor (i.e., subject program advisor).

Objectification. The loss, in a productive process, of the subjective element which used to determine work to a considerable degree but in distance education, only in the written communication with the distance student or in consultation, or brief face-to-face event on campus has then teacher some scope for subjectively determined variants in teaching method.

Concentration and *Centralization*. Because of the large

amounts of capital required for mass production and division of labor, large institutions have the tendency to monopolization within a state or national educational provision (Keegan, 1996).

Theories of Autonomy and Independence

Autonomy and Distance. Moore's contributions to a theory of distance education can be traced back to the early 1970s. The focus was on all forms of deliberate, planned, and structured learning and teaching that are carried on outside the school environment (Moore, 1975). Moore defines the school environment "as the classroom, lecture or seminar, the setting in which the events of teaching are contemporaneous and co-terminous with the events of learning" (p. 67). Distance education, argues Moore, is an "educational system in which the learner is autonomous and separated from the teacher by space and time so that communication is by a non-human medium ... and that the distance system has three subsystems: a learner, a teacher and a method of communication" (p. 67).

Moore and Kearsley (1996) note that distance education is composed of two elements. The first element is the provision for a two-way communication, a dialog interplaying "words, actions, and ideas and any other

interactions between teacher and learner when one gives instruction and the other responds" (Moore & Kearsley, 1996, p. 201). The full-motion two-way compressed video, audio, and data I-TV delivery system used for this study provides a two-way communication which provides interaction between the I-TV faculty and the graduate students at the seven distant sites surveyed for this study. This interplay of words, actions, and ideas are communicated during class lectures via the audio (push-to-talk microphones) in both on-campus face-to-face and distant site classrooms.

The second element is the extent to which a program is responsive to the needs of the individual learner. This element is characterized as the structure of the distance education course which consists of "learning objectives, content themes, information presentations, case studies, pictorial and other illustrations, exercises, projects, and tests" (Moore & Kearsley, 1996).

However, in distance education, some programs are very structured, while others are very responsive to the needs and goals of the individual student (e.g., a recorded TV program, not only permits no dialog but is highly structured compared to many teleconference courses, though structured, allow students to follow several different

paths through the content). This is evident in the current practice of distance education programs and institutions in which the institution and I-TV instructors are able to provide the appropriate structure of learning materials, and the appropriate quantity and quality of dialog between teacher and learner while taking into account the extent of the learner's autonomy.

The most important evolution in distance education has been the development of interactive telecommunications media such as interactive computer networks and audio, audio graphic, and video networks, which may be local, regional, national, and international and are linked by cable, microwave and satellite technologies. These media provide less structured programs than the recorded or print media. (i.e., computer conferencing or teleconference media allow for a new form of dialog that can occur between inter-learners and other learners, alone or in groups, with or without the real-time presence of an instructor). By audio/video conference, and computer conference, groups can learn through interaction with other groups and within groups (Keegan, 1996).

Independent Study. Formulated in the early 1970s by

Wedemeyer (1973, 1977), the essence of distance education was the independence of the student, hence the term “independent study” for distance education at the college and university level. Wedemeyer believes that for the teaching-learning context to succeed, distance education should be reorganized to accommodate physical space and learner freedom in order to achieve a teaching-learning system that must work any place, any time, for one learner or many. Wedmeyer’s conceptualizations of independent study and teacher-learning situations remains current in the context and practice of distance education instruction. Today, many institutions are adopting distance education delivery systems, programs, and courses both in the US and throughout the world.

Theories of interaction and communication

Holmberg’s (1995) contribution to the theory of distance education falls into what he calls “guided didactic conversation” (p. 17). This means a kind of conversation in the form of a two-way communication via written or mediated interaction among students and between students, their instructors, and other supporting personnel (Holmberg, 1995). Since it is a combination of

mass communication and individualization, distance education “requires a degree of maturity in its students, as they carry out the study activity autonomously” (p. 181).

Furthermore, Holmberg contends that because distance education provides an alternative for adults who are gainfully employed and/or have families, it cannot be regarded as a substitute for conventional schooling (Holmberg, 1995).

Technologies of Distance Education

Although the nature of student-teacher communication distinguishes a variety of learning environments, perhaps no form of education is so significantly defined by its choice of communication media as is distance education (Kahle, 1998). Communication technologies have been the principal intermediary between students and instructors, and it has shaped the practice and character of distance education. Due to the rapid growth of technology and the impact it has upon universities, the types of delivery systems have greatly changed (Birnbaum, 2001).

While advances are constantly occurring, merging technologies will be of great importance to distance learning because advanced instructional functionalities

depend on combining the capabilities of computers and communication telecommunications (Dede, 1990). The increased speed of transmission, alternate means of assessment (e.g., student evaluations geared toward distance education) and more interactive modules may help bridge the gap between a live class session and one based in “virtual reality.”

Types of Technology

Effective communication in distance education happens when commonalities, such as language and culture, exists (Birnbaum, 2001). Instructional thoughts or ideas are conveyed in a form to students, such as words, graphics, pictures, or illustrations. Effective student to student interaction occurs when classmates engage each other in discussion regardless of whether they are in the same place (or time). The technology used to achieve communication in distance education has a great deal to do with its effectiveness.

In most educational settings, media is used such as overhead projectors, videotapes, and chalkboards to communicate information between students and teachers. However, this media use is supplemental. In the face-to-face classroom the main instructional content is usually

derived from the unmediated presence of the teacher. In a distance education classroom, a variety of media tools and techniques are essential in order to keep students aware of course content and also to keep them focused. Since the physical presence of the instructor is removed in distance education, the variety of media selected must be broad enough to maintain student interest and address a wide array of learning styles (Birnbaum, 2001).

The Print Media.

Print media is the most commonly used form of classroom technology (Birkerts, 1994). Many skeptics thought that the printed word would disappear as technology developed. However, print media is still the most useful teaching source in the form of textbooks, newspapers, journals, syllabi, tests, and handouts. (Birnbaum, 2001).

In the most traditional of distance education formats, printed materials remain the only method used by the school for instructional delivery and assessment (Picciano, 2001). Picciano notes that one of the effective ways to incorporate printed materials into modern distance education courses is to utilize desktop publishing programs (e.g., Powerpoint, Corel, CD-ROM, etc.) so that graphics, images, maps, and other support data can be included during

instruction. Many of the printed media that incorporate desktop publishing programs can be easily transmitted to distance students through e-mail attachments (Moore & Kearsley, 1996).

Although printed materials remain popular, using them has some drawbacks. Most printed data are non-interactive, depend on the reading levels of students, and are passive and self-directed (Rowntree, 1996). Also, when students lose textbooks and syllabi, the time and cost of replacing them can be prohibitive, and students who request replacement of printed materials must wait to receive them, thus wasting a great deal of time. However, growing electronic access to these materials can make replacement easier and quicker (Birnbaum, 2001).

One-Way Audio Technologies.

Audio technologies are based upon recording instructional material, and a wide range are available. Among these are audio cassettes, which are widely used in distance education because they are convenient and inexpensive (Birnbaum, 2001). In some schools' courses, students are sent audio tapes both as supplements and as primary instruction. Also, students in I-TV distance courses can record the class lectures on the audio cassette

in place of taking notes and use them later in cars, at home, or with earphones during a bus ride or exercise (much as students in face-to-face classrooms do). Some of the weaknesses of audio cassettes include lack of graphics and the need to still utilize printed study guides (Rowntree, 1996). Most audio cassettes are non-interactive, require passive learning, may wear out or break, and when not properly rewound, may crease and become useless (Birnbaum, 2001).

Two-way Audio Technologies.

Synchronous or simultaneous communication is made possible with two-way audio (Picciano, 2001). These media include radio connections, telephone call-ins, and telephone hookups that allow for two-way audio communication between the distant student and the on-campus instructor.

Most often, this method of distance connection includes the use of printed materials such as textbooks or study guides that the student is expected to review before class. This is a highly structured approach to distance education because the class has a preset time, date, and length where students can be located anywhere as long as

they have access to the media needed to connect to the class.

Two-way Audioconferencing

This is useful to students who live in remote locations (Willis, 1993). A dedicated network can be established so that all parties can be connected at different locations simultaneously (Picciano, 2001). Sponder (1991) notes that the University of Alaska is able to connect over 320 distant sites to a simultaneous hookup anywhere in the world. This type of technology is inexpensive and easy to use. One of its strengths is that it allows for immediate interaction between all participants while in the comfort of their homes, offices, or other remote locations.

Video Technologies

Distance education programs are now relying more on the use of video as a delivery method of instructional content (Birnbaum, 2001). Like audio cassettes, video cassettes are easy to use, provide students with lessons paced at their levels, and provide a rich quality of instructional content. The videocassette recorder (VCR) which became popular in the early 1980s, has become widely used in face-to-face and distance education. Videocassettes

incorporate sound, graphics, and people into one delivery format. Video has become a popular method to enhance instruction in traditional face-to-face classrooms, replacing eight-millimeter movies, slides, and manually operated devices (e.g., overheads). The use of videocassette in distance education classrooms provides students with a make-up or substitute method of instruction for live feed when technical problems and inclement weather prevents the broadcast and transmission of instruction.

However, videocassettes do not allow for interpersonal interaction because the content has been prerecorded and the instructor is not present. Videocassettes can be broadcast to a number of distant sites on the same day but the only immediate interaction available is between the students at each site. Also, in some instances, the quality of the prerecorded material is poor because of improper lighting and sound equipment. Plus, the use of videotaping equipment can be complex and expensive, and requires expertise to develop a high quality cassette (Rowntree, 1996).

Instructional Television

Instructional television (I-TV) is the most effective system of mass communication ever developed for distance

education (Picciano, 2001). Instructional television refers to the use of the television medium to transmit or broadcast instructional materials and course content to students to watch an entire course via a television set (Picciano, 2001).

Videoconferencing

Video or tele-conferencing technology provides all the benefits of television and in addition, allows the instructor to interact simultaneously in real-time with other students in distant locations (Birnbaum, 2001). Videoconferencing is most frequently used in two-way interactive mode to several distant locations where classes are held. Information is transmitted from the on-campus broadcast classroom and allows the instructor to use a variety of teaching tools while the class is broadcast live.

Students at the distant locations can view the printed materials on one television while hearing and seeing the instructor or students on a second TV monitor. The delivery technologies being used for videoconferencing include high speed telephone systems, satellite, cable, dedicated fiber optic and digital networks and Internet protocols (Picciano, 2001).

Gunawardena and McIsaac (2003) note that “video teleconferencing can create a ‘social presence’ that closely approximates face-to-face interaction because of the ability of video teleconferencing to show images of people” (p. 368). Additionally, I-TV may use the same transmission channels as a video teleconference to extend the campus classroom and transmit programs over a longer length of time to a distant classroom because of its different application (Gunawardena & McIssac, 2003).

Computer Technologies

Just as the earlier construction of a railway-based postal service contributed to the growth of correspondence study in the nineteenth century and the later inventions of radio and TV expanded both the audiences and instructional formats of distance education, advances in computer technologies are having profound effect on how and when people learn (Kahle, 1998). However, while past innovations have most directly affected the distribution of course materials, new technologies such as computer mediated communication (CMC) are dramatically altering the relationships between teachers, students, and educational institutions.

CMC provides a means of communicating from different locations synchronously or asynchronously using a computer network (Phelps, Wells, Ashworth, & Hahn, 1991) or a computer conferencing system which offers a combination of speaking, writing, and publishing (Kahle, 1998). Kahle notes that the greatest contribution of CMC to distance education is the “increased interaction among remote learners” (p. 1). Others have found that CMC enhances pedagogy (e.g., Althaus, 1997; Laurillard, 1987; McComb, 1994), prepares students to compete in competitive job markets (e.g., Palmer, Collins, & Roy, 1995/1996), facilitates discussion and debate (Hiltz, 1986; McComb, 1994; Shedletsky, 1993a), enables collaboration beyond the bounds of the classroom (Lopez & Nagelhout, 1995), reduces communication anxiety (Coombs, 1993), and provides a wide range of information resources (Benson, 1994; Rowland, 1994; Ryan, 1994).

In one study, Althaus (1997) asserts that students using CMC discussion groups as a supplement to face-to-face discussions report better learning and earn higher grades than do students who participate only in a face-to-face discussions. However, despite its importance to distance education and learning, critics contend that CMC excludes

students who lack computer or writing skills, question the quality of interactions which are limited to text, and claim that CMC is depersonalizing due to the relative anonymity of the medium (Kahle, 1998). However, despite this criticisms, Partee (1996) notes that “a computer network can enhance the three major activities of all teachers such as counseling students individually, delivering general information [a lecture], and encouraging class discussion through e-mail and Web sites” (p. 10).

The theoretical justification for the importance of interactions in distance learning rests on psychological principles of cognition and learning in general, and not on learning in classrooms specifically (Fulford & Zhang, 1993). Therefore, it is reasonable to believe that interaction will be important to learning regardless of the medium or technology used.

The diffusion of an innovation such as distance education is apparent throughout institutions of higher education in Oklahoma and across the United States of America. Media such as teleconferencing can reduce transactional distance and increase dialogue among students towards higher level of critical thinking (Moore, 1993). Moore notes that “such technologies, if used by progressive

teachers, can both reduce distance and increase learner independence" (p. 34).

For this study, the technologies used in the distance education classrooms sampled is an interactive television (I-TV) full-motion two-way compressed video, audio, and data system which is transmitted via an Internet-based Protocol technology known as the H.323 system. The H.323 system is a delivery system that is compatible with all the distance sites that receive East Central University (ECU) courses and program certifications via I-TV systems in designated classrooms.

The system combines all three technologies discussed in this study. These technologies include print media, instructional television, audio and videoconferencing, and computer technologies. The technologies allow the instructor to communicate and interact simultaneously in real-time with both the on-campus face-to-face students and students in distant locations (Birnbaum, 2001). (see methodology chapter for a detailed description of all the components of the technologies used).

These technologies provide the instructors with the chance to reduce their physical and/or psychological

distance through immediacy behaviors. According to Mehrabian (1969), immediacy behaviors enhance closeness to and nonverbal interaction with another. Thus, the relevance and relationship of immediacy behaviors to distance education is important because according to Murphy and Farr (1993), “instructors who employ immediacy strategies to increase perceived teacher immediacy in interactive television is likely to enhance both student learning and satisfaction in videoconferencing classes” (pp. 732-733). As immediacy is so relevant to distance education, prior research related to immediacy will be discussed next.

Immediacy

Immediacy refers to the degree of perceived physical or psychological closeness between people (Mehrabian, 1969). Mehrabian originally advanced the immediacy concept in his study of interpersonal communication and defines immediacy as “communication behaviors which enhances closeness to and nonverbal interaction with another” (p. 77). According to Mehrabian (1969), immediacy behaviors reflect a positive attitude on the part of the sender toward the receiver. Andersen (1978, 1979) extended the immediacy concept to the classroom and argued that high immediate teachers would be more effective in obtaining

high levels of affective and cognitive learning from their students than would low immediate teachers. Similarly, Murphy and Farr (1993) found that immediacy behaviors such as “the use of a variety of vocal expressions when teaching, having a relaxed body position when talking to the class, and smiling at the class as a whole, conveys approachability, interpersonal warmth, and closeness of the instructor to the students” (p. 732).

Since the late 1970s, an expanding body of research has pointed to the importance of nonverbal immediacy behaviors for the effective communication of classroom teachers (McCroskey, Richmond, Sallinen, Fayer, & Barraclough, 1995). One way to enhance immediacy, creating a negative sense of communicative distance, is to increase the number of available and utilized communication channels, as communication channels are the means by which one conveys his/her thoughts and feelings to another.

Andersen (1971) argues that when a person communicates through words, facial expressions, tone of voice, body movements, and direct eye contact, there is greater immediacy than when a person communicates through words or body movement alone. Webster and Hackley (1997) report that in a typical distance learning environment, information

technology may be utilized to provide audio, video, and graphic links between two or more distance sites, for the organization, information exchange, and interactive aspects of the learning experience. Students have to feel the closeness and warmth that their distance instructor exudes through the mediated channels of communication in order to feel part of the learning experience. Therefore, distance education has sought to increase immediacy because it is important for distance instructors to incorporate behaviors in their teaching that will reduce physical and psychological distance (Murphy & Farr, 1993).

Similarly, the relationship between distance education and credibility is also important as noted by Beatty and Behnke (1980) “students simply do not accept information from sources lacking credibility” (p. 56). According to Thweatt and McCroskey (1998) “teachers who are more immediate are perceived as more credible than teachers who are less immediate” (p. 350).

Teacher Immediacy and Distance Education

Teacher immediacy is defined as verbal and nonverbal communication behaviors expressed by teachers to generate closeness and reduce the perceptions of physical and psychological distance between teachers and students

(Anderson, 1979; Gorham, 1988).

Immediacy behaviors are communicated by a set of nonverbal behaviors such as decreased physical presence, vocal variation and expression, facial expression and smiling, body movement and relaxation, and eye contact (Comstock, Rowell, & Bowers, 1995). Gorham and Zakahi (1990) note that “the relationship between teacher immediacy behaviors and student learning indicate that decreased physical and/or psychological distance between teachers and students are associated with enhanced learning outcomes” (p. 354).

Teacher immediacy in the context of distance education is paramount to decreasing the physical and/or psychological distance between teachers and students in a distance education setting just as is evident in a traditional face-to-face learning context (Murphy & Farr, 1993). Murphy and Farr note that “students learning outcomes are enhanced when physical and/or psychological distance between teachers and students are decreased both in face-to-face and interactive TV learning contexts” (p. 3). In the face-to-face classroom, the main instructional content is usually derived from the unmediated presence of the teacher (Birnbahm, 2001).

However, in distance education, Birnbahm, notes that, “most if not all of the instructional delivery is mediated, and thus the face-to-face presence of the instructor is no longer a primary force” (p. 80). Because the physical presence of the instructor is removed in distance education, the variety of media selected must be broad enough in order to maintain student interest and address a wide array of learning styles (Birnbahm, 2001). Thus, the type of media used in a distance education class becomes the primary link or connection between distant students and the instructor in the on-campus face-to-face I-TV classroom. Therefore, “it is essential that instructors of distance education decide how the process of communication will occur and how previous experiences of the students will encourage interaction, as well as effective and successful learning” (Birnbahm, 2001, p. 80).

In a study by Gorham (1988) examining the relationship between verbal teacher immediacy behaviors and student learning, she found that “students’ perceptions of teacher immediacy are influenced by verbal as well as nonverbal behaviors, and that these behaviors contribute significantly to student learning” (p. 47). The study also found that the “use of humor, praising students’ work,

offering positive comments and frequently initiating conversations before, after, or outside class impacts teacher immediacy behaviors on student learning" (p. 52). Thus, Gorham's study supports the conclusion that teachers who are nonverbally immediate with their students will produce higher levels of student perceived learning in the classroom (Gorham, 1988).

One of the most consistent and important findings in the literature is that teacher immediacy (verbal and nonverbal) has positive effects on perceived student affective learning (e.g., Andersen, 1979; Christensen & Menzel, 1998; Comstock, Rowell, & Bowers, 1995; Gorham, 1988; McCroskey, Richmond, Sallimen, Fayer, & Barraclough, 1995; Moore, Masterson, Christophel, & Shea, 1996; Sanders & Wise, 1990; Witt & Wheeless, 2001).

Studies have also found that teacher immediacy affects students' cognitive learning (e.g., Christophel, 1990; Gorham & Zakahi, 1990; Neulie 1995; Richmond, Gorham, & McCroskey, 1987; Sanders & Wiseman, 1990; Titsworth, 2001; Witt & Wheeless, 2001), impacts students' behavioral learning (e.g., Andersen, 1979; Christophel, 1990; Richmond, 1990; McCroskey & Richmond, 1992; Christensen & Menzel, 1998), and that teacher immediacy behaviors

influences how students evaluate their teachers (e.g., McCroskey, Richmond, Sallimem, Fayer, & Barraclough, 1995; Moore, Masterson, Christophel, & Shea, 1996). What is evident from these studies is that teachers' nonverbal and verbal behaviors are crucial as well as an important variable in examining the teaching-learning process between teachers and their students in the classroom (Andersen, 1978, 1979; Richmond, Gorham, & McCroskey, 1986). Such findings concerning immediacy may illustrate why some people are skeptical about distance education, if they believe this setting will automatically be less immediate.

However, because much of the research focuses on the affective, cognitive, and behavioral outcomes of the student or learner, rarely is the learner studied concerning perceptions of their instructor's credibility (Dillon & Blanchard, 1992). Hence, it is important to examine teacher credibility in distance education in order to have a better understanding of how students perceive their instructors.

As noted earlier in this report, in the context of distance education, it is predicted that immediacy will be lower in the distance education context than in the face-to-face context despite all the strategies by distance

instructors to reduce the physical and psychological distance between distance instructors and their students.

Thus, the significance of this study is to utilize immediacy behavior variables to examine teacher credibility in distance education contexts and then determine to what extent teacher nonverbal and verbal immediacy impacts the dimensions of credibility in a distance education I-TV context.

Credibility

An explication of credibility as a concept is necessary. Many scholars, beginning with Aristotle, have explored the concept of credibility and provided definitions of credibility that are inclusive of a variety of behaviors, attitudes and dimensions. For example, Aristotle (1952) referred to credibility as ethos and suggested that it consisted of three dimensions: intelligence, character, and goodwill (Thweatt & McCroskey, 1998, p. 348). Self (1988b)defines credibility as the "credulity of those trusting; the characteristics of the presenter, the presenting organization or medium, the information or message offered, and the circumstances under which the message is perceived" (p. 421). Hovland and Weiss (1951-1952) define credibility as "trustworthiness and

expertise” (p. 635). Credibility has also been defined as a multidimensional concept composed of believability, trust, and perceived reliability toward a source at a given time (Frymier & Thompson, 1992; Gaziano & McGrath, 1986; McCroskey & Young, 1981; Wheeless, 1974).

These different definitions of credibility suggest that the concept of credibility is a complex matter because its perceptive nature of the concept takes into account the intuitive thoughts and feelings of the individual. However, despite the different definitions of credibility, a shared consensus exists among scholars and researchers that credibility is multidimensional and that each dimension provides potentially different outcomes depending on the sources, studies, and the variables being evaluated or measured (for example, Frymier & Thompson, 1992; Gaziano & McGrath, 1986; McCroskey & Young, 1981; McCroskey & Thweatt, 1998; Plax & Rosenfeld, 1975; Wheeless, 1974).

McCroskey and Young (1981) argue that “the dimensionality of source credibility construct has been sufficiently demonstrated through many studies with satisfactory measures for many years” (p. 27). The credibility construct when applied to a teacher is defined by McCroskey, Holdridge, and Toomb (1974) as consisting of

five dimensions: character, sociability, composure, extroversion and competence. The dimensions of credibility are not only limited to the studies of teachers in the classroom but also are utilized in assessing the credibility of public figures, supervisors in organizations and trial witnesses in courtrooms (Hendrix, 1998).

A number of studies have examined the dimensionality of the source credibility constructs and provided scales for the measurement of teacher credibility. In their study of perceptions of teacher credibility, McCroskey, Holdridge, and Toomb (1974) devised a teacher credibility measure based on five dimensions of source credibility: (1) sociability: refers to as been (goodnatured/irritable, cheerful/gloomy unfriendly/friendly); (2) extroversion: refers to as being (timid/bold, verbal/quiet, talkative/silent);(3) competence: refers to as an (expert/inexpert, intelligent/unintelligent, intellectual/narrow); (4) composure: refers to as being (poised/nervous, tense/relaxed, calm/anxious); and (5) character: refers to as being (dishonest/honest, unsympathetic/sympathetic, good/bad) (McCroskey, Holdridge, & Toomb, 1974). These five dimensions will serve as the operational definitions and measures of teacher credibility

for this study. This is based on the established reliability and validity of the five dimension teacher credibility instrument, and the ability of the instrument to predict student learning (McCroskey, et al., 1974).

Teacher Immediacy and Credibility

Teacher credibility refers to “students’ attitudes toward or evaluation of their teachers” (Palmgreen, Rubin, & Sypher, 1994, p. 352). Researchers have examined several variables that may influence students’ perceptions of teacher credibility in traditional face-to-face contexts. Some of these variables include: the importance of vocal cues and verbal messages (Beatty & Behnke, 1980), perceived teacher affinity-seeking in relation to perceive teacher credibility (Frymier & Thompson, 1992; Teven & McCroskey, 1996), faculty course evaluation of teacher credibility and student reported performance levels (Beatty & Zahn, 1990; Holdgridge, 1972; Teven & Comadena, 1996) and impact of teacher immediacy and misbehaviors on teacher credibility (Thweatt & McCroskey, 1998). These studies found that teachers that have high credibility are capable of increasing students’ motivation, their drive to succeed, and their overall academic performance. Thus, teacher credibility “plays a fundamental role in classroom dynamics

and student perceptions of teacher credibility have a profound and persuasive influence on classroom communication" (Russ, Simonds, & Hunt, 2002, p. 311). If credibility is such an essential characteristic for instructors, it is important to examine what immediacy behaviors are likely to impact teacher credibility in distance education environments, specifically in an I-TV classroom.

A study by Beatty and Zahn (1990) examined the relationship between teacher credibility and various student perceptions about the instructor and course within the context of communication courses. Beatty and Zahn found that teacher credibility was positively correlated with students' (1) overall rating of the level of excellence of the course and instructor and (2) intentions to take more courses from the instructor.

Thweat and McCroskey (1998) examined the impact of teacher immediacy and teacher misbehavior on student perceptions of their teachers' credibility on the dimensions of competence, trustworthiness, and caring (goodwill) in a traditional classroom. They found "strong positive effects for teacher immediacy and strong negative effects for teacher misbehavior on all three dimensions of

teacher credibility" (p. 348). The results indicate that "teachers who are immediate will be perceived as more credible than teachers who are less immediate" (p. 350). Therefore, it is important that teachers maintain high immediacy in order to protect their credibility in the classroom (Thweat & McCroskey, 1998).

Johnson and Miller (2002) examined immediacy, credibility and learning in a traditional classroom setting between students in the U.S. and Kenya. They found "significant positive relationships between verbal, nonverbal immediacy, credibility and cognitive learning among the U.S. and Kenyan students in the study" (p. 288).

The correlations between verbal immediacy and credibility and nonverbal immediacy and credibility accounted for 21% and 22% respectively for the Kenyan students (n = 195) and 23% and 19% respectively for the U.S. students (n = 141) (Johnson & Miller, 2002). The findings of the study further suggests that "highly immediate teachers are perceived as being more effective and credible by their students" (p. 289). The results also support other studies that found positive relationship between teacher immediacy and positive student evaluations of high immediacy teachers (e.g., Moore, Masterson,

Christophel, & Shea, 1996; Rocca & McCroskey, 1999), and positive correlation with affective student learning (e.g., Comstock, Rowell, & Bowers, 1995; Sanders & Wiseman, 1990).

In a study to examine the effect of nonverbal reactions on viewers' perceptions of speaker's credibility, Sieter, Abraham, and Nakagama (1998) found that the "one speaker was given significantly higher character and competence ratings when his opponent indicated constant disagreement" (p. 491). Also, the speaker was given significantly higher ratings for composure and sociability when his opponent was in constant disagreement than when his opponent was not shown or when his opponent indicated no disagreement. In this study, students watched one of four versions of a televised debate. One version used a single-screen format, showing only the speaker, while the other three versions used a split-screen format in which the speaker's opponent displayed constant, occasional, or no nonverbal disagreement. Compared to televised debates using a single-screen format, those using a split-screen (i.e., those showing both debaters simultaneously), provide viewers greater access to the nonverbal reactions of the debaters' opponent. The results also indicate higher credibility for the speaker with higher character,

competence, composure and sociability ratings than the speaker without occasional or no nonverbal disagreement. Thus, the study suggests that the presentation of nonverbal behaviors affect viewers' perception of a speaker's credibility.

As previously indicated in this report, few studies have examined teacher immediacy and teacher credibility in distance education. These studies have focused primarily on the effects of nonverbal behaviors and instructor competence in distance education videotaped courses (e.g., Guerrero & Miller, 1998), the effects of classroom design and students' perception of instructor's credibility and immediacy in distance education classroom (e.g., Jayasinghe, Morrison, & Ross, 1997), effects of system design and teacher immediacy on student learning and satisfaction (e.g., Hackman & Walker, 1990), I-TV instructors' perceptions of students' nonverbal responsiveness on distance teaching (e.g., Mottett, 2000), instructor immediacy behaviors and learning in Web-based courses (e.g., Aubaugh, 2001), and the impact of teacher immediacy and misbehaviors on teacher credibility in a traditional context (e.g., Thweatt & McCroskey, 1998).

A study by Guerrero and Miller (1998) examined the relationship between nonverbal behavior and initial impressions of instructor competence and course content within the context of instructional videotapes used in distance education courses. They predicted that "instructors who are viewed as expressive, warm, involved and articulate will be judged as highly competent" (p. 30). Competence was defined in terms of likeability and trustworthiness. Four ten-minute segments of introductory lectures from videotaped distance education course were shown to eight undergraduate classes in Speech Communication, with two classes viewing each videotape.

After watching the videotape, one hundred and eighty students rated the instructor's involvement/enthusiasm, expressiveness/warmth, fluency/composure, eye contact and articulation/clarity. Instructor's competence (in terms of likeability and trustworthiness) was also judged by the students.

Results indicate that instructors who were viewed as expressive, warm, and involved were most likely to be judged as highly competent. Also, when instructors are expressive, warm, involved, and articulate, their course content was likely to be judged favorable. The findings

suggest that “even in non-interactive environments such as videotaped lecture, the more warm a student perceives an instructor to be, the more likely the student will perceive the instructor as competent and likable and thus would see the course content as valuable and enjoyable” (p. 38). However, the study did not examine all the five dimensions of teacher credibility. Although only one dimension (i.e., competence) was studied, credibility was operationalized differently compared to the present study which will examine all five dimensions of credibility (i.e., competence, sociability, extroversion, composure, and character).

Jayasinghe, Morrison, and Ross (1997) investigated the effects of camera angle and monitor placement on perceived instructor credibility and immediacy behaviors. They found that camera angle alone did not significantly affect participants’ perception of instructors’ credibility, rather camera angle combined with monitor placements positively influenced instructor credibility, immediacy and interactions in a distance education classroom. Five dimensions (i.e., sociability, dynamism, composure, competence and character) of credibility was utilized in this study to assess source [instructor] credibility with

camera angle variations while the General Immediacy Scale (Andersen, 1979) was used to assess the perceived immediacy level of the instructor (Jayasinghe, et al., 1997).

Although this study utilized five dimensions of credibility and Andersen's (1979) Generalized Immediacy scale in their measure of perceived instructor immediacy behaviors, only nonverbal immediacy was examined rather than both verbal and nonverbal immediacy.

Hackman and Walker (1990) investigated the effects of system design and social presence, in the form of teacher immediacy on student learning and satisfaction. They found that system design and teacher immediacy behavior strongly impacted student learning and satisfaction. They noted that "instructors who engaged in immediate behaviors such as encouraging involvement, offering individual feedback, maintaining relaxed body posture and using vocal variety were viewed more favorably by the respondents" (p. 196).

Mottet (2000) examined the relationships between interactive television instructors' perceptions of students' nonverbal responsiveness and their influence on distance teaching. One hundred and fifty-seven (males = 87, females = 70) interactive television instructors were surveyed for this study. Respondents were asked to assess

their students' overall nonverbal responsiveness in a class they currently teach using a 4-item, bi-polar measure containing the following adjective pairs: Responsive/Unresponsive, Alert/ Not Alert, Attentive/Inattentive, Expressive, Nonexpressive. Respondents were asked to indicate how often they saw or heard their students engaging in individual nonverbal behaviors. A verbal responsiveness style was operationalized by the author as "a teacher who is perceived as being helpful, sympathetic, compassionate, responsive to others, and friendly" (p. 148). In both instructional contexts, nonverbal responsiveness was positively correlated with teaching satisfaction of I-TV instructors with their students. The results indicate that nonverbal audible cues such as vocal starters, vocal assurances, vocal variety, and vocal inflections remain important sources of information.

Based on the results of the study, the author concludes that "I-TV instructors' perceptions of students' nonverbal responsiveness seem to be positively related to their impressions of students, their perceptions of their teaching effectiveness and satisfaction, their perceptions of teacher-student interpersonal relationships, and their

preference for teaching in the I-TV classroom as opposed to the face-to-face classroom" (p. 161).

Arbaugh (2001) examined whether instructor immediacy behaviors were significantly associated with student learning and satisfaction in Web-based MBA courses. The study found that immediacy behaviors were positive predictors of student learning and course satisfaction and that instructor experience with Web-based courses were also significant predictors of student learning and course satisfaction. Twenty-five out of twenty-eight Web-based class sections taught by fourteen instructors were surveyed for this study with a sample size of 390 participants. Immediacy behaviors were measured with Gorham's (1988) Verbal Immediacy scale and students' attitude toward the delivery technology was measured using a two-item scale adapted from Thompson, Higgins, and Howell's (1991) study.

Although the results of this study suggest that instructor immediacy behaviors were positive predictors of student learning and positive attitude toward course software and course satisfaction in Web-based courses, perhaps the major difference in this study from the present study is the type of technology used for distance education (i.e., Web-based computer format).

In a traditional classroom, Thweatt and McCroskey (1998) investigated the impact of teacher immediacy and teacher misbehaviors on student perceptions of teacher credibility. The authors predicted that (1) immediacy would have a positive effect on students' perceptions of teacher credibility and (2) that teachers' misbehaviors would have negative outcomes by students' perceptions of the teacher being less credible. They found positive effects for teacher immediacy and strong negative effects for teacher misbehavior on all three dimensions of credibility defined as competence, trustworthiness and caring.

Carrell and Menzel (2001) study focused on the variations of learning in face-to-face and distance education. They investigated teacher immediacy behaviors between a live classroom, a video classroom, and an audio with PowerPoint display classroom with 120 lower and upper division undergraduate students. The first group viewed a live lecture, the 2nd group simultaneously viewed a projected video image of the same lecture and the 3rd group heard the same lecture and viewed a PowerPoint slideshow supporting the lecture. The respondents then completed the following surveys utilizing Andersen's (1979) Generalized

Immediacy Scale. The impact of the three educational settings on participants' learning, motivation, and perceived teacher immediacy was assessed and the authors found that perceived instructor immediacy was significantly higher for the live classroom (*m* = 5.28, *sd* = 1.20) when compared to a video classroom (*m* = 4.56, *sd* = 1.57) and lowest for an audio-based PowerPoint classroom (*m* = 4.17, *sd* 1.92). The study also found that student motivation, perceived learning, affect toward the instructor and the willingness to enroll with instructor were highest in the live classroom setting compared to the other two settings. The authors note that "immediacy was higher for the video setting than for the PowerPoint setting which suggests a preference for visual cues by respondents to an instructor's immediacy" (p. 236).

Although this study by Carrell and Menzel (2001) utilized a different methodology (i.e., different technology and study sample) compared to the present study, it does support the rationale that teacher immediacy, both verbal and nonverbal are such an "important variable for investigating [immediacy] in traditional and technology driven classrooms" (p. 232).

The results of these studies indicate positive and significant relationships between teacher immediacy in both traditional face-to-face, I-TV and Web-based distance education formats. A relatively limited number of studies have examined immediacy and credibility in distance education and found that students have lower expectations of nonverbal behaviors in distance education than in traditional classrooms. (e.g., Witt & Wheeless, 1999; Carrell & Menzel 2001).

Frietas, Myers, and Avtgis (1998) examined whether perceptions of instructor immediacy differed between students in conventional face-to-face and distributed learning classrooms. They defined distributed learning as the “use of computers in distance learning where students primarily interact with the instructor and other students through computer-mediated communication” (p. 367). They predicted that students in the conventional face-to-face classroom would perceive a higher rate of instructor verbal and nonverbal immediacy than students in the distributed classroom. They found that students enrolled in conventional and distributed classrooms did not perceive a significant difference in instructor verbal immediacy, but rather the students in conventional face-to-face classroom

perceived a higher rate of instructor nonverbal immediacy than students in the distributed learning classroom. Freitas, et al. note that perhaps “because students in the distributed classroom are aware that face-to-face interaction will not take place, any expectations on instructor nonverbal immediacy may be lower than the expectations of the face-to-face students” (p. 370). They note with surprise that students in the distributed classroom did not differ in their perceptions of instructor verbal immediacy “given that technological problems in interactive transmission may cause distributed students to feel less verbally involved with their instructors who are physically located in the face-to-face classroom” (p. 369).

Additionally, Witt and Wheeless (1999) explored possible relationships between students’ expectations for teacher nonverbal immediacy and their enrollment in a distance learning course. They predicted lower expectations of teacher nonverbal immediacy among currently enrolled distant students than among currently enrolled traditional classroom students. Utilizing Andersen’s (1979) 9-item Generalized Immediacy scale, 182 undergraduate respondents completed the scale indicating their expectations for teacher nonverbal immediacy behaviors. The study found that

distant students expected less nonverbal immediacy from tele-course teachers than the on site students. Overall, the study found that students with previous distance learning experience had slightly higher expectations than students without any distance learning experience.

However, unlike the present study, the aforementioned studies focused primarily on computer-mediated communication and tele-course classroom formats in distance education rather than on both teacher nonverbal and verbal immediacy in distance education I-TV format. Therefore, will immediacy still be lower with the more interactive I-TV format?

A possible communication behavior for enhancing student perceptions of teacher credibility in the classroom has been the use of affinity-seeking strategies (Frymier & Thompson, 1992). Affinity is defined by McCroskey and Wheeless (1976) as “a positive attitude toward another person” (p.231). This means that another person may pay more attention to people and things they like if that person “ perceives you as credible, attractive, similar to you or themselves” (Baringer & McCroskey, 2000, p. 178) and therefore, the likelihood exits that people learn more from

sources they like as opposed to sources they dislike (McCroskey, Richmond, & Stewart, 1986).

Frymier and Thompson (1992) note that teachers have employed some of the affinity seeking strategies such as (1) nonverbal immediacy (i.e., eye contact with students, smiling, relaxed body posture), (2) dynamism (i.e., showing the students that one is dynamic, active, and enthusiastic via physical and vocal animation), and (3) trustworthiness (i.e., letting the students know that the teacher is fair, responsible, reliable, honest, sincere, and consistent in their beliefs and behaviors) to increase students' positive perceptions of teacher credibility in the area of teachers' competence and character in the classroom. In a study to investigate perceived teacher affinity-seeking in relation to perceived teacher credibility, Frymier and Thompson (1992) found that the use of affinity-seeking strategies were positively associated with competence and character and significantly associated with students' motivation to study. Although teachers do not need to be liked to be effective in the classroom, Frymier and Thompson (1992) argue that teachers need to be perceived as "both competent and of good character to be effective because the

possibility exists that people learn more from sources they liked as opposed to sources they dislike" (p. 397).

Furthermore, when teachers employ affinity-seeking strategies such as smiling, making frequent eye contact with students, exhibiting forward leans and other nonverbal cues that indicate interest in the students, the students' perception of their instructor may enhance the teachers credibility in the classroom (Frymier & Thompson, 1992).

Although, the result of Frymier and Thompson (1992) study indicates that several of the affinity-seeking strategies (including nonverbal immediacy) were positively associated with competence and character dimensions of teacher credibility, perhaps affinity-seeking strategies such as nonverbal immediacy would have similar or different outcomes with the extroversion, sociability and composure dimensions of teacher credibility. Hence, the contribution of the present study is that it examines all the five dimensions of credibility in an interactive TV distance education classroom context.

Thus, due to the limited amount of research in the area of teacher immediacy and teacher credibility in relation to distance I-TV students, this makes the present study one of particular importance for distance learning

students, instructors and educators. As noted by Richardson and Swan (2003) “teacher immediacy behaviors are especially important issues for those involved in delivering or receiving either online and/or other distance education programs” (p. 81). Accordingly, the present study is designed to extend the findings of teacher immediacy and teacher credibility research by combining both the verbal and nonverbal immediacy variables and also the five dimensions of teacher credibility in both face-to-face and distance education. Thus, the primary goal and contribution of the present study and dissertation is to examine to what extent teacher immediacy (both verbal and nonverbal behaviors) relates to student perceptions of instructor credibility in face-to-face interactive television (I-TV) versus distance education I-TV format.

III. METHODS

Introduction

This chapter describes the methodology utilized for this study. Specifically, it provides a detailed description and analysis of why and how the study area and sample population was chosen, description of the Interactive Television (I-TV) class design and function for face-to-face and distance education instructional settings, and tables of the graduate courses, degrees, certification programs, and enrollment data utilized for this study. Additionally, it describes and justifies the statistical methods utilized for the study.

Rationale

East Central University's (ECU) existing interactive television (I-TV) delivery system was chosen for this study. This is because the I-TV system at ECU is comparable with other four-year, degree-granting Oklahoma state universities that provide similar graduate degree programs via distance education.

Data Collection

Study Area

East Central University (ECU) in Ada, Oklahoma is one of the six four-year degree-granting state universities

located in rural areas of Oklahoma. ECU has an existing interactive television (I-TV) delivery system that provides undergraduate, graduate degree courses and certification programs simultaneously for both the traditional on-campus face-to-face and the distance learning student populations (see Table 1 for a list of graduate degrees and certification programs).

The institutions with existing I-TV delivery systems utilized for this study were Southeastern Oklahoma State University [SEOSU] in Durant, Ardmore Higher Education Center [AHEC] in Ardmore, Duncan Higher Education Center [DHEC] in Duncan, Eastern Oklahoma State College [EOSC] in Wilburton, Eastern Oklahoma State College [EOSC], McAlester Campus in McAlester, Gordon Cooper Technology Center [GCTC] in Shawnee, and McCurtain County Higher Education Center [MCHEC] in Idabel.

The distance education I-TV enrollments and classroom designs for ECU are similar to the above mentioned institutions in Oklahoma. Additionally, many of these institutions allow their students to count distance education courses from the other universities toward earning degrees and certifications.

The courses are sent to twelve distance learning receiver sites. Over nine hundred students enroll in the distance learning courses and/or programs at East Central University each semester with an increase in enrollment each academic year.

In the spring of 2002, when this study was conducted, the total number of students enrolled was 969. Of the 969 enrollments, 224 were enrolled as graduate students. Of the 224 graduate students, 79 were enrolled on-campus and 145 were enrolled in the following seven off-campus distant site institutions: (a) Ardmore Higher Education Center in Ardmore [43], (b) Duncan Higher Education Center in Duncan [6], (c) Southeastern Oklahoma State University in Durant [7], (d) McCurtain County Higher Education Center in Idabel [5], (e) Eastern Oklahoma State College, McAlester Campus in McAlester [38], (f) Gordon Cooper Technology Center in Shawnee [44], and (g) Eastern Oklahoma State College in Wilburton [2] (see Table 2).

Instructional Delivery Method

The type of instructional delivery method used for this study is the existing interactive television (I-TV) system at East Central University. The I-TV system is a full-motion two-way compressed video, audio, and data

system that is transmitted via an Internet-based Protocol known as a H.323 system.

The H.323 system is compatible with all the distance sites that receive ECU graduate degree courses and program certifications via the I-TV classrooms on their campuses. The graduate courses and applicable degrees/certification programs (see Table 3) used for this study utilized the H.323 system. The system integrates both text-based and multi-media based formats such as CD-ROM, PowerPoint, Corel presentations, and videotape applications for the on-campus face-to-face instruction and distance education instruction.

The instructors used for this study taught the I-TV on-campus face-to-face students and the students at the I-TV distance sites simultaneously (see Table 4 for list of instructors for each class/course with sample size of students surveyed on-campus and off-campus). The text-based and/or multi-media application is a supplemental teaching tool utilized by the instructors during their lectures. For example, the contents or graphics of a lecture that are produced and stored on a CD-ROM can be accessed through the computer and shown synchronously to the I-TV face-to face students on-campus and at distance site during instruction.

When the computer-generated graphics are accessed and shown on the TV monitor, the students in the on-campus I-TV classroom see both the graphics and the instructor. However, the distant site students only see the graphics on their TV monitor with a voice-over of the instructor's explanation and/or description of the graphics.

The I-TV classroom is equipped with video cameras that capture and project the students' images electronically and simultaneously to both the TV monitors in the classroom and the TV monitors at the distant site classrooms. There are four 35-inch TV monitors in each face-to-face classroom mounted to the ceiling. Two of the monitors face the instructor. One monitor depicts the instructor's video image that is seen locally in the classroom and transmitted to the distant sites. The other monitor depicts three sites on a split-screen showing students from each distant site. Two other monitors face the on-campus I-TV students. One depicts the instructor and the other monitor depicts a split-screen of each of the three distant sites. Thus, both the instructor and students on-campus can see the video images of distant students during class lectures. The distance sites have two monitors in the classrooms, both

facing the students. One monitor shows the teacher, and the other monitor has the split-screen of the other sites.

Depending on the classroom size and number of students, there are five to thirty push-to-talk microphones on the student desks. These microphones, also available at the distant sites, are used for a two-way audio transmission of students' comments and questions during lectures and discussions. When not in use the microphones are muted to alleviate noise and/or any other interference. When turned on and in use, the microphones automatically activate the classroom's student camera preset with different camera angles depending on the seating position and location of the student in the classroom.

All students at both the on-campus I-TV classrooms and distance site I-TV classrooms are given an initial orientation on the functions of the video cameras, TV monitors and microphones. Students are informed that during class sessions and lectures, they will see and hear each other on the TV monitors, particularly whenever they ask questions and/or make comments.

The instructor's desk area is equipped with the following: (1) a push-to-talk desk microphone for audio transmission to the distant site students, (2) a visual

presenter for graphics, slides, and other visual documents and/or materials, (3) a VCR, DVD, and Laser-disk for viewing of videotaped materials, (4) a touch-screen computer switcher to access the electronic whiteboard, computer-generated materials, and programs such as the Power-point and Corel presentations from CD-ROMs, e-mails, the Internet, and World Wide Web, and (5) a podium to teach from (either half or full).

Instructors wear a wireless lapel microphone that provides audio during movements away from the podium. The instructor's camera is mounted on the wall in front of the classroom, above the students' desks and facing the instructor. The instructor's camera captures and transmits the "live" image, including movement and any physical characteristics of the instructor/instruction to the distant students.

Each classroom in Ada is also furnished with a separate control room with two 9-inch TV monitors (for monitoring what is being transmitted and received in the classroom), a VCR duplicating machine (for recording and/or duplicating of the classroom lectures), a fax/copier machine (for sending/receiving and copying documents/materials), a telephone (for internal and

external communications), and a video/audio switcher (for accessing all the video/audio sources on the instructor's desk in the classroom).

A student assistant (SA) is assigned to each class session to monitor and record the classroom instruction in the control room. The student assistant also provides aid to the instructor and/or students when needed. (e.g., changing the batteries for the wireless microphones when the batteries are dead, faxing course materials to distant sites, or assisting students with the technological aspects of their oral presentations in front of the classroom).

Each class session is recorded in case of inclement weather and/or technical problems. However, the recorded videotapes are only kept for two weeks and then erased for re-use. Furthermore, ECU's distance education programs, courses, and degree certifications are not offered as broadcast telecourses or as correspondence studies. Thus, the recorded class lectures could not be used for such purposes.

Sample

Convenience sampling was used for this study consisting of two groups of graduate students at East Central University. One group is the I-TV on-campus

face-to-face graduate students, and the other group is the I-TV off-campus distance learning graduate students at seven distant sites (see Table 2).

All the graduate students who enrolled in designated graduate courses were selected for this study. Participation for the study was on a voluntary basis but prior arrangement was made with each instructor for granting of extra credit for all students participating in the study.

The students were informed of the study and of the extra credit for participation by their respective instructors. A total of nine instructors took part in the study. Of the nine, three were males and six were females. Two of the instructors (one female and one male) taught two classes each (see Table 5). The age range of the instructors was 41 to 62 years old and the years of I-TV teaching experience was 2 to 11 years experience (see Table 5). Fictitious names were given to each instructor for reasons of confidentiality.

Overall, 268 graduate students were surveyed for the study. However, of the 268 surveys administered, only 224 were returned, for a response rate of 83.6%. The age range of the responding graduate students was 23 to 45 years old.

Participants Demographics

The 224 participants for this study consisted of graduate students (n = 79) from East Central University (ECU), Ada, and graduate students (n = 145) from the seven distant sites selected for this study (see Table 6 for percentage of participants at each site). The participants' demographic information in this study include age, gender, race, location of residence, year in school, professional occupation, and method of instruction.

In the questionnaire, participants were asked to write their age on a blank line. For the purpose of this study, age was coded as (1) 21-30, (2) 31-40, (3) 41-50, and (4) 51-60. Ages of the respondents ranged from 21 to 60. Of the 224 respondents, 32.1 percent (n = 71) were 21-30 years old, 36.2 percent (n = 80) were 31-40 years old, 25.8 percent (n = 57) were 41-50 years old, and 5.9 percent (n = 13) were 51-60 years old. Five individuals did not indicate their age (see Table 7 for the age distributions of the on-campus (ONC) and off-campus (OFC) respondents).

Question two requested the participants to list their gender as (1) male or (2) female. Of the 224 respondents, 67.9 percent (n = 152) were female and 32.1 percent (n = 72) were male. One individual (0.4%) did not indicate their

gender.

Question three asked for the racial identity of the participants. Answers to this question were coded as (1) Caucasian American, (2) African American, (3) Hispanic American, (4) Native American, (5) Asian American, and (6) other (specify).

Of the 224 respondents, 82.6 percent (n = 185) were Caucasian American, 4.9 percent (n = 11) were African American, 1.3 percent (n = 3) were Hispanic American, 9.8 percent (n = 22) were Native American, 0.4 percent (n = 1) were Asian American, and for item 6 (other – specify), 0.4 percent (n = 1) each were Caucasian American/African American and Caucasian American/Native American. One individual (0.4%) did not specify their race.

Question four asked the participants' location of residence. For this question, the participants could respond with (1) urban, (2) suburb, and (3) rural. Nineteen percent (n = 44) were urban residents, 10.4 percent (n = 23) were suburb residents, and 69.8 percent (n = 155) were rural residents. Three individuals (1.1%) did not indicate their residence.

Question five asked for the participants' year in school. The answers were coded as (1) 1st year graduate

student, (2) 2nd year graduate student, (3) other/post graduate/master's, (4) 3rd year graduate student, (5) 4th year graduate student, (6) 2nd master's, (7) 3rd master's, (8) certification, (9) last class for master's degree, and (10) special graduate. Fifty-seven percent (n = 128) were first year graduate student, 27.0 percent (n = 61) were 2nd year graduate student, 8.0 percent (n = 18) were other/post graduate/master's student, 1.0 percent (n = 3) were 3rd year graduate student, .9 percent (n = 2) were 4th year graduate student, 2.2 percent (n = 5) were 2nd masters graduate student, 0.4 percent (n = 1) were 3rd masters graduate student, 0.4 percent (n = 1) were certification student, 1.3 percent (n = 3) were last class for master's degree, and 0.9 percent (n = 2) were special graduate student. One individual (0.4%) did not indicate their year in school.

Participants were asked to indicate their professional occupation in question six. The answers to this question were coded as (1) education, (2) business, (3) social work, (4) banker, (5) unemployed, (6) student, (7) health care, (8) human resources, (9) media specialist/technology, (10) rancher, (11) homemaker, (12) counselor, and (13) manager.

Of the 224 respondents, 75.2 percent (n = 161) were in

education, 1.4 percent (n = 3) were in business, 1.4 percent (n = 3) were in social work, 0.5 percent (n = 1) were in banking, 2.3 percent (n = 5) were unemployed, 6.5 percent (n= 14) were students, 2.3 percent (n = 5) were in health care, 1.9 percent (n = 4) were in human resources, 2.8 percent (n = 6) were in media specialist/technology, 0.5 percent (n = 1) was a rancher, 0.5 percent (n = 1) was a homemaker, 2.3 percent (n = 5) were a counselor, 0.9 percent (n = 9) were a manager, 0.5 percent (n = 1) was a librarian, 0.5 percent (n = 1) was a secretary, and 0.5 percent (n = indicated “other.” Fifteen individuals (6.6%) did not indicate their professional occupation.

Question 7 asked participants to indicate method of instruction and their answers were coded as (1) on-campus I-TV face-to-face classroom, or (2) off-campus I-TV distance classroom. Of the 224 respondents, 35.3 percent (n = 79) were in the on-campus I-TV face-to-face classroom, and 64.7 percent (n = 145) were in the off-campus I-TV distance classroom. Two individuals (0.9%) did not indicate method of instruction. See Table 7 for the remaining demographic characteristics of gender and race of the on-campus (ONC) and off-campus (OFC) participants.

Procedures

Two weeks prior to the survey, the questionnaires and consent forms were mailed to each of the coordinators at the seven distance sites with detailed instructions on how to administer the surveys and consent forms.

Three of the coordinators (in Ardmore, McAlester, and Shawnee) are employed by ECU but reside and work at the aforementioned sites. The rest of the coordinators are paid, full-time employees of their respective distant site institutions whose primary responsibilities include but are not limited to assisting in the coordination, advisement, and orientation of all students enrolled in East Central University's Outreach and I-TV distance education courses and programs.

Each coordinator called to confirm the receipt of his/her survey package. The instructors were then contacted to set a date for the study. The instructors orally informed the graduate students in both the on-campus I-TV face-to-face and the distance learning classrooms during a routine class meeting about the survey and told them it would be administered during the next class session.

The respondents completed the 15-item Semantic Differential Teacher Credibility scale (Holdridge, McCroskey, & Toomb, 1974), the Generalized Immediacy (GI) scale (Andersen, 1979), and the Nonverbal Immediacy Behaviors (NIB) instrument (Gorham, McCroskey, & Richmond, 1987).

The survey was conducted for a week (Monday to Thursday) in February 2002 at the beginning of a regularly scheduled (4:25 p.m. and 7:05 p.m.) class for both the ITV face-to-face students on ECU campus and students at the selected distance learning sites. Each participant was given a consent form (see Appendix B, page 150) by the survey coordinator to read and sign before proceeding with the completion of the survey.

The students were told that the purpose of the study was for (1) the completion of a dissertation in partial fulfillment of the requirements for a doctoral degree in Communication at the University of Oklahoma in Norman, and (2) the examination of student perception of teacher credibility in interactive TV face-to-face and distance education instructional settings. The completion of the survey lasted between fifteen to thirty minutes, at the end of which the participants put

the completed survey in an envelope, sealed it, and handed it back to the survey coordinator.

The instructors' were not privy to the questionnaires before or after the administration and completion of the survey to protect confidentiality.

Instruments Used in this Study

The questionnaire instrument used for this dissertation contained items relating to teacher credibility (broken down into five dimensions of credibility competence, sociability, extroversion, composure, and character) and teacher verbal and nonverbal immediacy. (For the complete questionnaire, see Appendix A). The instrument used had forty-five total items requiring a response, including the demographic information of the participants surveyed (see Appendix A). However, the following items were deleted because the items were not applicable for the distance students surveyed: (i.e., touches students in the class, seats on a desk in a chair while teaching, and stands behind podium or desk while teaching). It should be noted that the deletion of these items did not affect the reliability of the NIB instrument. The 15-item Semantic Differential Teacher Credibility scale by Holdridge, McCroskey & Toomb (1974), which has been

reported to have a reliability ranging from .80 to .96 alpha, was used to measure the credibility of the instructors for this study. There is good evidence for the validity of this measure (McCroskey, Hamilton, & Wiener, 1974). The reliability coefficients (Cronbach's alpha) for teacher credibility was (alpha) = .920, thus confirming the reliability of the scale used for this study.

The "competence" subscale contained three items: my instructor in this course is "expert/inexpert," "unintelligent/intelligent," and "intellectual/narrow."

The "sociability" subscale contained three items: my instructor in this course is "good natured/irritable," "cheerful/gloomy," and "unfriendly/friendly."

The "extroversion" subscale contained three items: my instructor in this course is "timid/bold," "verbal/quiet," and talkative/silent."

The "character" subscale contained three items: my instructor in this course is "dishonest/honest," "unsympathetic/sympathetic," and "good/bad."

The "composure" subscale contained three items: my instructor in this course is "poised/nervous," "tense/relaxed," and "calm/anxious."

Each item was measured utilizing a seven point Likert-type scale, which ranged from very strong feeling to fairly weak feeling. The participants were then asked to circle the number which best represents their feelings about the instructors surveyed in this study.

The reliability coefficients (Cronbach's alpha) for each subscale was sufficient in this study: "competence" = .702, "sociability" = .875, "extroversion" = .678, "composure" = .761 and "character" = .845.

The 9-item Generalized Immediacy (GI) scale by Andersen (1979), was used to measure the overall level of immediacy behaviors of the instructor. It has had previous reliabilities ranging from .84 to .97. Prior research by Andersen (1979), Andersen, Norton, and Nussbaum, (1981), Kearney, Plax, and Wendt-Wasco, (1985), Plax, Kearney, McCroskey, and Richmond (1986) have used the GI scale to examine students' affective learning and found evidence for its validity.

The nine items asked participants to rate the overall level of immediacy of their teacher by responding to two sets of semantic differential scales ranging from 1 (very immediate) to 7 (distant). For example, the first set of scales contained five items with the statement: "In your

opinion, the teaching style of your instructor is very immediate" agree/disagree, false/true, incorrect/correct, wrong/right, and yes/no (see Appendix A).

The second set of scales contained four items with the statement: "Please circle the number that corresponds to the word that best describes the teaching style of your instructor": immediate/not immediate, cold/warm, unfriendly/friendly, and close/distant (see Appendix A).

The participants were asked to complete the 9-item GI scale regarding immediacy behaviors of the instructors surveyed and their responses to the 9-items are summed for the statistical analyses in this study. A reliability analysis was conducted for the 9-item Generalized Immediacy (GI) scale (Andersen, 1979) to assess the immediacy of the instructor. The analysis yielded an Alpha of .954 for the GI scale.

The 14-item Nonverbal Immediacy Behaviors (NIB) instrument by Richmond, Gorham, & McCroskey, 1987), was used to further measure the non-verbal immediacy behaviors that a teacher might use while teaching in front of the classroom. For example, the NIB measures students' perceptions of a teacher's physical or psychological closeness by identifying behaviors such as eye contact,

gestures, open-body position, proximity, and movement (Richmond, Gorham and McCroskey (1987). The instrument has shown prior reliabilities of .73 to .89 alpha based on whether the scale was teacher self-report (the lower reliability) or a student's report of the teacher (the higher reliability)(Richmond, et al., 1987).

The fourteen items asked participants to rate their teacher's nonverbal immediacy by indicating whether the teacher engages in a specified behavior. For each of the 14-items, the participants indicate on a scale ranging from 0 (never) to 4 (very often) how frequently their teacher engages in the specified nonverbal immediacy behaviors. Some examples of the types of questions on the NIB scale include: "Instructor sits behind desk while teaching," "gestures while talking to the class," "smiles at class while talking," "has a very relaxed body position while teaching," "moves around the classroom while teaching" (see Appendix A for complete instrument). There is evidence for the validity of this scale.

Gorham and Zakahi (1990) found that the NIB scale provided consistency and high positive correlation with teacher self-reports and students' reports of their teacher's level of immediacy. With regard to construct

validity, there is evidence to support a moderate to substantial relationship between NIB and affective and/or cognitive learning (e.g., Christophel, 1990; Gorham & Zakahi, 1990; Richmond, et al. 1987; Sanders & Wiseman, 1990).

A reliability analysis for the 14-item Nonverbal Immediacy Behaviors (NIB) scale (Gorham, Richmond, & McCroskey, 1987) yielded an alpha of .802. This was considered acceptable.

IV RESULTS

The purpose of this study was to examine how student perceptions of nonverbal and verbal immediacy relate to dimensions of credibility between I-TV face-to-face and distance education I-TV classrooms. The study further examined to what extent classroom setting was a moderator for the relationship between teacher immediacy and credibility.

The study specifically looked at master's level graduate classes at East Central University, Ada, Oklahoma that are attended by on-campus I-TV face-to-face students and broadcast simultaneously to students at selected I-TV distance sites. Due to the small sample size of the I-TV classes and instructors, alpha was set at .05 for all tests of significance. Select questions were reverse coded. On the dimensions of credibility scale, questions 2,3,9, and 15 were reverse coded (see appendix A, for full questionnaire).

The hypotheses posited were tested using an independent sample t-test to examine whether or not there were significant differences between the groups at the .05 level of significance. Alpha was not lowered even though many tests were run due to the small sample size of the on-

campus (ONC) and the off-campus (OFC) groups, especially when breaking down by instructors. Pearson Correlation coefficients were used to examine the research question. One potential issue is that nine different instructors were examined in this study, including six women and three men. Therefore, after the overall results are presented, they will then be broken down by instructor and gender.

Overall Results.

The means of the two samples on the nonverbal immediacy, verbal immediacy, and five dimensions of credibility were compared using independent sample t-tests. There was not a significant difference between the two groups for nonverbal immediacy (t[222] = 1.89; p = .06). The overall mean scores of the ONC graduate students reported a non-significantly higher score on the perceived nonverbal immediacy scale (m[ONC] = 3.8623; sd = .57512) than the OFC graduate students (m[OFC] = 3.7079; sd = .58973; η^2 =.016 (see Tables 8 and 9). Even though the difference was not significant, the means were in the predicted direction. Therefore, there was not enough evidence for *H1a*.

The overall results showed that on-campus (ONC) students differed significantly in the amount of verbal

immediacy (t[222] = -2.958; p = .003). Specifically, the overall mean scores of the OFC graduate students reported a higher score on the perceived verbal immediacy scale (m[OFC] = 2.3404; sd = 1.12694) than the ONC graduate students (m[ONC]=1.9008; sd = .93298; η^2 =.038. However, as a higher score on the scale is associated with lower perceived levels of immediacy, the off-campus students perceived significantly lower levels of teacher verbal immediacy than the on-campus students, supporting hypothesis 1b.

The overall results for the five dimensions of credibility hypotheses indicate significant differences for the competence and composure dimensions of teacher credibility. Means of the two samples on the five dimensions of credibility were compared using independent sample t-tests, with the overall results showing that on-campus (ONC) students differed significantly in the amount of competence dimension (t[222] = 2.110; p = .036). Specifically, the overall mean scores of the ONC graduate students reported a higher score on the perceived competence credibility dimension scale (m[ONC] = 6.3399; sd = .91203) than the OFC graduate students (m[OFC] = 6.0533; sd = 1.00219; η^2 =.020).

On-campus (ONC) students differed significantly in the amount of perceived instructor composure (t[222] = 3.165; p = .002). The overall mean scores of the ONC graduate students reported a higher score on the perceived composure dimension of credibility scale (m[ONC] = 6.2911; sd = .93426) than the OFC graduate students (m[OFC] = 5.8005; sd = 1.19217; η^2 = .043. (see Tables 8 and 9). Therefore, there is evidence for H2a and H2d.

The results for the other 3 dimensions of credibility were not significant, even though the means were in the predicted direction. There was not a significant difference between the two groups for sociability, extroversion, and character dimensions. Independent sample t-tests showed that on-campus (ONC) students did not differ significantly in the amount of sociability dimension t[222] = 1.819; p = .070). Specifically, the overall mean scores of the ONC graduate students reported a non-significantly higher score on the perceived sociability dimension of credibility scale (m[ONC] = 6.2427; sd = .94838) than the OFC graduate students (m[OFC] = 5.9770; sd = 1.09266; η^2 =.015) (see Tables 8 and 9).

There was not a significant difference between the two groups in the amount of extroversion dimension (t[222] =

.836; *p* = .404). Specifically, the overall mean scores of the ONC graduate students reported a non-significantly higher score on the perceived extroversion dimension of credibility scale (*m*[ONC] = 6.0049; *sd* = 1.06081) than the OFC graduate students (*m*[OFC] = 5.8782; *sd* = 1.09700; η^2 =.003) (see Tables 8 and 9).

There was not a significant difference between the two groups in the amount of character dimension (*t*[222] = 1.716; *p* = .088). Specifically, the overall mean scores of the ONC graduate students reported a non-significantly higher score on the perceived character dimension of credibility scale (*m*[ONC] = 6.1646; *sd* = .87685) than the OFC graduate students (*m*[OFC] = 5.9277; *sd* = 1.04195; η^2 =.013) (see Tables 8 and 9). Therefore, there was evidence for *H2a and H2d* but not for *H2b, H2c, and H2e.* Although the means were in the predicted direction with higher levels in the on-campus condition, they did not reach the traditional significance level of .05.

Pearson correlation coefficients were used to examine the research question. All the correlations showed a positive relationship between the dimensions of immediacy (verbal and nonverbal) and the five dimensions of credibility (competence, sociability, extroversion,

composure and character). The results of all the correlations were significant at the .01 alpha level, except the correlation between nonverbal immediacy and competence for the on-campus condition, which was not significant ($r = .181$; $p > .05$) (see Table 10).

This pattern of results does not suggest that class setting is a moderator for the relationship between immediacy (nonverbal and verbal) and credibility because the variables were related positively in both the on-campus and off-campus classroom settings.

Results by Instructor

The different I-TV instructors make interpreting the overall results potentially problematic, and as such, each of the hypotheses and research question were examined by looking at each instructor separately. Two instructors taught two classes each. These two classes will be combined when examining the results of each instructor. However, the results divided for each individual class for these two instructors are included in the tables (see Tables 11 – 21). Because of the small numbers taught by each instructor, no significant tests will be run. Rather, the results from each instructor will be compared to the overall means to see if the same patterns are found.

For nonverbal immediacy (Table 22), seven out of the nine instructors showed the same pattern as the overall results, with nonverbal immediacy being higher in the on-campus condition. The two exceptions were Seaborne, a female instructor, and Levine, a male instructor.

For verbal immediacy (Table 23), eight out of nine instructors showed lower score (which means higher perceived immediacy) in the on-campus condition. The one exception is Jackpot, a female instructor.

For competence dimension of credibility (Table 24), six out of the nine instructors showed the same pattern as the overall results' higher score on-campus. The three exceptions were Bassett (female), Halley (male), and Levine (male) instructors.

For sociability dimension of credibility (Table 25), eight out of nine instructors showed the same pattern as the overall results with sociability being higher in the on-campus condition. The one exception is Seaborne, a female instructor.

For extroversion dimension of credibility (Table 26), four out of nine instructors showed the same pattern as the overall results with extroversion being higher in the on-campus condition. The five exceptions were Bassett

(female), Seaborne (female), Flushing (female), Jackpot (female), and Levine (male). The large differences for McCall, a (female) instructor, with on-campus students showing higher score, may have influenced the overall results.

For composure dimension of credibility (Table 27), nine out of nine instructors showed the same pattern as the overall results with composure being higher in the on-campus condition. Thus, it is not surprising the overall result for the composure dimension reached significance.

For character dimension of credibility (Table 28), five out of nine instructors showed the same pattern as the overall results with character being higher in the on-campus condition. The four exceptions were Seaborne (female), Jackpot (female), Halley (male) and Levine (male). Due to the different results for the instructors, it is not surprising that the overall results for this variable were not significant.

Research Question One.

The research question “Was classroom setting a moderator for the relationship between immediacy and credibility?” was examined by determining whether the pattern of the correlations for each instructor matched the

overall results. There were a total of twenty correlations for each instructor examined.

For Tipton, a (female) instructor (Table 29), twenty out of twenty correlations were in the predicted direction of the research question (higher immediacy associated with higher credibility in both the on-campus and off-campus conditions) - which means there was no evidence for a moderator effect.

For Halley, a (male) instructor (Table 30), nineteen out of twenty correlations were in the predicted direction of the research question (higher immediacy associated with higher credibility in the off-campus condition) with the exception of nonverbal immediacy and extroversion dimension.

For Bassett, a (female) instructor (Table 31), eighteen out of twenty correlations were in predicted direction of the research question (higher immediacy associated with higher credibility in the off-campus condition) with the exception of nonverbal immediacy and competence dimension and nonverbal immediacy and extroversion.

For Seaborne, a (female) instructor (Table 32), twenty out of twenty correlations were in the predicted direction

of the research question (higher immediacy associated with higher credibility in both the on-campus and off-campus conditions).

For Flushing, a (female) instructor (Table 33), twenty out of twenty correlations were in the predicted direction of the research question (higher immediacy associated with higher credibility in both the on-campus and off-campus conditions).

For Jackpot, a (female) instructor (Table 34), twenty out of twenty correlations were in the predicted direction of the research question (higher immediacy associated with higher credibility in both the on-campus and off-campus conditions)

For McCall, a (female) instructor (Table 35), eighteen out of twenty correlations were in the predicted direction of the research question ((higher immediacy associated with higher credibility in the off-campus condition) with the exception of nonverbal immediacy and competence dimension and nonverbal immediacy and extroversion dimension.

For Levine, a (male) instructor (Table 36), twenty out of twenty correlations were in the predicted direction of the research question (higher immediacy associated with

higher credibility in both the on-campus and off-campus conditions)

For Sanders, a (male) instructor (Table 37), twenty out of twenty correlations were in the predicted direction of the research question (higher immediacy associated with higher credibility in both the on-campus and off-campus conditions). Therefore, it seems consistent across instructors that there was no evidence for a moderator effect.

Results by Gender

Another reason that using the different instructors is problematic is potential instructor gender differences. To examine this possibility, the female and male instructors were collapsed to examine each hypothesis and research question posited. Again, because of the small sample size, the patterns of the results will be examined, rather than whether they were significant.

For the hypotheses regarding immediacy and credibility (Table 38), all the means were in the same direction as the overall results for the female instructors. For the male instructors, six out of the seven were in the same direction as the overall results. The exception was

extroversion showing a higher mean in the off-campus condition.

For the research question (Table 39), for female instructors, twenty out of twenty correlations were in the same direction as the overall results, with higher immediacy being associated with higher credibility.

For male instructors, seventeen out of twenty correlations were in the same direction as the overall results. The exceptions were all for the on-campus students and were the correlations for nonverbal immediacy and competence, nonverbal immediacy and sociability, and verbal immediacy and extroversion.

V. DISCUSSION

The purpose of this study was to examine student perceptions of teacher immediacy and credibility in a distance education context and to what extent does teacher nonverbal and verbal immediacy influence teacher credibility between face-to-face and distance education I-TV settings.

Both the on-campus and off-campus graduate students surveyed in this study took the same courses offered via the I-TV face-to-face and I-TV distance education formats at East Central University. The study specifically focused on master's level graduate classes that are attended face-to-face by graduate students on-campus and broadcast simultaneously to graduate students at seven distant sites. The same study sample and methodology were used to examine the variables of teacher immediacy and credibility between graduate students in an on-campus I-TV face-to-face and off-campus I-TV settings.

This chapter will discuss the research findings and their implications for teachers and students in distance education, distance educators and administrators, distance education and teachers in general. Additionally, this chapter will discuss the contributions and limitations of

this study as well as recommendations for future research.

Overview of Supporting Literature

The growth and advances in educational technologies have provided both access and opportunities for distance learners to achieve academic degrees and certificates. Many institutions now utilize these technologies to expand and link distance education with the traditional face-to-face classroom in offering a combination of same courses taught on campus and broadcast simultaneously to distant students (Moore & Kearsley, 1996). Schrum (1991) notes that “using telecommunications technologies to communicate with geographically distant learners has become part of the new information age” (pp. 41-60). However, despite the increasing demand for distance education and the educational opportunities it provides, distance education still has a second class status compared to traditional face-to-face formats (Souder, 1993). One potential reason for the second class status is that individuals may believe that teacher immediacy and credibility are lower in this classroom setting.

Summary of Research Hypothesis

The primary purpose of this study was to examine whether students’ perceptions of teacher nonverbal and

verbal immediacy was lower in the distance education I-TV classroom than in I-TV face-to-face classroom.

Hypothesis 1a and 1b

The first hypothesis predicted that perceived teacher nonverbal immediacy will be significantly lower in the distance education classroom than in the face-to-face classroom. This hypothesis was not supported even though the means were in the predicted direction. Possibly with greater power (such as with a larger sample size), this finding would have been significant. The second hypothesis that predicted perceived teacher verbal immediacy would be lower in the distance I-TV classroom than in the face-to face I-TV classroom was significant. Therefore, there was a stronger relationship between class format and verbal immediacy (which was large enough to be significant) than class size and nonverbal immediacy (which was in the same direction but was not significant). What is noteworthy about these results is that the literature and supporting studies indicate that distant student have lower expectations regarding teacher nonverbal immediacy behaviors than traditional face-to-face students (e.g., Freitas, Myers, & Avtgis, 1998; Witt & Wheeless, 1999). In these prior studies, verbal immediacy was not significantly

different (Gorham, 1988; Sanders & Wise, 1990; Witt & Wheeless, 2001). However, that is not the case in this present study. Although hypothesis 1b counters prior studies, it lends support to the claim that perceptions of immediacy or physical and psychological closeness are affected not only by a person's nonverbal behaviors but also by their verbal behaviors (Rubin, Palmgreen, & Sypher, 1994).

Furthermore, another factor may account for why perceived verbal immediacy was lower in the distance I-TV classroom. This factor may be due to the technology itself. Occasionally, there is a problem with the audio transmission during lectures which impacts the vocal cues of the instructor. When this occurs, the distant students are affected more than the face-to-face students who can hear and communicate with the instructor without any distortion nor interference with the audio. Thus and perhaps, this might explain why teacher verbal immediacy behaviors maybe more important to the distant students and affected more than nonverbal immediacy in this study.

Hypotheses 2a, 2b, 2c, 2d, and 2e.

Hypotheses 2b and 2e which predicted that perceived teacher competence and composure will be lower in the

distance education I-TV classroom than in the face-to-face I-TV classroom was supported. However, hypotheses 2a, 2c and 2e, which predicted that perceived teacher sociability, extroversion and character respectively will be lower in the distance education I-TV classroom than in the face-to-face I-TV classroom were not significant, even though the means were in the predicted direction. Perhaps with more power, these findings would have also been significant.

For the composure dimension, there was consistent agreement among the instructors with the overall findings reflected for each individual instructor. This provides strong evidence that there was something about the distance setting that led to lower scores on this variable.

For the competence dimension, the findings were not as consistent among instructors, with six instructors mirroring the overall pattern. One instructor, McCall, a (female), showed a particularly large difference and was perceived as much more composed in the on-campus setting. Therefore, this instructor may have had a large impact on the overall results. However, the fact that all five dimensions of credibility showed the overall same pattern of means provides evidence that perceived credibility was lower in the distance condition.

The purpose of this study was to explore the paradox that distance education is perceived to have a secondary status (Souder, 1993), even though there have not been differences found in terms of learning (Fulford & Zhang, 1993; Willis, 1993). This study suggested that one potential reason for the belief that distance education is inferior might be that individuals believe that perceived teacher immediacy and credibility are lower in distance education. These two characteristics are perceived as vital for effective instructor communication.

As noted by Gorham (1988), that immediate instructors are those who communicate closeness, warmth, and overall positive affect towards their students. And according to Murphy and Farr (1993), instructors who employ immediacy behavior strategies to increase perceived teacher immediacy in distance education I-TV classrooms are likely to enhance both student learning and satisfaction in I-TV classes. In addition, credibility is seen as an essential characteristic because “students simply do not accept information from sources lacking credibility” (Beatty & Behke, p. 56) and according to Thweatt & McCroskey, “teachers who are more immediate are perceived as more credible than teachers who are less immediate” (p. 350). In

this study, a consistent pattern emerged, with the distance education students reporting lower immediacy and credibility, although this difference was only strong enough to be significant for verbal immediacy and the composure and competence dimensions of credibility. Therefore, perhaps this provides evidence for why distance education is seen as second-class status if immediacy and credibility are such essential instructor variables.

Research Question

One possibility suggested by this study was that immediacy and credibility are not related the same way in the distance condition. The research question tested this by asking, “Was classroom setting a moderator for the relationship between immediacy and credibility in distance education?” The results indicated no support for this possibility because all the correlations showed a positive relationship between teacher immediacy behaviors (nonverbal and verbal) and the five dimensions of credibility (competence, sociability, extroversion, composure, and character) for both class settings. All were significant at the .01 alpha level, except the correlations between nonverbal immediacy and competence for the on-campus students, which was not significant ($r = .181$; $p > .05$).

This pattern of results does not suggest that classroom setting is a moderator for the relationship between nonverbal and verbal immediacy and dimensions of credibility because the variables were related positively in the on-campus and off-campus classroom settings. This finding gives support to the rationale that “teachers who are more immediate are perceived as more credible than teachers who are less immediate” (Thweatt & McCroskey, 1998, p. 350) and suggests this applies to both face-to-face and distance instruction. Therefore, even if instructors are limited in the amount of immediacy they can communicate in the distance education classroom setting, this variable is still important, and thus, they should still seek to maximize this amount of immediacy behaviors as it is positively related to all the dimensions of credibility.

The Implications Of This Study

Although distance students perceive lower immediacy due to the physical separation of instructor and student, it should not deter instructors from employing immediacy strategies in their lecture in order to enhance closeness and warmth between them and their distance students.

The technology used for distance education should not be seen as threatening the social presence, learning, teaching effectiveness, student satisfaction, motivation and/or immediate expectations of the students. Rather, technology should be embraced and utilized as a means to enhance access, opportunities and most importantly, student learning and obtaining their degrees and professional certification and/or licensing.

In terms of the immediacy and distance education literature, the results of this study have implications for distance education students, instructors and administrators who must decide whether their institutions should offer distance education courses, degree programs and/or certifications. From the students' perspective, distance students may view their distant instructors' teaching effectiveness negatively if they perceive less immediate behaviors from their instructors. This may affect the evaluation of the instructor at the end of the semester. From the instructors' perspective, faculty who teach via distance education may feel discouraged and believe that it is not worth making any efforts in employing immediacy behaviors which may be beneficial to their teaching effectiveness both in the face-to-face and distance

education setting. However, even in distance teaching, immediacy is related to credibility, so faculty should be concerned with immediacy. As noted by Thweatt and McCroskey (1998), ”teachers who are immediate are perceived as more credible than teacher who are less immediate” (p. 350). Faculty should also be encouraged to be part of the instructional design team as partners in designing their course materials. Professional development programs should be provided to faculty engaged in distance education with added incentives such as release time, extra pay, recognition for promotion and tenure, and support from both the technical and administrative staff.

From the administrative perspective, adequate funding should be made available for appropriate equipment upgrades, faculty training and support. Administrators and faculty should work together to determine which courses and programs are best suited for the I-TV instructional format and teaching pedagogies.

The Limitations Of This Study

The limited number and sample size affected the outcome of the results in terms of low power in the choice of significant alpha level of .05 rather than .01 even with a large number of comparisons. In addition, comparing

different instructors meant that the responses were not entirely independent. This limitation could be overcome by doing a longitudinal study of the same instructors and/or have enough instructors to make instructors the unit of analysis rather than the student. Examining other variables such as race, years of teaching experience, and age of instructor would allow for a closer examination of the relationships between immediacy and credibility in distance education. However, a draw back for this type of study will be the uncertainty of the duration of employment of the faculty at the host or distant institution/s.

Another limitation is the “ceiling effect” of all the dimensions of credibility. This social desirability of low expectations in distance education violate expectations which may have led to high scores for the variables.

This study was also limited by the small sample size of the classes. Perhaps future studies could include both undergraduate students and graduate students or compare between graduate and undergraduate students. One could also enlarge the sample by including other major universities and students enrolled in their distance education I-TV programs and formats.

The results of this study are based on two methods of

instruction utilized to examine and compare the research questions posited in this study (i.e., the East Central University (ECU) on-campus I-TV face-to-face classroom setting and seven of ECU's off-campus I-TV distance site classrooms). Thus, the results may not be generalized to a University with other distance instructional methods (e.g., audioconferencing, WebCT, CMC, satellite teleconference, etc.). This study does add to prior research which has examined these methods. In addition, it examines a very advanced form of distance instruction (I-TV) and shows that immediacy and credibility are still be lower, that even this advanced technology is not equivalent to face-to-face instruction in regards to these important variables. The methods of instruction provides future researchers with a framework or springboard for examining other variables (e.g., classroom environment, background noise, technical difficulties, etc.) and their impact on students' perceptions on teacher credibility.

Another limitation considered in this study is the specific use of graduate students and graduate courses. Graduate students are more likely than undergraduates to take the contexts of I-TV face-to-face and distance education seriously and therefore may be more motivated and

satisfied in this instructional context. However, most of the studies in distance education are geared towards undergraduate students and courses. Thus, a replication of this study comparing both undergraduate and graduate students and courses will provide an abundance of information to draw solid conclusions and generalizations within the scope of this study.

Further limitation of this study is the composition of the demographics of the study, specifically the female population surveyed. Of the total number (N = 224) participants, 67% of the population were females (n = 152) compared to 32% of the male respondents (n = 72). One would question if a more representative sample (e.g., a balance male/female ratio), would have affected the results. Future research with equal male/female populations might provide us with the answer.

This study looked only at graduate students registered at a small regional university and their designated receive sites in a Southeastern State and was a convenience sample. Results may not be generalizable to other distance education institutions in other sections of the country.

Recommendations for Future Studies

Based on the results and conclusions of this study, the following recommendations for additional research is offered: Studies should be conducted to examine perceived differences between distance education students, distance education instructors, and administrators of distance education programs with regard to the effectiveness of distance education programs.

An additional recommendation could be in the type of delivery systems and technical equipment of the off-campus distance site classrooms. Granted all the seven off-campus site I-TV classrooms have similar and compatible systems (i.e., an IP based H.323 full-motion two-way compressed audio, video, and data system) with the on-campus I-TV classrooms, however, not all distance site classrooms have the same technical advantages compared with the ECU on-campus classroom (e.g., videotape and audiotape duplicating machines, control rooms equipped with monitoring devices such as 9 inches TV monitors, copying machines, electronic white boards, etc). Thus, generalization to other distance site I-TV classrooms is limited.

Contributions Of This Dissertation

This dissertation expands past findings related to the relationship between perceived nonverbal and verbal teacher immediacy and credibility by comparing the same instructors engaged in face-to-face and distance education. Although prior research shows little or no significant difference in student learning between student's on-campus face-to-face and distance education contexts, ECU I-TV instructors may be able to use this information to improve their immediacy behavior strategies as immediacy was still positively related to perceived teacher credibility, even in the distance setting. Additionally, these findings can provide information to university administrators and leaders that may be useful in making strategic decisions about their mission, vision, structures, processes, and delivery systems related to distance education (Linder, Dooley, & Murphy, 2001). The findings of this study contribute to the growing body of literature related to identifying teacher immediacy strategies that impact the dimensions of teacher credibility in face-to-face and mediated instructional contexts.

Endnotes

[1]Eye contact to the distant site students in a non face-to-face instructional setting is communicated through the camera in the classroom. During the class session, the instructor talks to the distant students by looking directly at the camera lens mounted on the wall in front of the classroom.

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APPENDICES

APPENDIX A

RESEARCH QUESTIONNAIRE

The following questions are designed to determine your perceptions of teacher immediacy behaviors and attitude about the dimensions of teacher credibility of the instructor of your I-TV class. The survey should take you approximately 30 minutes to complete. Please put the completed survey in the envelope provided, seal it and return the envelope to the survey facilitator.

THANK YOU for participating in this research project. If you have any questions, you may reach me, Stanley Nnochirionye, the principal investigator at (580)332-8000 ext. 622 or by contacting the Department of Communication, 101 Burton Hall, The University of Oklahoma, Norman, OK 73019. Phone: (405)325-3111.

PART 1:

The following questions are about your personal, academic, and professional background. Please mark in the spaces below the following questions applicable to you.

1. Age: _____

2. Gender:

    1. Male _____
    2. Female _____

1. Race:

    1. White American _____
    2. African American _____
    3. Hispanic American _____
    4. Native American _____
    5. Asian American _____
    6. Other (Specify) _____

4. Location of Your Residence:

   1. Urban _____
   2. Suburb _____
   3. Rural _____

5. Year in School:

   1. 1st Year Graduate Student_____
   2. 2nd Year Graduate Student _____
   3. Other _____

6. Indicate Your Professional Occupation:_____

7. Method of Instruction:

   1. On-Campus I-TV Face-to-Face Classroom _____

   2. Off-Campus I-TV Distance Classroom _____

PART 11:

8. Student attitudes or evaluations of their instructors can be based on the following dimensions of credibility: Competence, Sociability, Extroversion, Character, and Composure. You are asked to evaluate your instructor in terms of the adjectives for each item. On the scales below, please indicate your feelings about your present Instructional television (I-TV) instructor.

   INSTRUCTIONS: Please circle the number between the adjectives which best represents your feelings about this instructor.
   1 and 7 indicate a *very strong feeling*
   2 and 6 indicate a *strong feeling*
   3 and 5 indicate a *fairly weak feeling*
   4 indicates you are *undecided*

My Instructor in this course is:

1. Expert	1	2	3	4	5	6	7	Inexpert
2. Unintelligent	1	2	3	4	5	6	7	Intelligent

3.	Intellectual	1	2	3	4	5	6	7 Narrow
4.	Good-natured	1	2	3	4	5	6	7 Irritable
5.	Cheerful	1	2	3	4	5	6	7 Gloomy
6.	Unfriendly	1	2	3	4	5	6	7 Friendly
7.	Timid	1	2	3	4	5	6	7 Bold
8.	Verbal	1	2	3	4	5	6	7 Quiet
9.	Talkative	1	2	3	4	5	6	7 Silent
10.	Dishonest	1	2	3	4	5	6	7 Honest
11.	Unsympathetic	1	2	3	4	5	6	7 Sympathetic
12.	Good	1	2	3	4	5	6	7 Bad
13.	Poised	1	2	3	4	5	6	7 Nervous
14.	Tense	1	2	3	4	5	6	7 Relaxed
15.	Calm	1	2	3	4	5	6	7 Anxious

9. Immediate behaviors are those communication behaviors that reduces distance between people. These behaviors may actually decrease the physical or psychological distance between an instructor and his/her students. The more immediate a person is, the more likely he/she is to communicate at close distances, smile, engage in eye contact, use direct body orientations, use overall body movement and gestures, touch others, relax, and be vocally expressive. In other words, we might say that an immediate person is perceived as overtly friendly and warm.

   INSTRUCTIONS: Please circle the number that corresponds to the word that best describes your agreement with the following statements:

In your opinion, the teaching style of your I-TV instructor is very immediate.

1.	Agree	1	2	3	4	5	6	7Disagree
2.	False	1	2	3	4	5	6	7 True
3.	Incorrect	1	2	3	4	5	6	7 Correct
4.	Wrong	1	2	3	4	5	6	7 Right
5.	Yes	1	2	3	4	5	6	7 No

10. Please circle the number that corresponds to the word that best describes the teaching style of your I-TV instructor.

1.	Immediate	1	2	3	4	5	6	7 Not Immediate
2.	Cold	1	2	3	4	5	6	7 Warm
3.	Unfriendly	1	2	3	4	5	6	7 Friendly
4.	Close	1	2	3	4	5	6	7 Distant

11. Below is a series of descriptions of things some instructors (teachers) have been observed doing in some classes.

INSTRUCTIONS: Please respond to the terms *in terms of the I-TV class you are taking now*. For each item, please indicate on a scale of 0 - 4 below how often your instructor in this class engages in those behaviors. (*Please circle one item per question*).

My instructor in this course:	**Never**	**Rarely**	**Occasionally**	**Often**	**Very Often**
1. Sits behind desk while teaching.	0	1	2	3	4
2. Gestures while talking to the class.	0	1	2	3	4

3. Uses monotone/ dull voice when talking to the class.	0	1	2	3	4
4. Looks at the class while talking.	0	1	2	3	4
5. Smiles at the class while talking.	0	1	2	3	4
6. Has a very tense body position while talking to the class.	0	1	2	3	4
7. Touches students in the class.	0	1	2	3	4
8. Moves around the classroom while teaching.	0	1	2	3	4
9. Sits on a desk in a chair while teaching.	0	1	2	3	4
10. Looks at board or notes while talking to the class.	0	1	2	3	4
11. Stands behind podium or desk while teaching.	0	1	2	3	4
12. Has a very relaxed body position while talking to the class.	0	1	2	3	4

13. Smiles at individual students in the class.	0	1	2	3	4
14. Uses a variety of vocal expressions when talking to class.	0	1	2	3	4

Please put your completed questionnaire in the envelope provided, SEAL IT and return the envelope to the survey facilitator. THANK YOU for your participation.

*Indicates reverse coding on dimensions of credibility scale

*Question 2 = Unintelligent/Intelligent
*Question 3 = Intellectual/Narrow
*Question 9 = Talkative/Silent
*Question 15 = Calm/Anxious

TABLES

Table 1

List of East Central University Master's Graduate Degrees

Certificate Programs – Spring 2002

Master of Education	Master of Psych Services	Master of Human Resources	Programs and Certification
Elementary Education	Psychological Services	Counselor	Library/ Media Specialist
Elementary School Counselor		Human Resources	School Supt.
Elementary School Principal		Rehabilitation Counselor	School Psychologist
Library Media		Vocational Evaluation and Work Adjustment Counselor	School Psychometrist
Reading		Criminal Justice	
Secondary Education			
Educational Technology			
Sports Administration			
Secondary School Counselor			
Secondary School Principal			
Special Education			

Source: East Central University 2001-2002 Catalog

Table 2

East Central University Distance Education On-Campus and Off-Campus Sites with Student Enrollments – Spring 2002

Name of Institution	Total Enrollment ONC	OFC
East Central University, Ada	79	
Ardmore Higher Education Center, Ardmore		43
Duncan Higher Education Center, Duncan		6
Southeastern Oklahoma State University, Durant		7
McCurtain County Higher Education Center, Idabel		5
Eastern Oklahoma State College, McAlester Campus		38
Gordon Cooper Technology Center, Shawnee		44
Eastern Oklahoma State College, Wilburton		2
	79	145

Table 3

East Central University Distance Education Graduate Courses with Applicable Degrees and Certifications - Spring 2002

Graduate Course Title	Master's Degrees	Certification
Strategies with Behavior Disorder	M.Ed. Elementary Education	School Psych.
Techniques of Research	M.Ed. Elementary Education M.Ed. Secondary Education M.Ed. Secondary Principal M.Ed. Elementary Principal M.Ed. Elementary Counselor M.Ed. Secondary Counselor M.Ed. Library Media Specialist M.Ed. Special Education	N/A
Educational Aspects of Exceptional Child	M.Ed. Secondary Education	School Psych.
Introduction to Counseling	M.Ed. Secondary Principal M.Ed. Elementary Counselor M.Ed. Secondary Counselor	School Psych.
Introduction to Students with Moderate Disorders	M.Ed. Special Education	N/A
Public School Finance	M.Ed. Elementary Principal M.Ed. Secondary Principal	N/A
The Principalship	M.Ed. Elementary Principal M.Ed. Secondary Principal	N/A
Legal Aspects of Education	M.Ed. Elementary Principal M.Ed. Secondary Principal	N/A
Advanced Teaching of Transitional Skills	M.Ed. Secondary Education	N/A
Career and Lifestyle Development	M.Ed. Elementary Counselor M.Ed. Secondary Counselor	N/A
School Library Administration	M.Ed. Library Media Specialist	N/A
Reference Materials	M.Ed. Library Media Specialist	N/A

Source: East Central University 2001-2002 Catalog

Table 4

East Central University Distance Education I-TV Instructors, Graduate Courses/Numbers, and Enrollments - Spring 2002

I-TV *Instructors	Graduate Numbers and Course Titles	Survey #s On-campus	Sample #s On-campus	Survey #s Off-campus	Sample #s Off-campus
Dr. Bassett	EDUC 5983: Strategies with Behavior Disorder	5	5	Ardmore = 3 McAlester = 4 Shawnee = 2	2 2 1
Dr. Seaborne	EDUC 5113: Techniques of Research	11	10	Shawnee = 11	10
Dr. Flushing	EDUC 5413: Educational Aspects of Exceptional Child	12	6	Duncan = 4 McAlester = 6 Shawnee = 8	4 3 5
Dr. Halley	EDUC 5023: Introduction to Counseling	3	3	Ardmore = 11 McAlester= 6	11 5
Dr. Halley	EDUC 5123: Introduction to Students with Moderate Disorders	9	5	Ardmore = 4 McAlester = 3	3 3
Mr. Levine	EDUC 5573: Public School Finance	6	4	Ardmore = 10 Duncan = 6 Shawnee = 10	8 3 8
Ms. Jackpot	EDUC 5623: The Principalship	12	10	Ardmore = 3 McAlester = 4 Shawnee = 4	3 3 4
Dr. Sanders	EDUC 5583: Legal Aspects of Education	12	10	Ardmore = 10 McAlester = 6 Shawnee = 10	10 6 9
Dr. McCall	HURES 5633: Career and Lifestyle Development	13	10	Ardmore = 7 McAlester = 7 Shawnee = 6	6 5 6
Dr. Tipton	LIBSC 5113: School Library Administration	10	8	Durant = 5 Idabel = 5 McAlester = 7 Wilburton = 2	3 4 5 1
Dr. Tipton	LIBSC 5233: Reference Materials	8	8	Durant = 5 Idabel = 4 McAlester = 6 Wilburton = 2	4 2 5 1
	Totals	101	79	181	145

*Fictitious names for reasons of confidentiality

Table 5

East Central University I-TV Instructors' Demographics

*I-TV Instructor	Years of Teaching Experience	Age	Gender	Race
Dr. Bassett	7	43	Female	White American
Dr. Seaborne	8	62	Female	Native American
Dr. Flushing	7	44	Female	Pacific Islander
Dr. Jackpot	2	43	Female	White American
Dr. McCall	5	50	Female	White American
Dr. Tipton	8	52	Female	White American
Dr. Halley	11	51	Male	White American
Mr. Levine	3	41	Male	White American
Dr. Sanders	9	51	Male	White American

*Fictitious names for reasons of confidentiality

Table 6

Percentage of Participants at Each Site (ONC and OFC).

	Frequency	Percent	Valid Percent	Cumulative Percent
Ada	79	35.3	35.3	35.3
Ardmore	43	19.2	19.2	54.5
Duncan	6	2.7	2.7	57.1
Durant	7	3.1	3.1	60.3
Idabel	5	2.2	2.2	62.5
McAlester	38	17.0	17.0	79.5
Shawnee	44	19.6	19.6	99.1
Wilburton	2	.9	.9	100.0
Total	224	100.0	100.0	
Missing	0	0.0		
Total	224	100.0		

Table 7

Participants' Age, Gender and Race for I-TV On-campus (ONC) and Off-campus (OFC) Graduate Students – Spring 2002

Age	N ONC (%)	N OFC (%)	Total
21-30	29 (13.1%)	42 (19.0%)	32.1%
31-40	32 (14.5%)	48 (21.7%)	36.2%
41-50	15 (6.8%)	42 (19.0%)	25.8%
51-60	2 (2.9%)	11 (7.7%)	5.9%
Missing	1 (.4%)	2 (0.9%)	0.0%
Total	78 (35.3%)	143 (64.7%)	100% (n=221)
Gender			
Male	29 (12.9%)	43 (19.2%)	32.1%
Female	50 (22.3%)	102 (45.5%)	67.9%
Missing	0 (0%)	0 (0%)	0.0%
Total	79 (100%)	145	100% (n=224)
Race			
Caucasian American	64 (28.6%)	121 (54.0%)	82.6%
African American	1 (.4%)	10 (4.9%)	4.9%
Hispanic American	3 (1.3%)	0 (.0%)	1.3%
Native American	9 (4.0%)	13 (5.8%)	9.8%
Asian American	0 (.0%)	1 (.4%)	.4%
Caucasian/African Am.	1 (.4%)	0 (.0%)	.4%
Caucasian/Native Am.	1 (.4%)	0 (.0%)	.4%
Missing	0 (0%)	0 (.0%)	100%
Total	79 (100%)	163 (100%)	

Table 8

Overall Mean Scores by Group on Nonverbal Immediacy, Verbal* Immediacy, Competence, Sociability, Extroversion, Composure, and Character Dimensions of Teacher Credibility.

	On-campus			Off-campus		
	N	Mean	*SD*	N	Mean	*SD*
Nonverbal Immediacy	79	3.8623	.57512	145	3.7079	.58973
Verbal* Immediacy	79	1.9008	.93298	145	2.3404	1.12694
Competency	79	6.3399	.91203	145	6.0533	1.00219
Sociability	79	6.2427	.94838	145	5.9770	1.09266
Extroversion	79	6.0049	1.06081	145	5.8782	1.09700
Composure	79	6.2911	.93426	145	5.8005	1.19217
Character	79	6.1646	.87685	145	5.9277	1.04195

*Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 9

Overall T-tests by group of mean differences on Nonverbal and Verbal*** Immediacy and Credibility dimensions.

	t	*df*	Significant (2-tailed)	η^2
Nonverbal Immediacy				
Equal Variances Assumed	1.890	222	.060	.016
Verbal*** Immediacy				
Equal Variances Assumed	-2.958	222	.003*	.038
Competence				
Equal Variances Assumed	2.110	222	.036**	.020
Sociability				
Equal Variances Assumed	1.819	222	.070	.015
Extroversion				
Equal Variances Assumed	.836	222	.404	.003
Composure				
Equal Variances Assumed	3.165	222	.002*	.043
Character				
Equal Variances Assumed	1.716	222	.088	.013

*Indicates significance at the .01 level.

** Indicates significance at the .05 level.

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 10

Overall Correlations between Nonverbal/Verbal*** Immediacy and Dimensions of Credibility by group.

	On-campus			Off-campus		
	N	Correlations	*p*-Value	N	Correlations	*p*-Value
Nonverbal/ Competence	79	.181	.111	145	.435**	.000
Nonverbal/ Sociability	79	.556**	.000	145	.639**	.000
Nonverbal/ Extroversion	79	.322**	.004	145	.368**	.000
Nonverbal/ Composure	79	.643**	.000	145	.531**	.000
Nonverbal/ Character	79	.465**	.000	145	.595**	.000
Verbal***/ Competence	79	-.339**	.002	145	-.570**	.000
Verbal***/ Sociability	79	-.635**	.000	145	-.706**	.000
Verbal***/ Extroversion	79	-.359**	.001	145	-.373**	.000
Verbal***/ Composure	79	-.640**	.000	145	-.568**	.000
Verbal***/ Character	79	-.631**	.000	145	-.674**	.000

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy

Table 11

I-TV Class (LIBSC 5113) Correlations between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility by group for instructors with more than one class.

	On-campus			Off-campus		
	N	Correlations	p-Value	N	Correlations	p-Value
Ins: Tipton	10			14		
Nonverbal/ Competence	10	.500**	.000	14	.466	.093
Nonverbal/ Sociability	10	.890**	.001	14	.472	.088
Nonverbal/ Extroversion	10	.471	.170	14	.450	.106
Nonverbal/ Composure	10	.822**	.004	14	.391	.167
Nonverbal/ Character	10	.916**	.000	14	.525	.054
Verbal***/ Competence	10	-.645*	.044	14	-.732**	.003
Verbal***/ Sociability	10	-.969**	.000	14	-.770**	.001
Verbal***/ Extroversion	10	-.455	.186	14	-.605*	.022
Verbal***/ Composure	10	-.759*	.011	14	-.550*	.041
Verbal***/ Character	10	-.962**	.000	14	-.746**	.000

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 12

I-TV Class (LIBSC 5233) Correlations between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility by group for instructors with more than one class.

	On-campus			Off-campus		
	N	Correlations	*P*-Value	N	Correlations	*P*-Value
Ins: Tipton						
Nonverbal/ Competence	8	.554	.155	11	.739**	.009
Nonverbal/ Sociability	8	.643	.085	11	.704**	.016
Nonverbal/ Extroversion	8	.620	.101	11	.651*	.030
Nonverbal/ Composure	8	.552	.156	11	.802**	.003
Nonverbal/ Character	8	.602	.114	11	.794**	.004
Verbal***/ Competence	8	-.925**	.001	11	-.755**	.007
Verbal***/ Sociability	8	-.815**	.014	11	-.902**	.000
Verbal***/ Extroversion	8	-.416	.305	11	-.738**	.010
Verbal***/ Composure	8	-.845**	.008	11	-.924**	.000
Verbal***/ Character	8	-.907**	.002	11	-.827**	.002

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 13

I-TV Class (EDUC 5023) Correlations between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility by group for instructors with more than one class.

	On-campus			Off-campus		
	N	Correlations	*P*-Value	N	Correlations	*P*-Value
Ins: Halley	3			14		
Nonverbal/ Competence	3	-.305	.802	14	.395	.163
Nonverbal/ Sociability	3	-.672	.531	14	.732**	.003
Nonverbal/ Extroversion	3	.672	.531	14	-.320	.265
Nonverbal/ Composure	3	-.305	.802	14	.640*	.014
Nonverbal/ Character	3	-.741	.469	14	.720**	.004
Verbal***/ Competence	3	.297	.808	14	-.496	.071
Verbal***/ Sociability	3	.679	.525	14	-.903**	.000
Verbal***/ Extroversion	3	-.679	.525	14	.212	.468
Verbal***/ Composure	3	.297	.808	14	-.551*	.041
Verbal***/ Character	3	.735	.475	14	-.738**	.003

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 14

I-TV Class (EDUC 5123) Correlations between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility by group for instructors with more than one class.

	On-campus			Off-campus		
	N	Correlations	*P*-Value	N	Correlations	*P*-Value
Ins: Halley	4			7		
Nonverbal/ Competence	4	.090	.910	7	.364	.422
Nonverbal/ Sociability	4	-.375	.625	7	.493	.261
Nonverbal/ Extroversion	4	.805	.195	7	.501	.252
Nonverbal/ Composure	4	.822	.178	7	.117	.803
Nonverbal/ Character	4	-.044	.956	7	.460	.298
Verbal***/ Competence	4	.724	.276	7	-.675	.096
Verbal***/ Sociability	4	.955*	.045	7	-.842*	.017
Verbal***/ Extroversion	4	-.038	.962	7	-.738	.058
Verbal***/ Composure	4	-.078	.922	7	-.956**	.001
Verbal***/ Character	4	.805	.195	7	-.791*	.034

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 15

T-tests, Means and Standard Deviations of I-TV Class on Nonverbal Immediacy by group for instructors with more than one class.

I-TV Class	On-campus N	Mean	*SD*	Off-campus N	Mean	*SD*	*t*	*P*-Value
LIBSC 5113	10	3.6625	.79068	14	3.4750	.54247	.509	.616
LIBSC 5233	8	3.7344	.59175	11	3.4091	.58920	1.186	.252
EDUC 5023	3	4.0417	.59073	14	3.7537	.71933	.643	.530
EDUC 5123	4	3.5625	.31458	7	3.7321	.65918	-.476	.645

Table 16

Means and Standard Deviations of I-TV Class on Verbal*** Immediacy by group for instructors with more than one class.

I-TV Class	On-campus N	On-campus Mean	On-campus *SD*	Off-campus N	Off-campus Mean	Off-campus *SD*	*t*	*Sig.*
LIBSC 5113	10	2.2444	.52504	14	2.7540	1.27596	-.851	.404
LIBSC 5233	8	2.2083	.87577	11	.32298	1.07122	-.469	.645
EDUC 5023	3	1.5926	.75632	14	2.3261	1.35398	-.894	.386
EDUC 5123	4	2.8889	1.04231	7	3.1429	1.13260	-.367	.722

Table 17

Means and Standard Deviations of I-TV Class on Competence Dimension by group for instructors with more than one class.

I-TV Class	On-campus N	Mean	*SD*	Off-campus N	Mean	*SD*	*t*	*Sig.*
LIBSC 5113	10	6.6000	.66295	14	5.4524	1.48270	2.279	.033
LIBSC 5233	8	6.0000	.83571	11	6.1569	.87527	-.393	.699
EDUC 5023	3	6.4444	.96225	14	6.2143	.75795	.459	.653
EDUC 5123	4	5.6667	.98131	7	5.9048	1.15011	-.346	.737

Table 18

Means and Standard Deviations of I-TV Class on Sociability Dimension by group for instructors with more than one class.

I-TV Class	On-campus N	Mean	*SD*	Off-campus N	Mean	*SD*	*t*	*Sig.*
LIBSC 5113	10	5.7333	1.65403	14	5.6190	1.53510	.174	.863
LIBSC 5233	8	6.1250	.83452	11	6.0606	.75745	.175	.863
EDUC 5023	3	6.2222	.19245	14	6.0238	1.07389	.311	.760
EDUC 5123	4	6.0000	1.41421	7	5.5714	1.08379	.568	.584

Table 19

Means and Standard Deviations of I-TV Class on Extroversion Dimension by group for instructors with more than one class.

I-TV Class	On-campus N	Mean	*SD*	Off-campus N	Mean	*SD*	*t*	*Sig*
LIBSC 5113	10	6.3667	.69300	14	5.5238	1.05987	2.195	.039
LIBSC 5233	8	5.5833	.90414	11	5.6667	1.39044	-.148	.884
EDUC 5023	3	6.7778	.19245	14	5.9762	1.12823	1.197	.250
EDUC 5123	4	5.5833	.63099	7	5.9048	1.06657	-.543	.600

Table 20

Means and Standard Deviations of I-TV Class on Composure Dimension by group for instructors with more than one class.

I-TV Class	On-campus n	Mean	*SD*	Off-campus n	Mean	*SD*	*t*	*Sig*
LIBSC 5113	10	5.7333	1.34990	14	5.2857	1.41335	.779	.444
LIBSC 5233	8	6.0417	.95015	11	5.5152	1.02593	1.153	.271
EDUC 5023	3	6.8889	.19245	14	6.1241	.95166	1.353	.196
EDUC 5123	4	5.6667	1.8274	7	5.0000	1.71053	.608	.558

Table 21

Means and Standard Deviations of I-TV Class on Character Dimension by group for instructors with more than one class.

I-TV Class	On-campus N	Mean	*SD*	Off-campus N	Mean	*SD*	*t*	*Sig.*
LIBSC 5113	10	5.8333	1.10275	14	5.5952	1.24158	.485	.633
LIBSC 5233	8	5.9583	.96671	11	5.6061	1.16255	.698	.495
EDUC 5023	3	6.6667	.33333	14	6.2734	.90495	.726	.479
EDUC 5123	4	5.2500	.50000	7	5.3810	1.35303	.183	.859

Table 22

Means and Standard Deviations of I-TV Instructor on Nonverbal Immediacy by group.

			On-campus			Off-campus	
Instructor	N	Gender	Mean	*SD*	N	Mean	*SD*
Bassett	5	Female	4.0000	.57960	5	3.7250	.46267
Seaborne	10	Female	3.8625	.83842	10	3.9875	.51184
Flushing	7	Female	3.5714	.66088	15	3.4917	.48289
Jackpot	9	Female	4.0278	.39419	10	3.9125	.65099
McCall	9	Female	4.1944	.25087	15	3.6083	.61577
Tipton	18	Female	3.6944	.69030	25	3.4750	.54247
Halley	7	Male	3.7679	.48104	21	3.7465	.68323
Levine	4	Male	3.9063	.18750	22	3.9358	.46331
Sanders	10	Male	3.9000	.42817	22	3.6989	.65427
Total	79				145		

Note: ONC (N=79) + **OFC (N=145)** = Total N = 224.

*Indicates significance at .01 level

In this sample (**bold-faced**), 7 out of 9 instructors had a lower nonverbal immediacy in the off-campus classroom.

Table 23

Means and Standard Deviations of I-TV Instructor on Verbal*** Immediacy by group.

			On-campus			Off-campus	
Instructor	N	Gender	Mean	*SD*	N	Mean	*SD*
Bassett	5	Female	1.4889	.67403	5	1.9333	.71406
Seaborne	10	Female	1.7998	.97529	10	1.9222	.66882
Flushing	7	Female	2.1270	.82509	15	2.4222	1.37321
Jackpot	9	Female	1.8146	.80326	10	1.6889	.73666
McCall	9	Female	1.4843	.38656	15	2.1185	1.1634
Tipton	18	Female	2.2284	1.33250	25	2.6093	1.17802
Halley	7	Male	2.3333	1.10181	21	2.5984	1.31609
Levine	4	Male	1.9722	.70492	22	2.3440	.84536
Sanders	10	Male	1.5805	.31471	22	2.4593	1.24303
Total	79				145		

ONC (N=79) + OFC (N=145) = Total N = 224.

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 24

Means and Standard Deviations of I-TV Instructor on Competence Dimension by group.

			On-campus			Off-campus	
Instructor	N	Gender	Mean	*SD*	N	Mean	*SD*
Bassett	5	Female	6.4000	.68313	5	6.5333	.44721
Seaborne	10	Female	6.7667	.41722	10	6.2667	.79815
Flushing	7	Female	6.3810	.75593	15	6.1333	.94112
Jackpot	9	Female	6.4815	.68943	10	6.2667	1.27463
McCall	9	Female	6.2963	.61111	15	5.9333	1.12828
Tipton	18	Female	6.3333	.78382	25	5.7624	1.27961
Halley	7	Male	6.0000	.98131	21	6.1111	.89028
Levine	4	Male	5.9634	.51003	22	6.1364	.67971
Sanders	10	Male	6.1667	1.84089	22	5.9697	1.05865
Total	79				145		

ONC (N=79) + OFC (N=145) = Total N = 224.

Table 25

Means and Standard Deviations of I-TV Instructor on Sociability Dimension by group.

			On-campus			Off-campus	
Instructor	N	Gender	Mean	*SD*	N	Mean	*SD*
Bassett	5	Female	6.6000	.43461	5	5.7333	1.06458
Seaborne	10	Female	6.5667	.54546	10	6.6667	.58794
Flushing	7	Female	5.9048	1.19744	15	5.6889	1.12311
Jackpot	9	Female	6.2963	.73493	10	6.2667	1.10889
McCall	9	Female	6.5556	.57735	15	5.9556	1.16746
Tipton	18	Female	5.9074	1.33238	25	5.8133	1.25122
Halley	7	Male	6.0952	1.01314	21	5.8730	1.07226
Levine	4	Male	6.7099	.39095	22	6.1667	.73283
Sanders	10	Male	6.1667	.93294	22	5.8939	1.30277
Total	79				145		

ONC (N=79) + OFC (N=145) = Total N = 224.

Table 26

Means and Standard Deviations of I-TV Instructor on Extroversion Dimension by group.

			On-campus			Off-campus	
Instructor	N	Gender	Mean	SD	N	Mean	SD
Bassett	5	Female	5.3333	1.56347	5	6.0000	1.54560
Seaborne	10	Female	5.8667	1.27850	10	6.3333	1.28620
Flushing	7	Female	5.8571	1.11981	15	5.9556	.98292
Jackpot	9	Female	6.1852	.91456	10	6.2333	1.10050
McCall	9	Female	6.8889	.16667	15	5.8444	.98292
Tipton	18	Female	6.0185	.86676	25	5.5867	1.19133
Halley	7	Male	6.0952	.78680	21	5.9524	1.08159
Levine	4	Male	5.0833	1.64148	22	6.1212	.50965
Sanders	10	Male	5.9058	1.09541	22	5.4697	1.33198
Total	79				145		

ONC (N=79) + OFC (N=145) = Total N = 224.

Table 27

Means and Standard Deviations of I-TV Instructor on Composure Dimension by group.

			On-campus			Off-campus	
Instructor	N	Gender	Mean	SD	N	Mean	SD
Bassett	5	Female	6.8000	.44721	5	6.1333	.96032
Seaborne	10	Female	6.5000	.74120	10	6.1667	.93294
Flushing	7	Female	5.8571	1.03382	15	5.8000	.88909
Jackpot	9	Female	6.2593	.81271	10	5.8333	1.73027
McCall	9	Female	6.8148	.24216	15	5.8222	1.01471
Tipton	18	Female	5.8704	1.16674	25	5.3867	1.23858
Halley	7	Male	6.1905	1.45114	21	5.7494	1.32715
Levine	4	Male	6.1667	.88192	22	6.0455	.72954
Sanders	10	Male	6.5667	.52234	22	5.8030	1.54186
Total	79				145		

ONC (N=79) + OFC (N=145) = Total N = 224.

Table 28

Means and Standard Deviations of I-TV Instructor on Character Dimension by group.

			On-campus			Off-campus	
Instructor	N	Gender	Mean	SD	N	Mean	SD
Bassett	5	Female	6.4667	.60553	5	6.0000	.57735
Seaborne	10	Female	6.2667	.89993	10	6.4667	.65168
Flushing	7	Female	6.0952	1.11744	15	6.0704	.78861
Jackpot	9	Female	6.0741	.70273	10	6.3000	1.29052
McCall	9	Female	6.6667	.44096	15	5.5333	1.34990
Tipton	18	Female	5.8889	1.01621	25	5.6000	1.18243
Halley	7	Male	5.8571	.85758	21	5.9759	1.12576
Levine	4	Male	5.7500	1.66389	22	5.9091	.81118
Sanders	10	Male	6.4667	.39126	22	6.0135	.96098
Total	79				145		

Table 29

I-TV Instructor (**Dr. Tipton**) Correlations by group between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility for instructors with more than one class.

	On-campus			Off-campus		
	N	Correlations	*P*-Value	N	Correlations	*P*-value
Ins: Tipton	18			25		
Nonverbal/ Competence	18	.444	.065	25	.478*	.016
Nonverbal/ Sociability	18	.820**	.000	25	.474*	.017
Nonverbal/ Extroversion	18	.432	.073	25	.545**	.005
Nonverbal/ Composure	18	.742**	.000	25	.521**	.008
Nonverbal/ Character	18	.808**	.000	25	.639**	.001
Verbal***/ Competence	18	-.622**	.006	25	-.733**	.000
Verbal***/ Sociability	18	-.934**	.000	25	-.787**	.000
Verbal***/ Extroversion	18	-.351	.153	25	-.651**	.000
Verbal***/ Composure	18	-.767**	.000	25	-.672**	.000
Verbal***/ Character	18	-.923**	.000	25	-.768**	.000

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 30

I-TV Instructor (**Dr. Halley**) Correlations by group between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility for instructors with more than one class.

	On-campus			Off-campus		
	N	Correlations	*P*-Value	N	Correlations	*P*-value
Ins: Halley	7			21		
Nonverbal/ Competence	7	.479	.065	21	.368	.100
Nonverbal/ Sociability	7	.607**	.000	21	.649**	.001
Nonverbal/ Extroversion	7	.542	.073	21	-.085	.715
Nonverbal/ Composure	7	.648**	.000	21	.364	.105
Nonverbal/ Character	7	.224	.000	21	.562**	.008
Verbal***/ Competence	7	-.427**	.006	21	-.558**	.009
Verbal***/ Sociability	7	-.704**	.000	21	-.886**	.000
Verbal***/ Extroversion	7	-.532	.153	21	-.050	.830
Verbal***/ Composure	7	-.569**	.000	21	-.705**	.000
Verbal***/ Character	7	-.584**	.000	21	-.757**	.000

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy

Table 31

I-TV Instructor (**Dr. Bassett**) Correlations by group between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility for instructors with more than one class.

	On-campus			Off-campus		
	N	Correlations	*P*-Value	N	Correlations	*P*-Value
Ins: Bassett	5			5		
Nonverbal/ Competence	5	.237	.701	5	-.977**	.004
Nonverbal/ Sociability	5	.868	.056	5	.914*	.030
Nonverbal/ Extroversion	5	.621	.264	5	-.015	.981
Nonverbal/ Composure	5	.964**	.008	5	.549	.338
Nonverbal/ Character	5	.564	.322	5	.585	.300
Verbal***/ Competence	5	-.692	.196	5	.081	.897
Verbal***/ Sociability	5	-.936*	.019	5	.129	.836
Verbal***/ Extroversion	5	-.966**	.007	5	-.285	.642
Verbal***/ Composure	5	-.700	.188	5	-.853	.066
Verbal***/ Character	5	-.245	.691	5	-.757**	.000

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 32

I-TV Instructor (**Dr. Seaborne**) Correlations by group between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility for instructors with more than one class.

	On-campus			Off-campus		
	N	Correlations	*P*-Value	N	Correlations	*P*-value
Ins: Seaborne	10			10		
Nonverbal/ Competence	10	.772**	.009	10	.020	.955
Nonverbal/ Sociability	10	.675**	.003	10	.369**	.001
Nonverbal/ Extroversion	10	.098	.789	10	.661*	.037
Nonverbal/ Composure	10	.615	.059	10	.267	.456
Nonverbal/ Character	10	.140	.700	10	.602	.065
Verbal***/ Competence	10	-.835**	.003	10	-.111	.760
Verbal***/ Sociability	10	-.862**	.001	10	-.523	.121
Verbal***/ Extroversion	10	-.146	.687	10	-.584	.077
Verbal***/ Composure	10	-.763**	.010	10	-.366	.298
Verbal***/ Character	10	-.294	.410	10	-.663*	.037

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 33

I-TV Instructor (**Dr. Flushing**) Correlations by group between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility for instructors with more than one class.

	On-campus			Off-campus		
	N	Correlations	*P*-Value	N	Correlations	*P*-value
Ins: Flushing	7			15		
Nonverbal/ Competence	7	.479	.277	15	.199	.477
Nonverbal/ Sociability	7	.607	.149	15	.653**	.008
Nonverbal/ Extroversion	7	.542	.209	15	.162	.564
Nonverbal/ Composure	7	.648	.116	15	.232	.406
Nonverbal/ Character	7	.224	.629	15	.036	.900
Verbal***/ Competence	7	-.427	.339	15	-.393	.148
Verbal***/ Sociability	7	-.704	.077	15	-.710**	.003
Verbal***/ Extroversion	7	-.532	.219	15	-.189	.500
Verbal***/ Composure	7	-.569	.183	15	-.218	.434
Verbal***/ Character	7	-.584	.168	15	-.489	.065

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 34

I-TV Instructor (**Ms. Jackpot**) Correlations by group between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility for instructors with more than one class.

	On-campus			Off-campus		
	N	Correlations	*P*-Value	N	Correlations	*P*-value
Ins: Jackpot	9			10		
Nonverbal/ Competence	9	.654	.056	10	.628	.052
Nonverbal/ Sociability	9	.777*	.014	10	.658*	.039
Nonverbal/ Extroversion	9	.836**	.005	10	.697*	.025
Nonverbal/ Composure	9	.723*	.028	10	.639*	.047
Nonverbal/ Character	9	.857**	.003	10	.757*	.011
Verbal***/ Competence	9	-.605	.084	10	-.765**	.010
Verbal***/ Sociability	9	-.751*	.020	10	-.623	.055
Verbal***/ Extroversion	9	-.899**	.001	10	-.418	.229
Verbal***/ Composure	9	-.598	.089	10	-.865**	.001
Verbal***/ Character	9	-.809**	.008	10	-.804**	.005

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 35

I-TV Instructor (**Dr. McCall**) Correlations by group between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility for instructors with more than one class.

	On-campus			Off-campus		
	N	Correlations	P-Value	N	Correlations	P-value
Ins: McCall	9			15		
Nonverbal/ Competence	9	-.287	.454	15	.628*	.012
Nonverbal/ Sociability	9	.204	.599	15	.860**	.000
Nonverbal/ Extroversion	9	-.042	.916	15	.635*	.011
Nonverbal/ Composure	9	.667*	.050	15	.819**	.000
Nonverbal/ Character	9	.847**	.004	15	.788**	.000
Verbal***/ Competence	9	.227	.407	15	-.691**	.004
Verbal***/ Sociability	9	-.191	.622	15	-.882**	.000
Verbal***/ Extroversion	9	.061	.876	15	-.772**	.001
Verbal***/ Composure	9	-.114	.770	15	-.888**	.000
Verbal***/ Character	9	-.325	.393	15	-.929**	.000

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 36

I-TV Instructor (**Mr. Levine**) Correlations by group between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility for instructors with more than one class.

	On-campus N	Correlations	*P*-Value	Off-campus N	Correlations	*P*-value
Ins: Levine	4			22		
Nonverbal/ Competence	4	.951*	.049	22	.492*	.020
Nonverbal/ Sociability	4	.446	.553	22	.413	.056
Nonverbal/ Extroversion	4	.982*	018	22	.345	.115
Nonverbal/ Composure	4	.798	.202	22	.703**	.000
Nonverbal/ Character	4	.568	.432	22	.541**	.009
Verbal***/ Competence	4	-.927	.073	22	-.297	.180
Verbal***/ Sociability	4	-.261	.739	22	-.570**	.006
Verbal***/ Extroversion	4	-.819	.181	22	-.188	.402
Verbal***/ Composure	4	-.467	.533	22	-.315	.153
Verbal***/ Character	4	-.334	.666	22	-.321	.146

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 37

I-TV Instructor (**Dr. Sanders**) Correlations by group between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility for instructors with more than one class.

	On-campus			Off-campus		
	N	Correlations	*P*-Value	N	Correlations	*P*-Value
Ins: Sanders	10			22		
Nonverbal/ Competence	10	.479	.065	22	.467*	.028
Nonverbal/ Sociability	10	.607**	.000	22	.731**	.000
Nonverbal/ Extroversion	10	.542	.073	22	.309	.162
Nonverbal/ Composure	10	.648**	.000	22	.562**	.006
Nonverbal/ Character	10	.224**	.000	22	.617**	.002
Verbal***/ Competence	10	-.427**	.006	22	-.662**	.001
Verbal***/ Sociability	10	-.704**	.000	22	-.602**	.003
Verbal***/ Extroversion	10	-.532	.153	22	-.281	.205
Verbal***/ Composure	10	-.569**	.000	22	-.478*	.024
Verbal***/ Character	10	-.584**	.000	22	-.695**	.000

*Indicates significance at .05 level

**Indicates significance at .01 level

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 38

Means and Standard Deviations by group of I-TV Instructor Gender on Nonverbal and Verbal*** Immediacy and Dimensions of Credibility.

Instructor Gender	On-campus N	Mean	sd	Off-campus N	Mean	sd
Female	58			80		
Nonverbal		3.8642	.62928		3.6375	.57009
Verbal***		1.8988	.99006		2.2390	1.11521
Competence		6.4368	.67019		6.0382	1.09745
Sociability		6.2414	.97891		5.9750	1.12980
Extroversion		6.0747	1.03740		5.9042	1.13652
Composure		6.2644	.93400		5.7458	1.16228
Character		6.1782	.87463		5.8965	1.11082
Male	21			65		
Nonverbal		3.8571	.40173		3.7944	.60624
Verbal***		1.9061	.77529		2.4652	1.13738
Competence		6.0724	1.36439		6.0718	.87894
		6.2412				
Sociability		3	.88129		5.9795	1.05389
Extroversion		5.8123	1.12628		5.8462	1.05422
Composure		6.3651	.95397		5.8678	1.23369
Character		6.1270	.90355		5.9660	.95755
Total	79			145		

***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.

Table 39

Female and male Instructors Correlations between Nonverbal and Verbal*** Immediacy and Dimensions of Credibility.

	On-campus			Off-campus		
	n	Correlations	P-Value	n	Correlations	P-Value
Female	80			58		
Nonverbal/ Competence	80	.443**	.000	58	.393**	.002
Nonverbal/ Sociability	80	.645**	.000	58	.694**	.000
Nonverbal/ Extroversion	80	.526**	.000	58	.405**	.002
Nonverbal/ Composure	80	.549**	.000	58	.700**	.000
Nonverbal/ Character	80	.629**	.000	58	.560**	.000
Verbal***/ Competence	80	-.600**	.000	58	-.518**	.000
Verbal***/ Sociability	80	-.720**	.000	58	-.837**	.000
Verbal***/ Extroversion	80	-.526**	.000	58	-.391**	.002
Verbal***/ Composure	80	-.606**	.000	58	-.732**	.000
Verbal***/ Character	80	-.717**	.000	58	-.721**	.000
Male	21			65		
Nonverbal/ Competence	21	-.190	.410	65	.437**	.000
Nonverbal/ Sociability	21	-.102	.661	65	.646**	.000
Nonverbal/ Extroversion	21	.022	.924	65	.187	.136
Nonverbal/ Composure	21	.458*	.037	65	.508**	.000
Nonverbal/ Character	21	.098	.671	65	.559**	.000
Verbal***/ Competence	21	-.136	.	65	-.547**	.000
Verbal***/ Sociability	21	.179**	.000	65	-.700**	.000
Verbal***/ Extroversion	21	-.275	.123	65	-.173	.168
Verbal***/ Composure	21	-.333	.444	65	-.543**	.000
Verbal***/ Character	21	-.335	.338	65	-.636**	.000
Total	79			145		

*Indicates significance at .05 level **Indicates significance at .01 level
***Lower score on verbal immediacy scale associated with higher reported verbal immediacy.