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Investigating a Relationship between Nonverbal Communication  
and Student Learning

by

Dustin York

A Dissertation submitted to the Education Faculty of Lindenwood University

in partial fulfillment of the requirements for the

degree of


Doctor of Education

School of Education

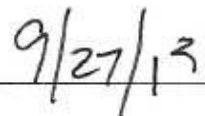
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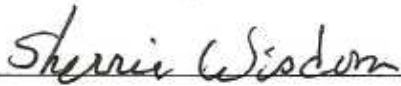
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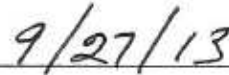
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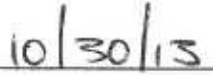
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Date

## Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

Full Legal Name: Dustin James York

Signature:  Date: 9/27/13

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## **Abstract**

Clear and effective communication is essential in today's society (Smith & Cotten, 1980; Smith & Land, 1981). Nonverbal communication specifically has a vital role in communication. There is inconsistent data on the effect of nonverbal communication used by instructors and the impact on student learning within the higher education environment. This research study sought to find distinct correlations between instructors' nonverbal communication and a variety of elements related to student learning.

This study examined (1) the relationship between standardized measurements of student learning and instructors' nonverbal communication, (2) the relationship between students' perceptions of their learning and instructors' nonverbal communication, (3) the relationship between students' perceptions of instructor credibility based on the instructors' nonverbal communication, and (4) the relationship between students' gender and instructors' nonverbal communication.

Based on quantitative and qualitative data, college students (N=85) from a midsize Midwestern university reported distinct findings that progressed the study of nonverbal communication. Students attended class with one of two variable instructor-lecturing types: utilizing effective nonverbal communication (good eye contact, arm movement, facial expression, voice fluctuation, and position in the classroom), or poor nonverbal communication (poor eye contact, arm movement, facial expression, voice fluctuation, and position in the classroom). The instructors lectured the exact same material from a script. Students provided data through tests, surveys, and focus groups

that delivered substantial evidence of the relationship between instructors' nonverbal communication and student learning.

Findings in the research study suggest that instructors' nonverbal communication is beneficial to students' academic success. This study outlined which elements of nonverbal communication an instructor could use to benefit student learning. Using the results of this study, university administrators, faculty, and professional development officials could find beneficial information for the success of higher education instruction.

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## **Chapter One: Introduction**

Effective higher education instructors' lectures are key to an enriching student learning environment (Leathers & Eaves, 2008). As so, instructors are responsible for communicating clearly and effectively to their students. Research has been conducted to examine what effect instructors' communication has on students' in-class behaviors (Adalsteinsdottir, 2004; Anderman & Kaplan, 2008; Kearney, Plax, Richmond, & McCroskey, 1984; Kearney, Plax, & Wendt-Wasco, 1985; Leathers & Eaves, 2008; Mackay, 2006; Sime, 2006).

Significant research has been conducted to correlate an academically beneficial bond between students and instructors through the use of verbal communication (Comadena, Hunt, & Simonds, 2007; Galloway, 1971; Lemire, 2002; McCroskey, 2002; Richmond, McCroskey, & Johnson, 2003). This research has propelled theories of students' academic success through the use of positive words. An experiment conducted by Wright and Nuthall (1970) showed a relationship between instructors' use of words like "good" following a student's in-class answer and that same student's achievement on later graded material.

Based on this finding, the verbal communication between an instructor and student is crucial for academic success; the clarity of the instructors' words impact the learning environment. Nonverbal communication by the instructor can help provide clarity and help students interpret the instructors' verbal communication (Burgoon, 1980; Burgoon & Saine, 1978; Chesebro, 1999, 2003; Houser & Frymier, 2009; Mehrabian, 1981; Wiener & Mehrabian, 1968). Thus, one can theorize that utilizing not only

effective verbal communication, but also effective nonverbal communication fosters a more enriching learning environment.

This study addressed inconsistent data regarding the effect of instructors' nonverbal communication on student learning. Mottet, Beebe, Raffeld, and Paulsel (2004) stated, "Verbal messages function to convey the content of the message whereas nonverbal messages function to establish the relationship" (p. 29). Previous literature (Andersen, 1979; Folwell, 2000; Frechette & Moreno, 2010) has cast doubt on the correlation between the relationship built from nonverbal communication and student learning, while other literature promotes its effectiveness (Burroughs, 2007; Comadena et al., 2007; Daniel, 2000; Eadie, 1996).

### **Background of the Study**

In order to study nonverbal communication, it is essential to offer a specific definition. Ellyson and Dovidio (1985) defined nonverbal communication as "behavior that is not part of formal, verbal language" (p. 1). This definition encompassed a wide variety of messages a student may receive within a classroom. This would include aspects such as classroom temperature, instructor attire, time of day, etc. Another definition of nonverbal communication was stated by Henley (1977), "how we say things with our body postures and movements, facial expressions, gestures, touching, eye contact, use of space, and so on" (p. 2). For the purpose of this study, the definition of nonverbal communication included instructors' eye contact, hand and arm motions, facial expressions, voice fluctuation, and moving around the front of the classroom while never behind a podium or other barrier.

The question must be asked: how much of communication is nonverbal? A number of studies tried to pinpoint an exact percentage. Mehrabian (1981) theorized that one-half of communication falls under the nonverbal category, which is the lowest percentage accumulated from such a study. Barnum and Wolniansky's (1989) findings suggest 70% is nonverbal while Fromkin and Rodman's (1983) findings state that 90% is nonverbal communication. A more recent study by Pease and Pease (2004) found that 83% of communication comes from nonverbal communication. According to these authors, there is a consensus that nonverbal communication accounts for over half of communication.

Past research focused primarily on two areas of speakers' nonverbal communication. The first area of study that received attention is the speakers' facial expressions (Atkinson, 2002; Garau, Slater, Bee, & Sasse, 2001; Mitrovic & Suraweera, 2000). The second area of nonverbal study centered around hand and arm motions (Craig, Gholson, & Driscoll, 2002; van Mulken, Andre, & Muller, 1998). Although both areas were found to demonstrate qualities of the speaker, the two differed. Emotions have been correlated to the face (Atkinson, 2002), while clarity has been associated with hands and arms (Craig et al., 2002).

This nonverbal communication research has been incorporated into the classroom setting for over three decades. Numerous studies presented data relating instructors' effective nonverbal communication with students' academic success in some context (Allen, Witt, & Wheelless, 2006; Andersen, 1979; Andersen, Norton, & Nussbaum, 1981; Burroughs, 2007; Chesebro, 2003; Christophel, 1990; Gorham, 1988; Gorham & Zakahi, 1990; Kearney, Plax, & Wendt-Wasco, 1985; King & Witt, 2009; Plax, Kearney,

McCroskey, & Richmond, 1986; Powell & Harville, 1990; Richmond, 1990; Richmond, Gorham, & McCroskey, 1987; Sanders & Wiseman, 1990; Titsworth, 2001).

While research has been plentiful, there have been a number of inconsistencies in the findings. In the following sections, I will identify the purpose of this study, and how it will add to the literature.

### **Purpose of the Study**

Maximizing students' academic achievement is the primary goal for any educator. With this being the goal, instructional communication is an area that can benefit any instructor in the classroom. Although many studies researched the area of instructional communication, further data may shed light onto the effect of nonverbal communication in the classroom.

Few studies have investigated potential correlations between instructors' nonverbal communication and true student learning. In order to supply instructors in the higher education environment with information about effective lecture practices, further research is needed to define the effectiveness of nonverbal communication in the classroom at the college level. This research study provided documentation of a correlation between instructors' nonverbal communication and student performance on standardized measurement of learning. This document also adds to literature the relationship instructors' nonverbal communication has on other areas of students' learning.

Instructional communication supports the clarity of academic messages. Past studies found a strong correlation between instructor clearness and increased student academic achievement (Alexander, Frankiewicz, & Williams, 1979; Burgoon, 1980;



Burgoon & Saine, 1978; Chesebro, 1999, 2003; Hines, Cruickshank, & Kennedy, 1985; Houser & Frymier, 2009; Mehrabian, 1981; Smith & Cotten, 1980; Smith & Land, 1981; Wiener & Mehrabian, 1968). Further studies on how nonverbal communication can support the clarity of educational messages are essential for student success.

This was a mixed method study, utilizing both qualitative and quantitative forms of data gathering. The purpose of this project was to investigate:

- The relationship between instructors' nonverbal communication and student learning, using posttest scores from two student cohorts
- The relationship between nonverbal communication reception and student gender
- The relationship between nonverbal communication reception and perceived instructor credibility
- The perceptions of students' learning related to instructors' nonverbal communication
- The relationship between students assigned to a class and those from a participant pool.

The primary goal of this study was to determine if there was a relationship between the effectiveness of instructors' nonverbal communication and student learning, as opposed to how students feel about their learning. Prior studies reported a correlation between instructors using effective nonverbal communication and students enjoying that instructor's lecture (Allen et al., 2006; Andersen, 1979; Andersen et al., 1981; Burroughs, 2007; Kearney, Plax, & Wendt-Wasco, 1985; Rocca & McCroskey, 1999; Rodgers & McCroskey, 1984). Although students like the instructor more when he/she uses

effective nonverbal communication, are the students truly learning more, or are they enjoying the learning experience more? This research study sought to answer this question.

Kelly and Kelly (1982) stated that award-winning teachers compared their instructing to a theatrical performance. These recognized teachers obviously held nonverbal communication to be essential just as it is with theatrical performances. This analogy infers there truly was a relationship between instructors' effective nonverbal communication and students' academic success. Exploring this further, this researcher felt this was an area where findings could benefit the higher education environment.

Sims and Sims (1995) stated, "Institutions of higher education are always looking for ways to make their educational initiative more effective. Higher education administrators and instructors at all levels are constantly under pressure to provide more effective and efficient services" (p. 1). This study sought to provide higher educational instructors with data to improve student learning during live lectures.

### **Research Problem**

Friedrich (1978) stated, "For seventy years, teachers have interacted with their students using a relatively consistent pattern. Yet after thousands of research studies, we are unable to say that those interactions have any impact on learning" (p. 16). This holds true today; current research must specifically point toward student academic success or the lack thereof. The research problem detailed in this study is the lack of data correlating instructors' nonverbal communication to students' learning.

Although verbal communication in the classroom has been studied for over a half-century, nonverbal communication studies received research since the 1970s. There have

been numerous studies in the last 40 years that correlate instructors' nonverbal communication with student learning (Andersen, 1978, 1979; Andersen, Andersen, Murphy, & Wendt-Wasco, 1985; Beebe, 1980; Breed, 1971; Burroughs, 2007; Comadena et al., 2007; Daniel, 2000; Eadie, 1996; Grant & Hennings, 1971; Kearney, Plax, & Wendt-Wasco, 1985; Richmond et al., 1987; Smith, 1979; Victoria, 1970; Weineke, 1981), but further research is needed to sort out inconsistent findings.

Even within the communication field, professionals stated nonverbal communication needed more research. Pettit (1976) found that communication research primarily involved writing and theory, but needed more exploration in the field of nonverbal communication.

There has been significant skepticism about nonverbal communication's role in student learning (Andersen et al., 1981). A past study by Andersen (1979) found no major relationship between nonverbal communication and tested student learning, while McDowell, McDowell, and Hyerdahl (1980) utilized the same exact study one year later and found a positive relationship between instructors' nonverbal communication and students' grades. I will discuss in Chapter Two how this inconsistency has continually occurred since then. This is an area that needs further investigation to bring validity to the claim of nonverbal communication's effect on student learning.

There have been numerous other limitations in past research about instructors' nonverbal communication and student learning. For instance, some studies utilized taped video of instructors (Folwell, 2000; Frechette & Moreno, 2010). The researchers believed the usage of videotape took away many positive effects nonverbal

communication has on in-class instruction. In contrast, the current study utilized live instructor presentations.

Another issue from past research includes un-directed surveys about instructors' nonverbal communication. Some researchers distributed surveys to a number of classroom students, which asked them to rate their professor according to a nonverbal communication scale but did not test the students (Eadie, 1996; Folwell, 2000; Plax et al., 1986; Richmond et al., 1987). The survey questions asked the students what they thought of their instructors' nonverbal communication and how much they thought they learned from that instructor.

Variables to be considered from this past research:

1. The researchers limited their study to student perception of what they learned.

The researchers did not measure if students truly learned more from an instructor who utilized effective nonverbal communication skills compared to one who utilized poor nonverbal communication skills through testing.

2. Survey answers could have been influenced by previous instructor-student connections. Examples of this could include previous classes with the instructor or an adviser/advisee relationship. This previous connection the students may have had with the instructor could have changed how they view their perceived learning from that instructor. In this study, students' first encounter with the instructor utilizing effective or poor nonverbal communication skills was the same day as the tests and survey. This decreased extraneous variables on this study's data.

The relationship between instructors' nonverbal communication and students' perceived credibility of the instructor was also measured as part of this study. Past research considered perceived credibility of the instructor (Pogue & AhYun, 2006). This study gave no explanation of the instructors' career background.

Results from students in a structured course in the current study were compared to those from a participant pool. This determined if the added importance of a perceived class grade had an effect on the level of active learning. As the participant pool had no perception of a class environment, differences were measured. No literature was found that studied this relationship.

Nonverbal communication experiments, such as the one in this study, bolster the data credibility compared to research that criticizes the positive effect of nonverbal communication (Hess, Smythe, & Communication 451, 2001). This research is valuable to university deans and higher education instructors to help increase students' academic success.

### **Hypotheses**

The purpose of this research study was to examine the relationship between instructors' nonverbal communication and student learning. This empirical research was conducted during the spring 2013 semester. Although the primary purpose of this study was to compare students' standardized measurements of learning affected by instructors' nonverbal communication, this study adds data to the body of literature on a number of other aspects of nonverbal communication in the classroom. Quantitative data were collected through the use of tests and surveys to investigate a number of hypotheses. The hypotheses for this mixed methods study are as follows:

**Hypothesis #1:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by posttest scores.

**Hypothesis #2:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by comparison of pretest and posttest scores.

**Hypothesis #3:** Female students in the class taught by the instructor who have been trained in effective nonverbal communication will have greater knowledge retention than male students, as measured by gain in pretest to posttest scores.

**Hypothesis #4:** Female students in the class taught by the instructor who has not been trained in effective nonverbal communication will have greater knowledge retention than male students, as measured by gain in pretest to posttest scores.

**Hypothesis #5:** There will be a relationship between the type of nonverbal communication delivered and knowledge gained as measured by posttest scores.

**Hypothesis #6:** Students will report they learn more from an instructor trained in effective nonverbal communication compared to an instructor not trained in effective nonverbal communication, as measured by percentage of agreement with prompts on perception survey results.

**Hypothesis #7:** The observation of effective versus non-effective nonverbal communication will affect how knowledgeable students perceive the instructor to be, as measured by percentage of agreement with prompts on perception survey results.

## **Research Questions**

Along with the quantitative data derived from the hypotheses, research questions were developed to add qualitative data. The qualitative data were collected through the use of focus groups.

The research questions I examined for this mixed methods study are as follows:

**Research Question #1:** What is the relationship between instructors' use of nonverbal communication and students' perception of how much he or she has learned as measured by responses during focus group discussion?

**Research Question #2:** What is the relationship between instructors' use of nonverbal communication and students' perception of the instructors' knowledge about the lectured subject as measured by responses during focus group discussion?

## **Definition of Terms**

In this section, terms were defined that were used throughout the study. Terms, or variations of terms, were used throughout the field of nonverbal communication education. Although some terms do not have a consistent usage in the field's studies, terms backed by literature were chosen and used throughout the research document.

**1. Nonverbal Communication** –The use of hand gestures, vocal variety, eye contact with students, positive facial expressions, relaxed body posture while walking around the classroom, removed barriers between students and instructor (Eadie, 1996; Frechette, & Moreno, 2010; Moore, Hickson, & Stacks, 2010; Teel, 2011; Woolfolk, 1978).

**2. Proxemics** –The study of how space is used by individuals to communicate (Devito, 2009; Leathers & Eaves, 2008; Moore, Hickson, & Stacks, 2010; Prabhu, 2010; Smeltzer, Waltman, & Leonard, 1999; Teel, 2011).

**3. Paralanguage** –The vocal cues such as pitch, tempo, volume, inflections, pauses, vocalizations, and silence (Argyle, 1999; Lesikar & Flatley, 2005; Moore et al., 2010; Semic, 1999).

**4. Kinetics** –Facial expressions and body movements (Leathers & Eaves, 2008; Moore et al., 2010).

**4. Immediacy** –The physical and psychological closeness a student feels with his/her instructor. Non-immediate instructors imply distance and detachment from their students (Andersen, 1979; Mehrabian, 1961, 1971, 1981). Nonverbal immediacy techniques include body lean, eye contact, smiling, physical closeness, head nods, hand gestures, and vocal expressiveness (Andersen, 1979; Andersen, Andersen, & Jensen, 1979; Burgoon, Buller, Hale, & de Turck, 1984; King & Witt, 2009; Knapp & Hall, 2010; Patterson, 1973; Teel, 2011; Witt & Schrodt, 2006).

**5. Perceptions of Learning:** How students think they are learning from the instructor (Andersen et al., 1981; Burroughs, 2007; Eadie, 1996; Richmond, McCroskey, Plax, & Kearney, 1986; Rodríguez, Plax, & Kearney, 1996). This is not truly how much students have learned, but only their feelings toward their own learning.

**6. Standardized Measurements of Learning:** How much students truly learn from the instructor according to standardized measurements of learning, as



opposed to the student's perceptions of how much they learned (Andersen et al., 1981; Burroughs, 2007; Eadie, 1996).

### **Assumptions**

It should be noted that I began this study with the assumption that nonverbal communication has a strong impact on communication. My professional background in communication led me to build opinions about the strength of nonverbal communication's impact on social behaviors. However, at the time of this study, I was new to the higher education environment, and thus had not made strong personal theories about the relationship between instructors' nonverbal communication and student learning.

Because I was aware of my own assumptions regarding this study, I purposefully included a number of steps to maximize the validity of the data collected. For instance, I was not the only instructor that lectured in the experiment. I also brought in an additional instructor to make sure the methodology would not sway data results in a favorable direction. The tests, survey, and focus group answers were also graded/identified by three other raters beyond my own grading/identification in order to support the validity of the final data.

Another assumption was that students answered honestly and consistently to survey and focus group questions. To facilitate this, instructors left the room while students completed their assessments.

### **Summary**

Chapter One provided an introduction to this study, offered some background information about nonverbal communication in educational environments, and described

the purpose of this study. I also outlined the research problems that this study specifically targeted. The hypotheses and research questions found in Chapter One gave clear objectives that guided the methodology in Chapter Three. This chapter also defined key terms that were utilized throughout this research study. Chapter One contained an overview of my previous experience with nonverbal communication and steps that were taken to counteract any biases.

This study aimed to contribute to current literature in the field of nonverbal communication in the college classrooms. Higher education deans, professors, academic scholars, and nonverbal communication professionals may gain valuable information from this study in relation to the power of nonverbal communication when presenting to inform an audience.

### **Conclusion**

Nonverbal communication is a powerful tool in society. As so, this study was conducted to look at the relationship between an instructor's nonverbal communication and student learning, specifically in the higher education environment. This current study contributed to the body of research surrounding instructors' nonverbal communication.

This dissertation is divided into five chapters: Chapter One provided the framing of this study including the purpose and how it contributed to the current literature. Chapter Two consists of a well-researched literature review over nonverbal communication specifically, and its role in education. Chapter Three outlines the methodology of this study including research instruments. Chapter Four identifies the data that were collected from the methodology. Chapter Five includes a discussion about this study and recommendations for future studies in this field.

The following chapter reviews literature involving: history of nonverbal communication and student learning, nonverbal communication's effect on perceptions of learning and standardized measurements of learning, nonverbal communication's effect on instructors' perceived credibility, differences in achievement by gender correlated to instructor nonverbal communication, and learning effective nonverbal communication.

## **Chapter Two: Literature Review**

### **Introduction**

The purpose of this study was to provide instructors in higher education with empirical evidence concerning the impact nonverbal communication has on student learning. Research in the area of nonverbal communication and student learning will be reviewed.

Areas discussed in Chapter Two include: history of nonverbal communication and student learning, nonverbal communication's effect on perceptions of learning and standardized measurements of learning, nonverbal communication's effect on instructors' perceived credibility, differences in achievement based on gender correlated to instructor nonverbal communication, and learning effective nonverbal communication.

The literature review begins with a historical perspective of research between nonverbal communication and student learning. Afterward, Chapter Three will outline the methodology of this empirical research to observe the relationship between nonverbal communication and student learning.

### **Nonverbal Communication and Student Learning, a Historical Perspective**

Since the early 1970s, there has been research interest in the role of instructors' nonverbal communication on student learning (Anderman & Kaplan, 2008; Andersen, 1979; Andersen et al., 1981; Christophel, 1990; Frechette & Moreno, 2010; Gorham, 1988; Gorham & Zakahi, 1990; Kearney, Plax, & Wendt-Wasco, 1985; Leathers & Eaves, 2008; Mackay, 2006; Plax et al., 1986; Powell & Harville, 1990; Richmond, 1990; Richmond et al., 1987; Sanders & Wiseman, 1990; Sime, 2006; Teel, 2011; Woolfolk, 1978). There are two founding researchers who began the trend of nonverbal

communication in education. Mehrabian (1961) was the first to study the significance of nonverbal communication in the classroom. Andersen (1978) took Mehrabian's findings and further associated them to the instructors' presentation style.

The two researchers coined the term immediacy, which describes physical and psychological closeness a student feels with an instructor. Nonverbal communication immediacy techniques include body lean, eye contact, smiling, physical closeness, head nods, hand gestures, and vocal expressiveness (Andersen, 1979; Andersen et al., 1979; Burgoon et al., 1984; King & Witt, 2009; Knapp & Hall, 2010; Patterson, 1973; Teel, 2011; Witt & Schrodt, 2006).

Mehrabian (1961) and Andersen (1978) felt nonverbal communication immediacy played an integral role in the classroom environment. The researchers felt students held a more positive perception of their instructor and the class.

Using a variety of definitions from Frechette and Moreno (2010), Woolfolk (1978), and Eadie (1996), the definition of nonverbal communication immediacy in this study included several components. Backed by prior research, nonverbal communication strategies were identified as hand gestures, vocal variety, eye contact with students, positive facial expressions, relaxed body posture while walking around the classroom, and removed barriers between students and instructor.

Data collected from a study by Burgoon and Hoobler (2002) found five important nonverbal encoding and decoding skills that pertained to interpersonal communication:

1. Nonverbal communication encoding and decoding skills are correlated to personal popularity, attraction, and psychosocial well-being.

2. Nonverbally skilled communication senders are more successful in influencing and deceiving other people.
  3. Encoding and decoding nonverbal communication skills are related to gender.
  4. Encoding and decoding nonverbal communication skills are not related to race, education, and intelligence, while occupation, training, and age are related.
  5. There is a modest relationship between senders who are good at encoding nonverbal communication also being good at decoding.
- (p. 241)

Hybels and Weaver (2004) outlined four functions of nonverbal communication. First, nonverbal communication is unique to culture; perception of nonverbal communication can differ between cultures where the act is present (Hybels & Weaver, 2004, p. 171). Next, verbal and nonverbal communication messages may conflict with each other; positive word choices can be contradicted by negative nonverbal communication (Hybels & Weaver, 2004, p. 172). Next, the majority of nonverbal communication operates at a subconscious level; people often do not consciously control their nonverbal communication actions (Hybels & Weaver, 2004, p. 174). Finally, nonverbal communication reflects feelings and attitudes; nonverbal communication can describe the sender's feeling in a message better than spoken words (Hybels & Weaver, 2004, p. 175).

While considering these four functions of nonverbal communication, there are poor nonverbal communication elements that higher education instructors need to be

mindful of (Kroehnert, 2006). Kroehnert (2006) mentioned five nonverbal communication errors by instructors:

1. Poor personal habits
2. Always stiff
3. Blocking or touching their face
4. Over-exaggerated hand gestures
5. Tapping or shaking legs and hands (pp. 151-153).

Instructors' nonverbal communication has been correlated to stronger student perception in a number of other studies. Norton's (1977) research concluded that perceived instructor effectiveness and the instructor's communication style were strongly correlated. Utilizing proxemics (use of space), and paralanguage (use of voice fluctuation) positively affected nonverbal communication.

Lesikar and Flatley (2005) stated:

Paralanguage is the communication effect of the speech, pitch, volume, and connectivity of spoken words. Are they fast or slow? Are they high pitched or deep? Are they loud and forceful or barely audible? Are they smooth or disjointed? These questions are examples of the types you would ask to analyze the nonverbal symbols of paralanguage. The symbols become a part of the meaning that is filtered from a spoken message...Depending on the circumstance, a person's voice may or may not be consistent with the intended word meanings. But you should make every effort to avoid inconsistencies that will send a confusing message. Consistency among the words you choose and how you deliver them to create clear meaning should be your goal. (pp. 425-427)

In another study, attractive voices caused listeners to perceive the speaker as likeable, dominant, and competent (Tubbs & Moss, 2006).

Researchers believe proxemics is another powerful tool in nonverbal communication (Anderson, 1999; DeFleur, Kearney, & Plax, 1998; Devito, 2009; Leathers & Eaves, 2008; Miller, 1998; Richmond & McCroskey, 2004). Miller (1998) stated:

The most advanced curriculum and the highest hopes have little chance of success without a supportive physical learning environment. In order to foster productive communication in the classroom, teachers must allow for flexible changes that are beneficial for group interaction. It should be noted, however, the appropriate spatial distances and arrangements are limited by a myriad of variables, including the conversational topic, the nature of the relationship, and the physical constraints present in the classroom. (p. 11)

Proxemic distance was studied by Devito (2009) who categorized four types of space in relationship to communication in the US culture.

1. Close relationships range from touch to 18 inches.
2. Personal distance ranges from 18 inches to 4 feet.
3. Social distance ranges from 4 feet to 12 feet.
4. Public distance ranges from 12 feet to more than 25 feet. (p. 68)

Another element that proved to encourage effective nonverbal communication was specific facial expressions, otherwise known as kinetics. Research demonstrated that facial expressions are the most important type of nonverbal communication (Tubbs & Moss, 2006), which make facial expressions key to listeners' perception of the speaker.



Further information regarding studies on facial features is described later in this chapter. Proxemics, paralanguage, and kinetics all result in a stronger connection between speaker and receiver if used effectively.

Hand and arm gestures are also defined as kinetics. Although hand and arm gestures received much less empirical research than facial and vocal expressions, research has found hand and arm gestures to be a beneficial component of effective nonverbal communication (Hietanen, Leppänen, & Lehtonen, 2004). This connection is essential for a successful learning environment. Chesebro et al. (1992) stated, “effective communication between teachers and students is the essence of effective instruction” (p. 354). As previously mentioned, nonverbal communication accounted for over half of instructors’ messages (Barnum & Wolniansky, 1989; Fromkin & Rodman, 1983; Mehrabian, 1981; Pease & Pease, 2004). Therefore, one can theorize that this effective communication must involve a high number of nonverbal communication elements (Chesebro et al., 1992).

Miller (1998) stated:

Body postures and movements are frequently indicators of self-confidence, energy, fatigue, or status. In the classroom, students keen to receive body messages of enthusiasm and boredom about the subject matter being taught can sense confidence or frustration from the unconscious behavior of the teachers. (p. 18)

A study conducted by Hogan and Stubbs (2003) asked students at a university how likeable their professor was after a few seconds of the first impression. Students who found the professor congenial in the first few seconds found the entire class

throughout the semester more enjoyable than did the students who stated they did not like the professor after the first impression.

Burroughs (2007) described an instructor using nonverbal communication immediacy as one, “who seems relaxed, animated and vocally expressive during class lectures and discussion, moreover, this teacher smiles frequently, engages in a lot of eye contact and is generally perceived as friendly and approachable” (p. 456). Contrary to this type of instruction is the poor nonverbal communication instructor. Burroughs (2007) defined this instructor as one “who seems tense, reserved, and vocally unexpressive during class lectures and discussions. Moreover, the teacher seldom smiles, avoids looking directly at students and is generally perceived as remote, aloof and unapproachable” (p. 456).

Leathers and Eaves (2008) studied the presence of a barrier between the instructor and students. The researchers found that removing a physical barrier such as a podium or desk can positively affect communication with students, referred to as proxemics. Proxemics is the study of how individuals use space to effectively communicate (Leathers & Eaves, 2008; Moore et al., 2010; Smeltzer et al., 1999).

Research has been conducted to study the effects of these nonverbal communication elements as they pertained to students’ academic achievement. Instructor smiles, head nods, and eye contact have been associated with students seeking further information about the lectured topic (Myers & Knox, 2001). Research shows that even though students received the same amount of information depending on the level of instructors’ nonverbal communication, students took it upon themselves to learn outside

of the classroom if they felt a stronger connection with the instructor (Myers & Knox, 2001).

These nonverbal communication elements from the instructor have also been associated with students communicating more during class (Fusani, 1994). Class engagement can be infectious, thus encouraging students who would not regularly participate in class to join the conversation. This instructor-student connection has been studied in correlation to two learning ideas: students' perception of learning, and standardized measurements of learning (Fusani, 1994).

### **Nonverbal Communication's Effect on Perceptions of Learning**

In this section, the relationship between instructors' nonverbal communication and students' perceptions of learning are outlined. Again, this study has defined perceptions of learning as how significantly students think they are learning from the instructor (Allen et al., 2006; Andersen et al., 1981; Burroughs, 2007; Chesebro, 2003; Eadie, 1996; King & Witt, 2009; Richmond et al., 1986; Rodríguez et al., 1996; Teel, 2011).

There have been numerous research studies that directly correlated teachers' immediacy of nonverbal communication with building a positive instructor/student relationship in the secondary and college environments (Andersen, 1979; Andersen et al., 1981; Burroughs, 2007; Cheesebro, 2003; Cheesebro & McCroskey, 2001; Comadena et al., 2007; Eadie, 1996; Kearney, Plax, & Wendt-Wasco, 1985; Mackay, 2006; McDowell et al., 1980; Richmond & McCroskey, 1984; Richmond et al., 1986; Rodriguez et al., 1996; Teel, 2011).

Mehrabian (1971) stated that nonverbal communication immediacy has a strong relationship between interpersonal relationships, “People are drawn towards persons and things they like, evaluate highly, and prefer; and they avoid or move away from things they dislike, evaluate negatively, or do not prefer” (p. 1). Mehrabian’s concept pertained to the classroom environment.

Instructors who build a strong class relationship with their students motivate those students to spend more time on class tasks, which increases their perception that they learned more (Rodríguez et al., 1996). Richmond (2002) stated that students feel much closer to an immediate nonverbal communication instructor which promotes a positive instructor-student relationship.

Instructors’ nonverbal communication immediacy has been found to produce four results (Mackay, 2006, p. 54). First, nonverbal communication was the primary indicator of the lesson’s mood for the day. This study stated that this mood was established within the first few minutes. Second, after the mood was established, the instructor’s nonverbal communication provided a context to how students should act with each other and the instructor. Next, Mackay (2006) found that the instructor’s proxemics, paralanguages, and kinetics convey their amount of confidence and control over the classroom. Finally, as students became familiar with the mood of the class, their attitudes toward that class or instructor did not change unless changes occurred from the instructor. This research specifically predicted a positive correlation between instructors’ nonverbal communication and positive student change, but results occurred over time. This research study examined the effects of instructors’ nonverbal communication in relation to students’ learning within the first hour of introduction.

Another study conducted by Houser and Frymier (2009) specifically studied the personal perceptions students felt when presented with an instructor with effective and poor nonverbal communication. These researchers found a relationship between the instructors' effective nonverbal communication and students' sense of confidence in the subject area; conversely, instructors' poor nonverbal communication lead to students' uncertainty about the subject area (Houser & Frymier, 2009). Students' confidence toward the classroom environment increased perceptions of their own learning. If students feel confident about the subject matter because they formed a strong bond with the instructor, the students in turn feel as if they learned substantially more (Houser & Frymier, 2009).

The idea that students believe they learn more from a teacher they personally like is not a new premise. Mehrabian (1981) stated, "people approach what they like and avoid what they don't like" (p. 22). One reason students believe they are learning more from an immediate nonverbal communication instructor is the link to student apprehension (Chesebro & McCroskey, 1998, 2001). Students who do not feel anxiety toward a subject felt as if they would achieve academic success, thus if students feel comfortable in the learning environment, their perception of their own learning is greater (Chesebro & McCroskey, 1998).

A study conducted by Andersen et al. (1981) found noteworthy information about perceptions of learning. In their study, 13 instructors taught 198 college students in separate classes; in each class, three trained observers rated the instructors' nonverbal communication immediacy. Following the lectures, students completed a survey on the instructors' communication style and an exam over the tested material. The survey data

showed a strong correlation between effective nonverbal communication and students' perception of learning. However, their study found no significant correlation between nonverbal communication and standardized measurements of learning.

Some researchers (Eadie, 1996; Holden, 1997) argue that instructors' nonverbal communication immediacy is solely connected to students' perception of learning but has no relationship with standardized measurements of learning. Eadie (1996) stated:

Teachers who use nonverbal immediacy behaviors tend to build good feeling between themselves and their students, which motivates students to spend more time on the learning tasks, which, in turn, causes students to perceive that they have learned something significant. (p. 13)

Additionally, Holden (1997) researched the relationship between instructors' nonverbal communication and students' perceptions of learning and standardized measurements of learning. He taught the same exact class with two student cohorts; one class was taught for the entire semester with poor nonverbal communication behaviors while the second class was taught using effective nonverbal communication behaviors.

At the end of the semester, when students were asked via survey how much they felt they had learned from the class, results varied greatly (Holden, 1997). On a scale with 5 being the greatest, the poor nonverbal communication class survey averaged 2.93, while the effective nonverbal class averaged 4.05. This is consistent with the literature on students' perceptions of learning.

Notably, there was no significant change in final class GPA between these two

cohorts. The study in this research document was similar to Holden's (1997) work with two major changes: the lecture was only one day, and there was no past relationship between the instructors and the students.

Although research has agreed that nonverbal communication affects how students perceive their own education, there is a lack of consensus regarding a relationship between nonverbal communication and standardized measurements of learning.

### **Nonverbal Communication's Effect on Standardized Measurements of Learning**

In this section, the relationship between instructors' nonverbal communication and students' standardized measurement of learning are outlined. Again, this study has defined standardized measurements of learning as how much students truly learn from their instructor (Andersen et al., 1981; Burroughs, 2007; Comadena et al., 2007; Daniel, 2000; Eadie, 1996). Researchers studied the relationship between instructors' nonverbal communication and tested student learning. This area of the literature does not support a unified idea as opposed to student perception of learning.

Christophel (1990) stated, "teachers can be active agents within the educational environment, capable of stimulating the development of student motivation toward learning" (p. 324). Christophel (1990) defined these active agents as instructors who utilize effective nonverbal communication immediacy in their classrooms. This theory is supported by a number of researchers including Daniel (2000) who stated, "teacher's nonverbal immediacy and cognitive and affective learning are related" (p. 64). Daniel (2000) defined perceptions of learning as cognitive learning, and standardized measurements of learning as affective learning.

Additionally, research conducted by Sime (2006) found a relationship between instructors' nonverbal communication and three specific areas:

1. Nonverbal communication can reinforce standardized measurements of learning.
2. Nonverbal communication supports instructor-student connections.
3. Nonverbal communication sets a tone for the class, in terms of classroom management. (p. 112)

Unlike the studies by Andersen et al. (1981) and Holden (1997), Sime (2006) did find a positive correlation between instructors' nonverbal communication and students' standardized measurements of learning. One notable theory for this positive relationship was presented by Rocca (2004) which found that students' class attendance increased when the instructor utilized effective nonverbal communication. This increased amount of class time could result in positive standardized measurements of learning.

Another positive correlation between instructors' nonverbal behavior and standardized measurements of learning came from Nussbaum and Scott (1979) who found that a strong interpersonal relationship between an instructor and a student is a significant predictor of learning. If research agrees that nonverbal communication immediacy positively affects instructor/student relationships, one can see the correlation between that relationship and a predictor of learning.

Richmond et al. (1987) conducted a study that supported the theory that instructors' nonverbal communication affects students' standardized measurements of learning. Following two studies of a combined 719 undergraduate students, the study found that instructor paralanguages, facial expressions, and a relaxed body posture had the strongest impact on learning.



Richmond and his colleagues (1987) determined that instructors' moderate nonverbal communication immediacy positively affected students' standardized measurements of learning compared to instructors utilizing poor nonverbal communication immediacy. Notably, instructors' moderate nonverbal communication immediacy and instructors' high nonverbal communication immediacy produced similar results.

Similarly, Miller (1998) studied the positive association between instructors' nonverbal communication and student success. Miller (1998) said:

Teachers express enthusiasm, warmth, assertiveness, confidence, or displeasure through their facial expression, vocal intonation, gestures, and use of space.

When teachers exhibit verbal messages that conflict with nonverbal messages, students become confused, and this confusion often affects their attitudes and learning. (p. 6)

A notable study conducted by Kelley and Gorham (1988) correlated students' standardized measurements of learning with instructors' eye contact and physical positioning. This experiment utilized four different conditions for the instructor, which included:

1. Leaning forward in a chair with no barrier between the instructor and students while performing positive head nods and eye contact
2. Leaning forward in a chair with no barrier between the instructor and students while performing positive head nods and no eye contact
3. Leaning back in a chair, holding a notebook to create a barrier between the instructor and students, performing no positive head nods but keeping eye contact

4. Leaning back in a chair, holding a notebook to create a barrier between the instructor and students, performing no positive head nods or eye contact. (p. 203)

Schonwetter (1993) found that instructors' effective nonverbal communication improved students' selective attention to the instructors' presentation. This selective attention could then be targeted toward the learning objectives of the lecture.

Additionally, Burroughs' (2007) study sought to find a correlation between instructors' nonverbal communication and students' standardized measurements of learning. His study recruited 564 undergraduate students from a mid-Atlantic university; these students completed a survey regarding perceptions of learning, which included two questions to assess standardized measurements of learning (Burroughs, 2007).

The data derived from Burroughs' (2007) study established that instructors' nonverbal communication was related to both perceptions of learning and standardized measurements of learning. This current study utilized a larger test with broader content to measure standardized measurements of learning in order to add strong data to the literature.

In another study, an instructor discussed six items during a short lecture (Kelley & Gorham, 1998). Following the lecture, a test was given to students, which required them to recall the six items. Kelley and Gorham's (1988) data found that the high nonverbal communication immediacy instructor received the highest average test score. A similar methodology was used in this study, but included more nonverbal elements.

One study conducted by Comadena et al. (2007) specifically looked at the psychological attachment that was created between an instructor and the student based on nonverbal communication immediacy. This study found that nonverbal communication

by an instructor in the classroom creates an intimate learning environment. Comadena et al. (2007) concluded that the intimate learning environment built from nonverbal immediacy resulted in student development of overall academic performance.

Allen et al. (2006) found similar results. Like other researchers, they found that instructors' nonverbal communication immediacy positively affected students' perceptions of learning. Allen and his colleagues further analyzed students' feelings about their own learning, and actual learning. This study concluded that effective nonverbal communication from the instructor initially resulted in an increased student perception of learning, which led to improved standardized measurements of learning (Allen et al., 2006).

A study conducted by Zekia (2009) also found data that supported the theory that instructors' nonverbal communication positively affected students' standardized measurement of learning. A total of 67 students were divided into two classrooms. One instructor used effective eye contact, mimics, and gestures, while the other instructor did not. Students were told to write a reflection after each class for two months. The results found that the instructors' nonverbal communication was related to student motivation and concentration toward class material. Students in the effective nonverbal communication class exemplified higher success in standardized measurements of learning compared to the poor nonverbal communication class (Zekia, 2009).

Although there have been numerous studies that showed a positive relationship between instructors' nonverbal communication and students' standardized measurements of learning, there have also been studies criticizing the correlation (Andersen et al., 1981; Holden, 1997; Woolfork, 1978).

Kashinsky and Wiener (1969) found no correlation between vocal fluctuation of instructors and the academic performance of five-year-olds. This research studied instructors' use of voice fluctuation in the higher education environment 44 years later.

Andersen's (1979) research showed no significant effect of nonverbal communication on standardized measurements of learning, while having 18- 46% variance on students' perception of learning. According to Andersen (1979), his lack of correlation between effective nonverbal communication and standardized measurements of learning may have been due to the type of class in which the study was conducted. The testing sample was composed of communication major students who had already been exposed to the relevance of nonverbal communication (Andersen, 1979).

Additionally, Chesebro (2003) researched the correlation between instructors' nonverbal communication immediacy and students' perceptions of learning. The study was conducted with 196 undergraduate students from a large mid-Atlantic university. In this study, two variations of instructors' nonverbal communication immediacy were presented to students via videotapes. One variation included the instructor lecturing while making eye contact with the camera, using effective paralanguage, and kinetics. The other variation included the same instructor lecturing without making eye contact with the camera, not using effective paralanguage, and poor kinetics. The lecture was over a topic not covered previously in the class.

The results of this study showed a positive correlation between instructors' nonverbal communication immediacy and students' perceptions of learning. However, the data showed no correlation between instructors' nonverbal immediacy and students' performance on standardized measurements of learning (Chesebro, 2003).

Similarly, a study conducted by Frechette and Moreno (2010) looked at the relationship between instructors' nonverbal communication within the online environment at a southwestern American university. A cohort of 93 college students watched one of five lectures about the same material on a computer screen with one of these five instructor elements:

1. No instructor, just lecture audio
2. A non-animated instructor with audio
3. An instructor with effective facial nonverbal communication that lip-synched the lecture and utilized varied facial expressions
4. An instructor that only utilized hand and arm gestures, but did not fluctuate facial expressions or lip-synched
5. An instructor that utilized hand and arm movements, as well as lip-synched the lecture and used facial expressions. (p. 66)

Students then completed a pretest and a posttest over the presented material.

The results from this study showed no significant changes in standardized measurements of learning. Since the instructor was not physically in the room suggests a positive relationship between instructor nonverbal communication and standardized measurements of learning was lost in the absence of a physical instructor (Frechette & Moreno, 2010).

This literature review addressed inconclusive data of the relationship between instructors' nonverbal communication and students' standardized measurements of learning. While the review in the previous section stated an agreement within the

literature about nonverbal immediacy's effect on positive student perception of learning, no such agreement is currently held for standardized measurements of learning.

The primary goal of the current study was to directly add to this literature. The methodology outlined in Chapter Three was specifically organized and delivered in order to shed light on the relationship between instructors' nonverbal communication and students' performance on standardized measurements of learning, as well other student learning elements. One of those learning elements included the perception of instructor credibility students derived from instructors' nonverbal communication.

### **Nonverbal Communication's Effect on Perceived Credibility**

In this section, a literature review concerning students' perception of instructors' credibility by their nonverbal communication immediacy will be covered. This research document set forth to add data to the literature about nonverbal communication's impact on perceived credibility.

Perceived instructor credibility by the student is an important element of that student's likelihood of learning. Researchers McCroskey and Young (1981) concluded, "Research generally has supported the proposition that source credibility is a very important element in the communication process, whether the goal of the communication effort be persuasion or the generation of understanding" (p. 57). As instructors actively pursue student understanding of course material, the instructor's perceived credibility should be highlighted. Although verbally explaining one's own credentials assists with building credibility, nonverbal communication throughout the instructor-student relationship may build a stronger confidence from the student toward the learning objectives (Pogue & AhYun, 2006).

Researchers studied the relationship between student success and instructors' perceived credibility according to their students (Andersen, 1973; Pogue & AhYun, 2006; Teven & McCroskey, 1996). Research has also found a positive relationship between instructors' communication and students' perception of those instructors' credibility (Chamberlin, 2000; Jaasma & Koper, 1999; Teven & Hanson, 2004; Teven & McCroskey, 1996; Thweatt & McCroskey, 1988).

However, more data need to be collected regarding how nonverbal communication specifically affects perceived credibility. Past research has found positive correlations between students' perceived credibility of their instructor and verbal communication (Beatty & Behnke, 1980). For example, instructors who consistently use positive word choices like "good" or continually use the same industry terminology are seen as more credible (Beatty & Behnke, 1980).

This correlation posed enlightening information. Effective nonverbal communication's role in instructors' perceived credibility could ultimately increase student achievement (Kelley & Gorham, 1988; Nussbaum & Scott, 1979; Richmond et al, 1987; Schonwetter, 1993; Sime, 2006). A study by Martin, Chesebro, and Mottet (1997) found that high instructor's perceived credibility resulted in higher amounts of student motivation in the classroom. A study also found that instructors' perceived credibility caused students to rate the instructor and course higher on evaluations (Beatty & Zahn, 1990). Notably, low amount of vocal variations had the most negatively impactful results on speakers' perceived credibility (Addington, 1971).

### **Gender Differences in Response to Nonverbal Communication**

In this section, studies concerning instructors' nonverbal communication's relationship with students' gender are outlined. Some studies state that women are more perceptive of nonverbal communication than men (Blanck, Rosenthal, Snodgrass, Depaulo, & Zuckerman, 1981; Hall, 1978; Isenhardt, 1980). A notable research study by Hall (1978) compiled and analyzed 75 different studies that measured the results of male and female participants decoding nonverbal communication. Hall's research found that female participants were better at analyzing nonverbal communication than their male counterparts. Hall also stated that results did not vary by the gender of the speaker.

Because the current study's methodology did not include a female instructor, an extensive literature review was conducted for past studies that found differences in instructors' nonverbal communication behavior by gender.

The act of smiling has been shown to produce a more positive response for women than for men (Deutsch, LeBaron, & Fryer, 1987; Hall & Halberstadt, 1986; Henley, 1977). Deutsch et al. (1987) showed pictures of smiling and non-smiling males and females to participants in their study. "When not smiling, women were perceived as less happy, less carefree and less relaxed than were men" (Deutsch et al., 1987, p. 341). This research concluded that women are "evaluated more harshly than men" (Deutsch et al., 1987, p. 341). This research could correlate to the relationship between a female instructor and her students.

Research suggested that a negative perception of female instructors could directly affect students' perception of learning. Restating Mehrabian's (1981) theory, "people approach what they like and avoid what they don't like" (p. 22). One could hypothesize



that nonverbal communication is more important for female instructors than male instructors in order to build positive instructor-student relationships.

Research has shown that females smile more than males (Hall & Halberstadt, 1986). Combining these two theories, one can theorize that a woman smiling more than a man not only happens in society, but also is important for instructor-student bonding.

Lindon and Lindon (2008) stated:

The muscles in the face are used, more or less consciously, to produce smiles, frowns, or puzzled or doubtful expressions. Your face can look more or less welcoming, open or closed. A smile is a typical welcome. An immovable, fixed expression seems uninviting and lacking emotion. On the other hand, marked frequent changes in facial expression can be distracting for clients, who focus on the messages passing across your face than on telling you what they wish to say. You need to aim for a calm and alert expression that is not wooden and adjusts appropriately to what clients say to you. (p. 62)

A number of other nonverbal communication differences between males and females have been researched in the literature. Henley (1977) stated, “Women tend to smile more frequently, have more eye contact, and take up less space in proportion to their body size than men, while men initiate touch and interrupt more often than women” (p. 57).

Eye contact has also been a strong area of research between the two genders. Females “maintain more eye contact than males regardless of the other person’s sex” (Baird, 1976, p. 182). Exline, Gray, and Schuette (1965) also found that “among same-sex communicators that females generally had more eye contact with each other than did

males” (p. 10). Because instructors’ eye contact has been associated with students seeking further information about the class material on their own, eye contact regardless of the instructor’s gender, is an effective communication strategy (Myers & Knox, 2001).

Eye contact by both genders of instructors has been found to increase nonverbal communication immediacy. Richmond (1990) stated that an instructor who does not effectively use eye contact with students is perceived as unapproachable, uninterested, and discourages student interaction.

Although research states that women are better at nonverbal communication, research has also found that males find women utilizing dominant nonverbal behaviors to be less likeable, less influential, and more threatening compared to men utilizing the same behavior (Carli, LaFleur, & Loeber, 1995).

Other researchers found similar results; men showing dominant nonverbal behaviors similar to those required to lead a classroom are more effective at influencing individuals than women, especially with a male audience (Driskell, Olmstead, & Salas, 1993; Eagly, Makhijani, & Klonsky, 1992; Henley & Harmon, 1985; Keating, 1985; Lee & Ofshe, 1981; Petty & Lee, 1975; Rosen & Jerdee, 1973). Notably, past research has found differences between the audience’s gender when associated to the speakers’ nonverbal communication.

Rosenthal and DePaulo (1979) concluded that females focus more attention to a speaker’s face than do their male counterparts. This, along with the research that states women are better at nonverbal communication than men, would suggest female students would be more perception of differing nonverbal behaviors. Although this information implied females would rate higher in perceived learning, this study did not answer the

question of whether or not instructors' nonverbal communication affects students' standardized measurements of learning differently based on gender.

Research has supported these gender differences in nonverbal communication in recent years (Mast, Hall, Klakner, & Choi, 2008). These researchers observed that people expected women to hold stronger eye contact and have a more receptive body stance than their male counterparts. Another study conducted by these researchers found that female physicians not utilizing effective nonverbal communication received much lower patient satisfaction ratings than their male colleagues (Mast et al., 2008).

Although gender differences in nonverbal communication have been apparent in research for over 20 years, one study concluded this data may change. Diekman and Goodfriend (2006) found through numerous studies that as social roles change over time, so does the value of gender differences in expected nonverbal communication. The researchers theorize as stereotypes of gender roles continue to relax, so will the different expectations of male and female nonverbal communication (Diekman & Goodfriend, 2006).

### **Learning Effective Nonverbal Communication**

In this section, studies concerning the act of learning effective nonverbal communication are outlined. As discussed, nonverbal communication is necessary for effective communication (Chesebro, 1999, 2003; Houser & Frymier, 2009). It is not enough for instructors to speak clearly and use an effective outline for class lecture. If it is true that good teaching resembles theatrical performance (Kelly & Kelly, 1982), not all instructors have a background in such a performance. This literature review was designed to look at past research of learning effective nonverbal communication.

Unfortunately, learning new nonverbal communication skills is not an effortless task (Cole, 2000; DePaulo, 1992). Cole (2000) stated that nonverbal communication immediacy is derived at the subconscious level. Because nonverbal communication is under little conscious control, it can be difficult to modify (DePaulo, 1992).

Recent studies shed light onto specific areas of nonverbal communication manipulation. Peterson's (2005) research study concluded that a small amount of body language training does result in positive nonverbal behaviors from participants. Some nonverbal communication elements are much more difficult to alter than others. Voice fluctuation, for example, can be improved through training, but is more difficult than other elements like hand and arm movements (Tubbs & Moss, 2006). Mason (2003) stated, "A speech delivered in a mono tone is not likely to be well received. Vary your tone and aim to achieve vocal clarity. Try and express your emotion with your voice... A lot of expression in the voice is a good thing" (p. 41).

Nonverbal communication during first impressions has shown to have a definite impact on relationships and can affect future interactions (Ambady & Skowronski, 2008). People also often make strong inferences about others based on their initial nonverbal communication tendencies (Hall & Andrzejewski, 2008).

The face is the source of the majority of emotional information (Knapp & Hall, 2010; Leathers & Eaves, 2008; Richmond & McCroskey, 2004) which can support or harm relationship bonding. Instructors should be aware of their own facial expressions in order to nurture strong instructor-student relationships (Leathers & Eaves, 2008).

Ishikawa, Hashimoto, Kinoshita, and Yano (2010) conducted a study with 106 preclerkship medical students to determine if effective nonverbal communication can be

taught effectively. The study directly looked at teaching people in the medical field better nonverbal communication while interacting with patients.

After a 3-hour training session on nonverbal communication, data were collected. The “group intended to pay more attention to nonverbal communication during the medical interview, suggesting that the intervention had increased their awareness of the importance of nonverbal communication” (Ishikawa et al., 2010, p. 861). These results were observed to be short-term. The researchers concluded, “Further, a single 3-h intervention might not be sufficient to change the nonverbal communication performance” (Ishikawa et al., 2010, p. 863). Future research needs to be conducted on successful forms of teaching effective nonverbal communication for long-term use.

### **Conclusion**

The literature is expansive in the area of nonverbal communication within the classroom environment. As “student success is one of the primary concerns to educators” (Pogue & AhYun, 2006, p. 331), past research along with this study may benefit professionals in the education environment.

This literature review has addressed research on nonverbal communication, specifically nonverbal communications effect on student perceptions of learning and standardized measurements of learning, the correlation between gender and speaker credibility when associated with nonverbal communication, and learning effective nonverbal communication.

Research regarding the relationship between instructors’ use of nonverbal communication immediacy during class lectures, and students’ academic performance is beneficial to higher education (Comadena et al., 2007; Galloway, 1971; Lemire, 2002).

In order for instructors to be effective in the classroom, they need to know how students effectively communicate (McCroskey, 2002; Richmond et al., 2003). Effective lectures can improve the student learning experience (Maher, 2008). The literature points toward some areas where nonverbal communication immediacy can positively affect in-class lectures.

Although a number of studies have been conducted since the 1970s, more data are needed to answer key questions concerning instructors' nonverbal communication. These key questions outlined in the hypothesis and research questions from Chapter One will be examined in this study's methodology. Chapter Three will outline the methodology and provide the research instrumentations that were used to collect this study's data.

## **Chapter Three: Methodology**

### **Introduction**

The purpose of this study was to analyze the relationship instructors' nonverbal communication had on students' learning in the higher education context at a mid-sized, four-year liberal arts university in the Midwest. The independent variable, instructors' nonverbal communication, was systematically altered in order to find any correlation to the dependent variable: students' learning. All data collected in this research study are primary.

This was a mixed method study utilizing quantitative and qualitative research. This study's quantitative method included pretest, posttest, and surveys collected from students in four introductory speech courses and one participant pool. Test scores and survey results were compared for courses taught with an instructor utilizing effective nonverbal communication and courses taught with an instructor utilizing poor nonverbal communication. Both types of classes had a third instructor trained in effective and poor nonverbal communication present to verify the procedures.

This study's qualitative method asked volunteers from each of the five groups to participate in a focus group. The focus group probed deeper into students' perceptions of their own learning and how they viewed the instructor during the class lecture. The regular professor of each of the four introductory speech classes approved the lecture and collection of data for this experiment on December 11th, 2012. The Institutional Review Board approval was given on April 25, 2013 (Appendix A), allowing the collection and analysis of the data.

The methodology detailed in the following sections include: problem statement; population of study and description of participating university; sample of study; lecture development; study design; methodology; instruments; gender correlation; and limitations.

### **Problem Statement**

The higher education environment is dedicated to supplying students with the clearest instruction in all areas of study. Past studies found a strong correlation between instructor clarity and increased student academic achievement (Alexander et al., 1979; Hines et al., 1985; Smith & Cotten, 1980; Smith & Land, 1981). If instructors are to provide quality lectures in the classroom, research is needed to support the educational environment.

The purpose of this study was to investigate the relationship between instructors' nonverbal communication and student learning. Past research has established contradicting findings related to instructor nonverbal communication and students standardized measurements of learning. This study added to the literature pertaining to this relationship.

Secondary research goals included attempts to correlate instructors' nonverbal communication with: students' perception of learning; students' gender related to their perception of learning and standardized measurements of learning; instructors' perceived credibility; a comparison of data between students in a structured class and those from a participant pool.



### **Population and Description of Participating University**

Fraenkel and Wallen (2006) stated “A population is the group to which the study are intended to apply” (p. 103). I chose a university for this study which I felt would be representative of the higher education environment of the United States. The population of this study included all undergraduate students from a private, midsized liberal arts university in the Midwest. Located outside a major metropolitan area, this university was established in the 1800s as an all women’s college and became co-ed in the mid-1960s.

According to the University Ledger: A Fact Book (Office of Institutional Research, 2011), in fall 2010, the university had a total of 7,596 students, of which, 3,108 were men, 3,762 were women, and 726 did not self-identify. The student population consisted of 3,750 white students, 1,331 racial/ethnic minorities, and 743 international students. There were 1,772 students who did not self-identify their race.

### **Sample of Study**

The sample of study included 85 undergraduate students during the spring 2013 semester. Of that sample, 80 students were from four sections of an introductory speech course and consisted of 40 males and 40 females. There were an additional five students in this study who were retrieved randomly from a self-selecting participant pool. All five students from the participant pool were male. There was no prior relationship between any of the students and any of the three instructors of this study.

The sample demographic of students in the effective nonverbal communication classes, poor nonverbal communication classes, and participant pool are represented in Table 1.

Table 1

*Gender of Samples*

<i>Poor Nonverbal Immediacy Sample</i>		
<b>Gender</b>	<b>N</b>	<b>%</b>
Male	21	54%
Female	18	46%
N = 39		
<i>Effective Nonverbal Immediacy Sample</i>		
<b>Gender</b>	<b>N</b>	<b>%</b>
Male	19	46%
Female	22	54%
N = 41		
<i>Effective Nonverbal Immediacy Participant Pool</i>		
<b>Gender</b>	<b>N</b>	<b>%</b>
Male	5	100%
N = 5		

The process by which the sample was recruited allowed for a wide range of participants. All undergraduate students were required to take the introductory speech course used in this study as a general education requirement. Because of this broad class requirement, no academic majors were left out. Prior studies examining instructors' nonverbal communication's relationship to student learning utilized classes specifically for communication majors (Andersen et al., 1981). The sample size data from this study

could be generalized throughout the university with students from varying academic majors.

The participant pool students received extra credit in their psychology class for participating in this study. Although no academic weight was connected to this experiment for the introductory speech course students, I wanted to compare the results with students that were not obligated to their regular class environment and perhaps hold receiver apprehension. Wheelless (1975) stated that receiver apprehension is “the fear of misinterpreting, inadequately processing, and/or not being able to adjust psychologically to messages sent by others” (p. 263). This study sought to examine any relationship the classroom environment had on this apprehension as related to nonverbal communication from the instructor.

The study of receiver apprehension has showed levels of audience anxiety (Ayres, Wilcox, & Ayres, 1995). These researchers found that levels of anxiety increased when in an environment of evaluation such as a classroom. This methodology was strategically developed to research any difference in responses from participants not in this personally evaluated class environment where apprehension could be a threat to validity.

It should be noted that all students in the participant pool were self-chosen, but were not made aware of the purpose of the study beforehand. These students were aware they were actively playing a part in an experiment. The introductory speech students were present due to attendance policies of the university, but their participation in the collection of data was voluntary.

### **Developing the Lecture**

In order to maximize the validity of this study's data, the development of the lecture was important; the exact same lecture about persuasion techniques was used for all five sections. A memorized script and complimenting PowerPoint presentation were used in every course. The two lecturing instructors remembered the lecture script so not to verbally give one course more or different information than the others.

The third instructor, who sat in the back of the classrooms, had a copy of the script in front of her during the presentations to make sure the lecturing instructors did not deviate from the script. All three instructors met twice before the experiment dates to practice the lecture and build a consistent verbalization of information.

### **Study Design**

To study the relationship between instructors' nonverbal communication and student learning, several hypotheses were researched:

**Hypothesis #1:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by posttest scores.

**Hypothesis #2:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by comparison of pretest and posttest scores.

**Hypothesis #3:** Female students in the class taught by the instructor who have been trained in effective nonverbal communication will have greater knowledge retention than male students, as measured by gain in pretest to posttest scores.

**Hypothesis #4:** Female students in the class taught by the instructor who has not been trained in effective nonverbal communication will have greater knowledge retention than male students, as measured by gain in pretest to posttest scores.

**Hypothesis #5:** There will be a relationship between the type of nonverbal communication delivered and knowledge gained as measured by posttest scores.

**Hypothesis #6:** Students will report they learn more from an instructor trained in effective nonverbal communication compared to an instructor not trained in effective nonverbal communication, as measured by percentage of agreement with prompts on perception survey results.

**Hypothesis #7:** The observation of effective versus non-effective nonverbal communication will affect how knowledgeable students perceive the instructor to be, as measured by percentage of agreement with prompts on perception survey results.

### **Research Questions**

I investigated the following research questions to provide qualitative data to this research study:

**Research Question #1:** What is the relationship between instructors' use of nonverbal communication and students' perception of how much he or she has learned as measured by responses during focus group discussion?

**Research Question #2:** What is the relationship between instructors' use of nonverbal communication and students' perception of the instructors' knowledge about the lectured subject as measured by responses during focus group discussion?

### **Methodology**

This experiment utilized four introductory speech courses all regularly taught by the same instructor. Prior to the experiment dates, the regular instructor informed students that a guest speaker would be presenting during the following class. The instructor was not in the room for any of the four classes to negate any student apprehension to complete the voluntary tests, survey, or focus group. The lecture topic fit within the classes' current class discussion but was not previously covered.

Three instructors actively contributed in this study. Instructor A's (myself) responsibility was to instruct two class lectures utilizing effective nonverbal communication. Instructor B's responsibility was to instruct two class lectures utilizing poor nonverbal communication. Instructor A and B were demographically similar – mid-20s, white, male, and dressed similarly. Moore et al. (2010) stated that personal appearance including body type, body image, and clothing directly affects the formation of first impressions.

Instructor C's responsibilities included: to make sure instructor A and instructor B stayed to the lecture script by verbally giving the same information; verified instructors utilized their nonverbal cues by completing a worksheet (Appendix E); took notes on the students' nonverbal communication during lecture; and lead the focus groups. Instructor A lectured on April 29, 2013 at 9 and 10 A.M. and instructor B lectured on April 29, 2013 at 2 P.M. and April 30, 2013 at 11 A.M.

To begin class, instructor C sat in the back of the room and the lecturing instructor (A or B) prepared the PowerPoint for the lecture. The same PowerPoint was used for all five sections. The lecturing instructors did not speak with any students prior to the beginning of the lecture to negate any instructor-student relationship bonding.

Students were given a pretest (Appendix F) upon entering the class, and asked to complete the questions to the best of their knowledge. As this information was new to students, any questions they knew had been learned outside of this class. Students were told not to fill in answers during the lecture, but they were able to take notes if they wished, and were also instructed to turn their tests over when finished.

Once all tests were turned upside down, the lecturer began the scripted presentation. Instructors A and B both gave scripted greetings to the audience but did not state any amount of experience they had in the field. Instructors A and B presented the entire scripted material in about 30 minutes. Instructor A walked around the front of the classroom while utilizing a wireless clicker to navigate through the PowerPoint. Instructor A also frequently used hand gestures, strong student eye contact, and fluctuated his voice and facial expressions.

Instructor B stood behind the computer monitor podium and navigated through the PowerPoint via the computer mouse. Instructor B also used minimal hand gestures, little student eye contact, and rarely fluctuated his voice and facial expressions. Instructor B used minor amounts of these nonverbal techniques so not to be unnatural and lead students to believe they were being deceived.

During the lecture, no questions were allowed by students to maintain consistency and strengthen adherence to the scripted material. Upon completion of the presentations,

instructors A and B gave a survey to students that asked for students' perceptions of the lecture/instructor (Appendix D). This data will be outlined in Chapter Four.

While students completed the survey, instructors A and B then handed out the posttest (Appendix F). The pretest and posttest questions and answers were exactly the same. This study compared the results of pretest/posttest scores between the two nonverbal communication variables in Chapter Four. While students completed the posttest, instructors A and B told the class that instructor C would conclude the class session. Instructors A and B then left the classroom, and instructor C came to the front of the room.

Once all surveys and tests were complete, instructor C spoke to the class. This instructor told the students that the lecture was part of a dissertation experiment but all information included in the lecture was valid and pertained to their class objective. Students were given an option to be part of the experiment or opt out. Every student was given a release form (Appendix B) and students were told to fill out the form and turn it into instructor C if they wished to participate in the study. If students did not wish to participate in the study, they were told to keep the pretest, survey, posttest, and release form and discard the pages on their own.

Instructor C then asked for volunteers to be part of a focus group after class. Three volunteers from each class were given a \$5 gift card to Subway for their participation. Selection included the first three students to indicate their willingness to volunteer. Those students not participating in the focus group were then allowed to leave the classroom. The audio-recorded focus groups took between 10-12 minutes.



Students who did or did not participate in the paper data collection experiment or focus group were not identified to the regular class instructor. This was told to the students so they did not feel as if their participation would positively or negatively affect their class grade.

The exact same procedure was utilized with students from the participant pool through Lindenwood University's Psychology department. This lecture occurred on May 2, 2013 at 4 P.M. Only instructor A, presenting with effective nonverbal communication, lectured to the participant pool. Instructor C had the same jobs previously described, but the focus group included all five of the students in the pool.

All five of the participant pool students were male. In Chapter Four, I will compare test, survey, and focus group answers of the participant pool with answers given by male students in instructor A's classrooms. In Chapter Five, I will analyze the value of this information.

### **Instruments**

To strengthen validity, both qualitative – via the use of five focus groups, and quantitative methods – via the use of pretests, posttests, and surveys, were used. The next section included a detailed description of the instruments used to collect data: pretest, survey, posttest, and focus group.

### **Pretest**

Students in each section took the same pretest (Appendix F). The test consisted of six questions, four short answer and two multiple choice. A total of 13 points were possible to achieve. As this information was not previously covered in this particular class, any answers students knew had been learned outside of this classroom. Students

were told not to include their name on this test or the following survey and posttest. The average time spent on the pretest was 4-6 minutes, during which the instructor remained silent.

### **Survey**

Similar to Richmond (1990), Frymier (1994), and Christophel and Gorham (1995), students were asked to evaluate the instructor and their own perceptions immediately following the end of the lecture. Students in each section took the same survey (Appendix D). The survey consisted of eight questions: student gender identification (male/female), five 4-point Likert-scale questions ranging from 1 (strongly disagree) to 4 (strongly agree), one yes/no question, and one 4-point Likert-scale question identifying perceived instructor's years in the profession (less than 1 year – more than 5 years).

It should be noted that I chose the 4-point Likert-scale instead of the 5-point Likert-scale, to exclude the option of indifference. While some students may have chosen this option if provided, this survey obligated students to pick a positive or negative answer. The extent of their positive or negative answer was up to them (slightly agree, strongly agree).

The following tables represent the data collected from this study's surveys. Table 2 represents answers from the poor nonverbal communication courses, Table 3 represents answers from the effective nonverbal communication courses, and Table 4 represents answers from the participant pool.

Table 2

*Poor Nonverbal Immediacy Survey*

<b>Question</b>	<b>Strongly Disagree</b>	<b>Slightly Disagree</b>	<b>Slightly Agree</b>	<b>Strongly Agree</b>
I enjoyed the presentation	9	13	9	8
I feel that I learned a lot from the material presented by the instructor	7	12	14	6
I liked the instructor's presentation style	15	16	8	0
I think the instructor is credible in the topic of persuasion	11	7	14	7
I think an instructor's nonverbal communication during lecture affects how much I learn	10	4	10	15
	Yes	No		
I would take a course with this instructor	9	29		
	Less Than 1 Year	1-2 Years	3-5 Years	More Than 5 Years
How many years of experience do you think the instructor has	28	10	1	0

Table 3

*Effective Nonverbal Immediacy Survey*

<b>Question</b>	<b>Slightly Disagree</b>	<b>Slightly Disagree</b>	<b>Slightly Agree</b>	<b>Strongly Agree</b>
I enjoyed the presentation	1	0	16	20
I feel that I learned a lot from the material presented by the instructor	1	1	15	20
I liked the instructor's presentation style	1	1	11	27
I think the instructor is credible in the topic of persuasion	1	1	8	30
I think an instructor's nonverbal communication during lecture affects how much I learn	1	2	17	20
	Yes	No		
I would take a course with this instructor	36	4		
	Less Than 1 Year	1-2 Years	3-5 Years	More Than 5 Years
How many years of experience do you think the instructor has	2	16	17	5

Table 4

*Participant Pool Survey*

<b>Question</b>	<b>Strongly Disagree</b>	<b>Slightly Disagree</b>	<b>Slightly Agree</b>	<b>Strongly Agree</b>
I enjoyed the presentation	0	0	0	5
I feel that I learned a lot from the material presented by the instructor	0	0	1	4
I liked the instructor's presentation style	0	0	0	5
I think the instructor is credible in the topic of persuasion	0	0	0	5
I think an instructor's nonverbal communication during lecture affects how much I learn	0	0	4	1
	Yes	No		
I would take a course with this instructor	4	1		

**Posttest**

Student in each section took the same posttest (Appendix F). The posttest included the same exact questions as the pretest. Positive results of this study are quantified by an increase in correct answers from the pretest to the posttest. The comparison of test scores by the nonverbal communication variable is presented in

Chapter Four. Table 5 provides pretest and posttest data from the poor nonverbal communication classes. Table 6 provides pretest and posttest data from the effective nonverbal communication classes. Table 7 provides pretest and posttest data from the participant pool.

Table 5

*Poor Nonverbal Immediacy Test Results*

<b>Female Pretest</b>	<b>Female Posttest</b>	<b>Male Pretest</b>	<b>Male Posttest</b>
0	8	2	6
1	9	2	8
2	10	1	11
1	8	3	12
1	10	0	5
1	7	1	0
3	4	0	8
2	12	1	8
3	9	1	10
2	11	0	6
0	7	2	8
1	11	0	5
0	0	0	10
0	5	2	7
3	10	2	5
2	7	1	6
2	12	0	8
2	8	1	9
		0	11
		1	6
		0	0

Table 6

*Effective Nonverbal Immediacy Test Results*


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<b>Female Pretest</b>	<b>Female Posttest</b>	<b>Male Pretest</b>	<b>Male Posttest</b>
2	9	1	11
0	8	3	8
3	11	1	10
0	9	1	7
0	12	2	10
2	11	2	13
1	11	1	10
1	12	1	12
1	11	2	6
0	9	1	9
0	11	1	11
1	12	1	13
0	8	0	11
0	12	2	8
0	9	0	7
2	12	1	13
0	6	3	13
0	12	1	9
2	13	1	9
2	11		
2	13		
0	10		

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Table 7

*Participant Pool Test Results*

Pretest	Posttest
0	9
2	12
1	8
1	6
2	10

**Focus Group**

Following the lectures, volunteers were asked to participate in a focus group. The first three volunteers were given a \$5 Subway gift card. All five of the participant pool individuals participated in the focus group with no reward. The non-lecturing instructor led all five of the focus groups to minimize bias from students' answers about the instructor they discussed. The same questions were given to each of the five focus groups, but there was room for the instructor to ask follow-up questions when further information was needed.

The focus group questions (Appendix C) included six open-ended questions to begin the conversations. All of the students were verbally told and presented in writing of their right to end the interview when requested. Students consented to this in writing (Appendix B). The focus groups took from 10 to 12 minutes.

**Focus Group Data Analysis**

Focus group audio files were recorded and secured for confidentiality. Each of the five focus group audio files were transcribed, and were reviewed numerous times to identify themes. Three other participants reviewed the audio files to develop their own



themes independently. I then compared themes for validity purposes. These themes are presented in Chapter Four.

The standardized questions for the focus groups were as follows:

- How much do you feel you learned from the presentation?
- How do you feel about the instructor's presentation style?
- How do you feel the presentation could have improved?
- How do you feel an instructor's nonverbal communication affects your learning?
- How do you feel an instructor's nonverbal communication affects how credible you view them in the area of the lecture?
- Do you feel you learn more from an instructor who utilizes effective nonverbal communication?

### **Gender Correlation**

The study also looked at any difference between the instructors' nonverbal communication with respect to male student learning and female student learning. Students identified their gender on the surveys (Appendix D). The survey, pretest, and posttest were turned in together so gender could also be used for the standardized measurements of learning data. Those results pertained to hypothesis 3 and 4 are outlined in Chapter Four.

### **Confidential Treatment of Data**

All necessary steps were taken to keep student information confidential. Pretests and posttests did not include any identifying material of the student. They were, however, connected with the students' surveys for a short time. The only identifying material on the surveys was a gender identification question that asked students to circle

male or female. Immediately after data calculations, tests and surveys were disconnected. Informed Consent for Participation (Appendix B) contained students' full names and contact information. Student names were never connected with test scores or survey data.

The regular professor of each of the four classes used in this study was never told who did or did not participate in the experiment. Additionally, the professor was not told which students scored high and which students scored low on the tests. The professor was given an attendance sheet that outlined which students were present during each class session.

Although three additional individuals reviewed test and survey answers for validity, I was the only person to see the Informed Consent for Participation pages. The Informed Consent for Participation pages were kept confidential in a locked office at all times. All data will be shredded three years after doctoral completion.

### **Limitations**

The purpose of the research was to contribute additional empirical data to the current field of research regarding the role of instructors' nonverbal communication pertaining to student learning.

Although the data were collected from a strategically gathered study, a number of limitations were included. The limitations leave room for additional research to add to the literature. Fraenkel and Wallen (2006) defined validity as, "The degree to which correct inferences can be made based on results from an instrument: depends not only on the instrument itself but also on the instrumentation process and the characteristics of the group studied" (p. G-9). This study also planned for internal and external validity. Yu

and Ohlund (2010) define internal validity as the degree in which data accurately describe reality. This study was planned and executed to retrieve data from a real class lecture supplying the same information.

Fraenkel and Wallen (2006) described external validity as the capability to generalize findings across target populations. Notably, the course used for this experiment was a general study course, no academic majors were excluded. Utilizing this course may allow for these research findings to generalize to the entire population of the university.

With an experiment of this type, a number of variables were apparent. A strategic methodology outlined in this chapter was developed to reduce the amount of variability between the cohorts of students. Limitations to this methodology are noted, but are not believed to drastically alter this study's final data. The research study had the following limitations:

1. Due to the timetable, a female instructor was not utilized to compare students' scores to the male instructors' classes. Although I completed an extensive literary review on this area, future research to better understand male vs. female effectiveness of nonverbal communication in higher education teaching would be needed.
2. Due to the varying classroom conditions, it is difficult to control every aspect of the classroom's learning condition (classroom time, room condition etc.).
3. Some survey questions forced students to choose from a variety of answers. These answers may have resulted in students answering differently than if essay

questions were given. Multiple-choice questions were chosen to promote completeness.

4. Due to the ethical restraints, the instructors were not able to perform their role for an entire semester. Only one day from each class was utilized. An entire semester utilizing these nonverbal communication variables would result in further data.

5. This study's population was a convenience sample of the United States colligate system. The data drawn from this study specifically represent one university.

### **Conclusion**

The purpose of this study was to research the relationship between instructors' nonverbal communication and student learning. Chesebro (1999) stated that nonverbal communication assisted with message clarity, thus gaining further student attention. This study's experiment set to find any correlation between message clarity utilizing nonverbal communication and students' academic achievement.

Chapter Three outlined how this will be examined through this mixed methods study utilizing quantitative and qualitative methods of discovery. A strategically organized methodology was utilized in order to find valid data. Chapter Three also discussed the population and sample, as well as outlined the research instruments. In Chapter Four, I will present the study's quantitative and qualitative data results.

## Chapter Four: Results

### Introduction

The purpose of this study was to examine the relationship between instructors' nonverbal communication and student learning. This chapter has outlined the results from the methodology in Chapter Three. Chapter Four will present data concerning the study's sample, test results, survey results, and focus group results and Chapter Five includes a discussion of the data.

### Analysis of Data

In order to address this study's research hypotheses, multiple analyses of data were conducted, including  $z$ -tests for difference in means,  $z$ -tests for difference in proportion, and Pearson Product Moment Correlation Coefficient (PPMCC).

**Null Hypothesis #1:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will not have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by posttest scores.

Using a one-tailed  $z$ -test comparison for means, with a 95% level of confidence, the following results were calculated for posttest scores from the effective nonverbal communication classes and the poor nonverbal communication classes (see Table 8).

Table 8

*Posttest Scores: Effective Nonverbal Communication and Poor Nonverbal*

*Communication*

*z-Test: Two Sample for Means*

	Effective Nonverbal	Poor Nonverbal
	Communication	Communication
Mean	10.29	7.62
Known Variance	4.01	9.61
Observations	41	39
Hypothesized Mean	0	0
Difference		
Z	4.55	4.55
P(Z<=z)	.000005	.000005
z Critical one-tail	1.65	1.65

There was a decrease in the mean scores in all indicators of test scores. This difference was statistically significant with a  $z$ -test value of 4.55 compared to the critical value of 1.65, so the null hypothesis could be rejected during this time frame. Data support the alternate hypothesis that students in the effective communication classrooms retain greater knowledge than those in non-effective communication classrooms, when considering posttest scores.

**Null Hypothesis #2:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will not have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by comparison of pretest and posttest scores.

Using a one-tailed  $z$ -test comparison for means, with a 95% level of confidence, the following results were calculated for a comparison between pretest and posttest scores from the effective nonverbal communication classes and the poor nonverbal communication classes (see Table 9).

Table 9

*Pretest/Posttest Comparison: Effective Nonverbal Communication and Poor Nonverbal Communication*

*$z$ -Test: Two Sample for Means*

	Effective Nonverbal Communication	Poor Nonverbal Communication
Mean	9.21	6.44
Known Variance	4.13	8.62
Observations	41	39
Hypothesized Mean Difference	0	0
Z	4.91	4.91
P(Z<=z)	.0000009	.0000009
z Critical one-tail	1.65	1.65

There was a decrease in the mean scores in all indicators. This difference was statistically significant with a  $z$ -test value of 4.91 compared to the critical value of 1.65, so the null hypothesis could be rejected during this time frame. Data support the alternate hypothesis that students in the effective communication classrooms retain greater

knowledge than those in non-effective communication classrooms, when considering comparison of post-test scores to pretest scores.

**Null Hypothesis #3:** Female students in the class taught by the instructor who have been trained in effective nonverbal communication will not have greater knowledge retention than male students, as measured by gain in pretest to posttest scores.

Using a one-tailed  $z$ -test comparison for means, with a 95% level of confidence, the following results were calculated for a comparison between female gain in pretest to posttest scores to male gain in pretest to posttest scores in the effective nonverbal communication classes (see Table 10).



Table 10

*Pretest/Posttest Comparison: Female Versus Male Knowledge Retention in the Effective Nonverbal Communication Classes*

*z-Test: Two Sample for Means*

	Female Knowledge Retention	Male Knowledge Retention
Mean	9.68	8.68
Known Variance	2.70	5.45
Observations	22	19
Hypothesized Mean Difference	0	0
Z	1.56	1.56
P(Z<=z)	.1188	.1188
z Critical one-tail	1.65	1.65

For the classroom taught with effective communication, the average gain in pretest to posttest score for females was not statistically greater than the gain for males. This difference between female and male scores was not statistically significant with a z-test value of 1.56 compared to the critical value of 1.65, so the null hypothesis could not be rejected during this time frame. Data did not support the alternate hypothesis that female students would achieve a greater gain.

**Null Hypothesis #4:** Female students in the class taught by the instructor who has not been trained in effective nonverbal communication will not have greater knowledge retention than male students, as measured by gain in pretest to posttest scores.

Using a one-tailed  $z$ -test comparison for means, with a 95% level of confidence, the following results were calculated for a comparison between female gain in pretest to posttest scores to male gain in pretest to posttest scores in the poor nonverbal communication classes (see Table 11).

Table 11

*Pretest/Posttest Comparison: Female Versus Male Knowledge Retention in the Poor Nonverbal Communication Classes*

*$z$ -Test: Two Sample for Means*

	Female Knowledge Retention	Male Knowledge Retention
Mean	6.78	6.14
Known Variance	7.83	9.53
Observations	18	21
Hypothesized Mean Difference	0	0
Z	.67	.67
P(Z<=z)	.5029	.5029
z Critical one-tail	1.65	1.65

For the classroom taught with poor nonverbal communication, the average gain in pretest to posttest score for females was not statistically greater than the gain for males. This difference between female and male scores was not statistically significant with a  $z$ -test value of .67 compared to the critical value of 1.65, so the null hypothesis could not be rejected during this time frame. Data did not support the alternate hypothesis that female students would achieve a greater gain.

**Null Hypothesis #5:** There will be no relationship between the type of nonverbal communication delivered and knowledge gained as measured by posttest scores.

I applied the Pearson Coefficient Correlation to a random sample of 45 students taken from a combination of those who attended the effective nonverbal communication and those who attended the poor nonverbal communication. The statistical test yielded .418. Comparison to the critical value of .288 allowed rejection of the null hypothesis. Data support that the type of nonverbal communication, effective or poor, is moderately related to the knowledge content retained by students when measured by posttest.

Table 12

*Comparison of Type of Communication and Posttest Knowledge Scores*

	<i>Type</i>	<i>Posttest Scores</i>
Type	1	
Posttest Scores	0.41832085	1

*Note: Critical Value = 0.288*

A simple regression was applied to the data. The coefficient of determination was .175. Therefore, at a 95% confidence level, 17.5% of the variation in posttest scores can be explained by the type of nonverbal communication available during the class session. Results of the regression analysis are listed in Table 13.

Table 13

*Regression Results for Comparison of Type of Communication and Posttest Knowledge Scores*

<i>Regression Statistics</i>	
Multiple R	0.418
R Square	0.175
Standard Error	2.441
Observations	45

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	54.33	54.33	9.12	0.00
Residual	43	256.12	5.96		
Total	44	310.44			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	5.881	1.130	5.206	0.000
Type	2.202	0.729	3.020	0.004

**Null Hypothesis #6:** Students will report they do not learn more from an instructor trained in effective nonverbal communication compared to an instructor not trained in effective nonverbal communication, as measured by percentage of agreement with prompts on perception survey results.

The indication of a positive association between students and their perceived learning was determined to be the percentage of “slightly agree” plus the percentage of “strongly agree” accumulated from questions 3 and 7 from the survey (Appendix D). A *z*-test for difference in proportion was conducted for these questions between the classes taught by the effective nonverbal communication instructor and the classes taught by the poor nonverbal communication instructor. Observable data showed a difference in the positive perception of student learning, from 87.8% in the effective nonverbal communication classes, to 57.7% in the poor nonverbal communication classes. This analysis was a one-tailed test with a 95% confidence level. The *z*-test value was 4.29, compared to the *z*-critical value of 1.65. The null hypothesis was rejected. Students do perceive that they learn more from an instructor who utilized effective nonverbal communication.

**Null Hypothesis #7:** The observation of effective versus non-effective nonverbal communication will not affect how knowledgeable students perceive the instructor to be, as measured by percentage of agreement with prompts on perception survey results.

The indication of a positive association between students and their perceived amount of instructor credibility was determined to be the percentage of “slightly agree” plus the percentage of “strongly agree” accumulated from question 5 and the number of 3-5 years plus / More than 5 years on question 6 from the survey (Appendix D). A  $z$ -test for difference in proportion was conducted for these questions between the classes taught by the effective nonverbal communication instructor and the classes taught by the poor nonverbal communication instructor. Observable data showed a difference in the students’ positive perception of the instructor’s knowledge of the subject, from 73.2% in the effective nonverbal communication classes, to 28.2% in the poor nonverbal communication classes. This analysis was a one-tailed test with a 95% confidence level. The  $z$ -test value was 5.69, compared to the  $z$ -critical value of 1.65. The null hypothesis was rejected. Students did perceive the instructor who utilized effective nonverbal communication to be knowledgeable.

In summary, the statistical analyses from the data collected from the tests and surveys (Appendix D and F) yielded the following results:

**Null Hypothesis #1:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will not have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by posttest scores. Null Hypothesis # 1 was rejected.

**Null Hypothesis #2:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will not have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by comparison of pretest and posttest scores. Null Hypothesis # 2 was rejected.

**Null Hypothesis #3:** Female students in the class taught by the instructor who have been trained in effective nonverbal communication will not have greater knowledge retention than male students, as measured by gain in pretest to posttest scores. Null Hypothesis # 3 was not rejected.

**Null Hypothesis #4:** Female students in the class taught by the instructor who has not been trained in effective nonverbal communication will not have greater knowledge retention than male students, as measured by gain in pretest to posttest scores. Null Hypothesis # 4 was not rejected.

**Null Hypothesis #5:** There will be no relationship between the type of nonverbal communication delivered and knowledge gained as measured by posttest scores. Null Hypothesis # 5 was rejected.

**Null Hypothesis #6:** Students will report they do not learn more from an instructor trained in effective nonverbal communication compared to an instructor not trained in effective nonverbal communication, as measured by percentage of agreement with prompts on perception survey results. Null Hypothesis # 6 was rejected.

**Null Hypothesis #7:** The observation of effective versus non-effective nonverbal communication will not affect how knowledgeable students perceive the instructor to be,

as measured by percentage of agreement with prompts on perception survey results. Null Hypothesis # 7 was rejected.

### **Focus Groups - Introduction**

In this section, focus groups responses are provided. Data were dictated and then coded and categorized into similar sections as recommended by Creswell (2003). Three participants, beyond myself, coded each of the focus groups to ensure the reliability of the categorization.

### **Focus Groups – Nonverbal Communication**

Body language was a continual topic in each of the focus groups. In the effective nonverbal communication classes, students described the instructor's presentation style as, "nonchalant but at the same time you could tell that he was serious about what he was talking about." Students described this instructor as professional, confident, and comfortable.

Students also favorably mentioned the presence of paralanguage behavior and eye contact. One student explained that the clear speech from the instructor stood out to her. Another student stated about the instructor, "He was standing up straight. His voice was strong. He didn't seem nervous and looked me straight in the eye."

Eye contact was an area of nonverbal communication that was expressed by a number of students as important. One student stated, "I think his eye contact was big. If (instructors) make good eye contact with me, it makes me feel much more comfortable."

The class taught by the instructor using poor nonverbal communication received a different response from students. The students described this instructor as monotone and

having poor eye contact. One student stated, “It was really hard to keep focused. I found myself doodling, or checking my cell phone.”

A student explained that she felt more connected on a personal basis if instructors use effective nonverbal communication, especially eye contact. She also stated that she did not feel important in the classroom.

### **Focus Groups – Enthusiasm**

The level of instructor enthusiasm was also mentioned throughout the focus groups. A student from the effective nonverbal communication course stated that the instructor’s nonverbal immediacy showed engagement with the students, and showed that the instructor cared about getting his message across. Another student added that the instructor’s nonverbal communication, “can show excitement and if they’re excited about the topic, it makes you a little more enthusiastic to learn about it.”

Students agreed that they enjoyed the enthusiasm from the effective nonverbal communication instructor. A student described the lecture:

He was walking back and forth while always standing upright. I’ve seen (instructors) slouch over the desk and it looks like they’re just bored and don’t want to be here. Him walking around the front of the room makes it look like he’s interested and is excited about sharing the information. That kept me interested.

Students in the poor nonverbal communication classes had a different feeling about the instructor’s enthusiasm. The focus groups agreed that there was not an enthusiastic learning environment that they would like to have had. One student stated, “I think (enthusiasm) can make the difference between whether the course seems pleasant



and fun, or just tedious because if an instructor is enthusiastic about the subject then some of that rubs off on you.”

Although the lecture was not seen as enthusiastic, some students said they enjoyed the stories and examples presented by the instructor. A student added, “I thought his examples were really good, but he could have been more empathic about them. I feel like he was a tree, just standing there.”

### **Focus Groups – Credibility**

Students were specifically asked to discuss their perceptions of the instructors’ credibility. In the effective nonverbal communication classes, students agreed that the instructor knew what he was lecturing over. One student summarized this agreement, “(Instructors’) body language in general can definitely tell you a lot about their knowledge about the subject.”

Not only did these students say the instructor was knowledgeable about the subject, they also agreed that he was highly experienced in the field. They also concurred that this credibility was important to the learning environment. One student stated, “If he didn’t look like he knows what he’s talking about, then I wouldn’t trust him or listen to him.”

Students in the poor nonverbal communication classes did not give the same positive remarks about the instructor’s credibility. One student was uneasy that the instructor did not explain his professional background. This was not an issue discussed by students in the effective nonverbal classes. A few students also questioned the statistics given in the lecture, while students believed the same statistics in the effective

nonverbal classes. In the poor nonverbal communication focus group, one student explained, “He just had random facts. I just didn’t really know where he got those from.”

### **Focus Groups – Student Learning**

Students were finally asked if their learning is impacted by the instructor’s nonverbal communication. Students from the effective nonverbal communication classes all agreed that the instructor’s nonverbal communication affects how much they learn. They all concurred that their attention to the lecture was high because of the effective use of nonverbal communication. One student stated, “Sometimes when (instructors) are speaking, I just won’t pay attention because I am bored, but I paid attention to this one.”

From the focus groups, student learning was strongly affected in the poor nonverbal classes. Five of the six focus group students said the instructor’s nonverbal communication caused them to not pay as much attention to the lecture as they know they should have, while one student said, “Well me personally, I don’t think (nonverbal communication) affects me that much. Because in other classes, you know, we have books. Whatever I don’t get from (instructors) I can get from the books.” This student went on to say, “Actually, I think I learned a lot.”

The other five students from the poor nonverbal communication group said they did not feel like they learned much from the lecture. One student stated, “I got distracted easily with doodling on my paper. So like I listened to the first half, but I don’t remember anything from the second half.” Another student stated, “I agree. I kind of wondered off. I tried focusing on the PowerPoint, but that was bad too.” Students from the effective nonverbal communication focus groups did not say anything negative about the same PowerPoint.

**Students' Nonverbal Communication**

Miller (1998) stated, "Observant teachers can tell when students understand the content presented or when they are having trouble grasping the major concepts. A student slouching sends a very different message from one leaning forward or sitting erect" (p. 18). As described in Chapter Three, a third instructor sat in the room and took notes concerning the students' nonverbal communication during each of the five lectures. The notes will be summarized in this section for each of the lectures.

During the first lecture utilizing effective nonverbal communication, the third instructor observed 19 students. During the beginning of the lecture, all 19 (100%) of the students were looking forward at the instructor. Throughout the lecture, two (11%) students were consistently using their cell phones. By the conclusion of the lecture, 14 (74%) students were making strong eye contact with the instructor.

During the second lecture utilizing effective nonverbal communication, the third instructor observed 22 students. During the beginning of the lecture, 18 (82%) students were looking forward at the instructor. Throughout the lecture, one student (5%) slept on and off. No students were on their cell phones. By the conclusion of the lecture, 18 (82%) students were making strong eye contact with the instructor.

During the first lecture utilizing poor nonverbal communication, the third instructor observed 21 students. During the beginning of the lecture, eight (38%) students were looking forward at the instructor. Throughout the lecture, six (29%) students consistently used their cell phones. By the conclusion of the lecture, 11 (52%) students were making strong eye contact with the instructor.

During the second lecture utilizing poor nonverbal communication, the third instructor observed 18 students. During the beginning of the lecture, nine (50%) students were looking forward at the instructor. Throughout the lecture, four (22%) students consistently used their cell phones. By the conclusion of the lecture, seven (39%) students were making strong eye contact with the instructor.

During the participant pool lecture utilizing effective nonverbal communication, the third instructor observed five students. During the beginning of the lecture, all five (100%) students were looking forward at the instructor. Throughout the lecture, no student used his cell phone. By the conclusion of the lecture, all five (100%) students were making strong eye contact with the instructor. It should be noted that the high level of student attention could be a result of a small group environment, thus allowing students to feel uncomfortable about not paying attention. A participant pool lecture using poor nonverbal communication was not conducted to compare results.

These student observations may lend beneficial information into the effect of instructors' nonverbal communication's role in students' academic achievement. In Chapter Five, I will further discuss the implications of positive student nonverbal communication resulting from effective instructor nonverbal communication.

### **Summary**

The analysis and review of the quantitative data from this study concluded that five of the seven hypotheses were supported. The analysis and review of the qualitative data from this study concluded that both research questions held positive results.

Results were as follows:

**Null Hypothesis #1:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will not have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by posttest scores. Null Hypothesis # 1 was rejected.

**Null Hypothesis #2:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will not have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by comparison and posttest scores. Null Hypothesis # 2 was rejected.

**Null Hypothesis #3:** Female students in the class taught by the instructor who have been trained in effective nonverbal communication will not have greater knowledge retention, than male students, as measured by gain in pretest to posttest scores. Null Hypothesis # 3 was not rejected.

**Null Hypothesis #4:** Female students in the class taught by the instructor who has not been trained in effective nonverbal communication will not have greater knowledge retention, than male students, as measured by gain in pre-test to posttest scores. Null Hypothesis # 4 was not rejected.

**Null Hypothesis #5:** There will be no relationship between type of nonverbal communication delivered and knowledge gained as measured by posttest scores. Null Hypothesis # 5 was rejected.

**Null Hypothesis #6:** Students will report they do not learn more from an instructor trained in effective nonverbal communication compared to an instructor not

trained in effective nonverbal communication, as measured by percentage of agreement with prompts on perception survey results. Null Hypothesis # 6 was rejected.

**Null Hypothesis #7:** The observation of effective versus non-effective nonverbal communication will not affect how knowledgeable students perceive the instructor to be, as measured by percentage of agreement with prompts on perception survey results. Null Hypothesis # 7 was rejected.

**Research Question #1:** What is the relationship between instructors' use of nonverbal communication and students' perception of how much he or she has learned as measured by responses during focus group discussion? This research question was addressed through a series of four focus groups. Focus group findings concluded a positive correlation between instructor's effective nonverbal communication and students' perceptions of successful learning.

**Research Question #2:** What is the relationship between instructors' use of nonverbal communication and students' perception of the instructors' knowledge about the lectured subject as measured by responses during focus group discussion? This research question was addressed through a series of four focus groups. Focus group findings concluded a positive correlation between instructor's effective nonverbal communication and students' perceptions of the instructor's knowledge about the lectured subject.

In Chapter Five, I have further examined this study's results and discussed contributions this research brings to the literature. Recommendations for future experimentation and implications to higher education have also been presented in the following chapter.



## **Chapter Five: Discussion and Reflection**

### **Introduction**

The purpose of this study was to investigate the relationship between instructors' nonverbal communication and student learning in the higher education environment. This study's primary goal was to add data to a topic in literature that is inconclusive: whether or not instructors' nonverbal communication affects students' standardized measurements of learning. This research also added data toward the relationship between instructors' nonverbal communication and: students' perceived learning; students' perceived credibility of the instructor; differences in gender achievement; and differences between achievement in the classroom environment as opposed to a participant pool.

Chapter One introduced background information of nonverbal communication, purpose of the study, research problems, definition of terms, and assumptions. Chapter Two examined the literature review of nonverbal communication studies' history, the correlation of nonverbal communication and students' perceptions of learning and standardized measurements of learning, students' perception of instructors' credibility based on nonverbal communication, genders' role in assessing nonverbal communication, and learning effective nonverbal communication.

Chapter Three identified the problem statement, population and sample of the study, development of the lecture, study design, methodology, instruments, treatment of confidential information, and limitations associated with this study. Chapter Four acknowledged the data derived from each of the instruments as they related to each of this study's hypotheses and research questions.



Chapter Five provides a summary of this study, a relationship to the literature, implications for the higher education environment, and recommendations for future research. This chapter will begin by summarizing the findings from this empirical study, along with my personal reflections.

### **Summary**

While interpreting the findings from this research study, it must be clear that a classroom analogue design was utilized. Students in the introductory speech course met during their regular class session, and listened to a typical class lecture. This lecture was students' first encounter with the instructor, and it was only for a limited time on one day. Generalization to an entire course is limited until further research can be conducted on a long-term scale. That being noted, this study provided a positive relationship between instructors' nonverbal communication and student learning.

This research study examined the relationship between instructors' nonverbal communication and student learning within the higher education environment. This study utilized a sample population of 85 undergraduate students from a midsized, Midwest university in the United States during the spring 2013 semester.

All of the participants completed a pretest, posttest, and survey while 17 students also participated in an additional focus group. Four introductory speech classes were utilized (80 students) and one participant group (five students). Within the four introductory speech classes, students were 40 (50%) male and 40 (50%) female. The participant pool consisted of five (100%) male students. Participation in the study was voluntary and students were able to end participation when requested. No student opted out of this experiment.

The independent variable in this study was the immediacy of instructors' nonverbal communication. One instructor (myself) used effective nonverbal communication and another instructor used poor nonverbal communication as outlined in Appendix E. Both instructors lectured about the same material from a pre-rehearsed script.

This study was guided by the following hypotheses and research questions:

**Hypothesis #1:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by posttest scores.

**Hypothesis #2:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by comparison of pretest and posttest scores.

**Hypothesis #3:** Female students in the class taught by the instructor who have been trained in effective nonverbal communication will have greater knowledge retention than male students, as measured by gain in pretest to posttest scores.

**Hypothesis #4:** Female students in the class taught by the instructor who has not been trained in effective nonverbal communication will have greater knowledge retention than male students, as measured by gain in pretest to posttest scores.

**Hypothesis #5:** There will be a relationship between the type of nonverbal communication delivered and knowledge gained as measured by posttest scores.

**Hypothesis #6:** Students will report they learn more from an instructor trained in effective nonverbal communication compared to an instructor not trained in effective nonverbal communication, as measured by percentage of agreement with prompts on perception survey results.

**Hypothesis #7:** The observation of effective versus non-effective nonverbal communication will affect how knowledgeable students perceive the instructor to be, as measured by percentage of agreement with prompts on perception survey results.

**Research Question #1:** What is the relationship between instructors' use of nonverbal communication and students' perception of how much he or she has learned as measured by responses during focus group discussion?

**Research Question #2:** What is the relationship between instructors' use of nonverbal communication and students' perception of the instructors' knowledge about the lectured subject as measured by responses during focus group discussion?

### **Relationship to Literature**

The findings reported in this study contributed greatly to the current body of literature on the impact of instructors' nonverbal communication on student learning. In this section, I compared the results from this study to past research in this field.

A number of studies have been conducted since the 1970s to measure the effectiveness of instructors' nonverbal communication in the classroom (Anderman & Kaplan, 2008; Andersen, 1979; Andersen et al., 1981; Christophel, 1990; Frechette & Moreno, 2010; Gorham, 1988; Gorham & Zakahi, 1990; Kearney, Plax, & Wendt-Wasco, 1985; Leathers & Eaves, 2008; Mackay, 2006; Plax et al., 1986; Powell & Harville, 1990; Richmond, 1990; Richmond et al., 1987; Sanders & Wiseman, 1990;

Sime, 2006; Woolfolk, 1978). In creating this methodology, I looked at the past research and sought to fill gaps that may have had an impact on past data, and also to see if I would have similar results.

For example, I did not videotape the two lecturing styles and present a film to students, unlike past research (Folwell, 2000; Frechette, & Moreno, 2010). I felt this methodology would take away from the impact of nonverbal communication from an instructor live in class.

I also did not stop at only surveying students about their learning during the lecture, unlike past research (Eadie, 1996; Folwell, 2000; Plax et al., 1986; Richmond et al., 1987). I went a step beyond, and actually tested students on the lectured material, followed by a focus group. Although past studied researched specific areas of this current study, no researcher examined the number of instruments found in this study.

This study's data were consistent with previous research that found a relationship between instructors' nonverbal communication and students' perception of learning (Burroughs, 2007; Chesebro, 2003; Chesebro & McCroskey, 2001; Comadena et al., 2007; Eadie, 1996; Mackay, 2006; Richmond & McCroskey, 2004; Richmond et al., 1986; Rodriguez et al., 1996). This correlation simply is a result of students' fondness of their instructor's personality (Allen et al., 2006; Burroughs, 2007).

Building a positive instructor-student relationship is worth the effort, even if the result only increases the perceived learning. As Rodriguez et al. (1996) found, students who have a strong class relationship with their instructor will be motivated to spend more time on class activities outside of the classroom. Although some researchers believe the impact of instructors' nonverbal communication ends at increasing students' perceptions

of learning (Andersen et al., 1981), one could theorize that this impact will assist students academically outside of the classroom.

This theory has also been criticized through past research. Rodriguez et al. (1996) stated that students who spend more time on class work outside of the class hold much higher perceptions of their own learning, and that this is not correlated to standardized measurements of learning.

This research study's data concluded that instructors' nonverbal communication is connected to students' standardized measurements of learning. Inconsistent with some studies, these findings are parallel to others (Burroughs, 2007; Comadena et al., 2007; Daniel, 2000; Sime, 2006). This study is significant to the literature, as this is a highly contested topic in the field of communication in education.

This study also supported the literature's correlation of instructors' nonverbal communication to students' perceptions of the instructors' credibility. Past studies found positive relationship between instructors' communication and their perceived credibility (Chamberlin, 2000; Jaasma & Koper, 1999; Teven & Hanson, 2004; Teven & McCroskey, 1996; Thweatt & McCroskey, 1988). As instructor credibility is important to the learning objective (McCroskey & Young, 1981; Pogue & AhYun, 2006), the data from this study are significant additions to the literature.

Finally, this study added to the literature on how gender affects student learning when associated with an instructor nonverbal communication variable. Although past studies concluded that women are more perceptive to nonverbal communication than men (Blanck et al., 1981; Isenhardt, 1980), this study found no statistically significant evidence

that female students are more perceptive to instructors' nonverbal communication than male students.

### **Hypotheses and Research Questions Discussion**

**Hypothesis #1:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by posttest scores.

Using quantitative measures through the use of posttest scores, statistically significant results were found to support this hypothesis. This hypothesis' intention was to investigate the relationship between instructors' nonverbal communication with students' knowledge at the conclusion of class. Posttest scores were significantly higher in the classes taught with effective nonverbal communication compared to those classes taught with poor nonverbal communication.

**Hypothesis #2:** Students in the class taught by the instructor who has been trained in effective nonverbal communication will have greater knowledge retention than those in the class taught by the instructor who has not been trained for purposes of this study, as measured by comparison of and posttest scores.

Using quantitative measures, statistically significant results were found to support this hypothesis. This hypothesis went a step further than Hypothesis #1. I measured students' test score change from pretest to posttest in each of the classes. This was done to find a specific measurement of how much students truly retained from the lecture itself. Any information the students knew prior to this lecture would be factored out of the measurement. I believe Hypothesis #2 gives a better understanding of how

instructors' effective nonverbal communication results in higher student academic achievement than instructors who use poor nonverbal communication.

**Hypothesis #3:** Female students in the class taught by the instructor who have been trained in effective nonverbal communication will have greater knowledge retention, than male students, as measured by gain in pretest to posttest scores.

Using quantitative measures, there were no statistically significant results found to support this hypothesis. This research study's findings conclude that male and female students in the higher education environment are equally perceptive to instructors' nonverbal communication.

**Hypothesis #4:** Female students in the class taught by the instructor who has not been trained in effective nonverbal communication will have greater knowledge retention, than male students, as measured by gain in pretest to posttest scores.

Using quantitative measures, there were no statistically significant results found to support this hypothesis. This hypothesis supported Hypothesis #3 in which male and female students in the higher education environment are equally perceptive to instructors' nonverbal communication.

**Hypothesis #5:** There will be a relationship between type of nonverbal communication delivered and knowledge gained as measured by posttest scores.

Using quantitative measures, statistically significant results were found to support this hypothesis. This hypothesis gave further support to Hypothesis #1 and Hypothesis #2 that instructors' nonverbal communication effects student learning.

Data from this hypothesis lead to an equation that may predict student test scores based on the instructors' nonverbal communication variable. In the equation below, X

refers to the type of communication (2 = effective nonverbal communication; 1 = poor nonverbal communication). Y refers to the students' test scores.

$$Y = 2.0202(X) + 5.881$$

The sample size of this experiment was not large enough for generalizability. The Correlation Coefficient of .418 yielded a Coefficient of Determination of 17.4%. The results of this analysis allow a 95% confidence in a contribution of 17.4% to the posttest outcomes dependent upon the type of communication used to deliver the content knowledge. Future experimentation with a larger sample size will be needed to bring validity to this equation's claim.

**Hypothesis #6:** Students will report they learn more from an instructor trained in effective nonverbal communication compared to an instructor not trained in effective nonverbal communication, as measured by percentage of agreement with prompts on perception survey results.

Using quantitative measures, statistically significant results were found to support this hypothesis. This study's data added to past research that concluded similar results (Chesebro & McCroskey, 2001; Chesebro, 2003; Comadena et al., 2007; Mackay, 2006; Richmond & McCroskey, 2004). Students strongly supported the idea that they were learning more from the effective nonverbal communication instructor compared to students in the poor nonverbal communication class.

Although their beliefs aligned with reality (standardized measurements of learning did increase in the effective nonverbal communication classes), there was a much stronger difference in beliefs compared to reality. Students' perception of learning had a larger difference between the two teaching styles compared to the standardized



measurements of learning. This means although students did learn more from the effective nonverbal communication instructor, students perceptions of their own learning had a greater difference between the two teaching styles.

**Hypothesis #7:** The observation of effective versus non-effective nonverbal communication will affect how knowledgeable students perceive the instructor to be, as measured by percentage of agreement with prompts on perception survey results.

Using quantitative measures, statistically significant results were found to support this hypothesis. Although students were not told of the instructors' experience in the lectured subject, surveys resulted in the effective nonverbal communication instructor being perceived by students as more credible than the poor nonverbal communication instructor. While only 28% of students perceived the poor nonverbal communication instructor as having three or more years of experience, 73% of students perceived the effective nonverbal communication instructor as having three or more years of experience.

**Research Question #1:** What is the relationship between instructors' use of nonverbal communication and students' perception of how much he or she has learned as measured by responses during focus group discussion?

This research question gave qualitative support to Hypothesis #6. Students in the poor nonverbal communication class stated that they were easily distracted in the poor nonverbal communication classes. This ability to get distracted could directly result in a lower amount of perceived learning from students. The focus group results also support past research that stated student comfort is associated with instructors' nonverbal communication (Chesebro & McCroskey, 1998, 2001). The overall theme of focus

groups portrayed a more positive perception of students learning in the effective nonverbal communication classes than the poor nonverbal communication classes.

**Research Question #2:** What is the relationship between instructors' use of nonverbal communication and students' perception of the instructors' knowledge about the lectured subject as measured by responses during focus group discussion?

This research question gave qualitative support to Hypothesis #7. Students went as far as questioning the instructor's statistics and complaining about the PowerPoint in the poor nonverbal communication classes, while no such remarks were made in the effective nonverbal communication classes. The overall theme of the focus groups portrayed a more positive perception of the effective nonverbal communication instructor's perceived credibility.

### **Implications for Higher Education Instruction**

This study provides significant information for those instructing in the higher education environment, specifically for lecturing. Sims and Sims (1995) stated, "Institutions of higher education are always looking for ways to make their educational initiative more effective. Higher education administrators and instructors at all levels are constantly under pressure to provide more effective and efficient services" (p. 1). These data suggests nonverbal communication immediacy is a tool to provide a more effective learning environment for students.

Since instructor clarity is essential for increased student academic achievement (Chesebro, 1999, 2003; Houser & Frymier, 2009), this research outlines specific nonverbal elements, which assist instruction:

1. Strong eye contact with students

2. Frequent use of voice fluctuations
3. Do not stand behind a podium, computer, or any other object that would form a barrier between the instructor and the students
4. Frequent use of facial expressions
5. Walk around the front of the classroom
6. Frequent use of hand gestures

This research also supports McCroskey and Young (1981) who stated, “Research generally has supported the proposition that source credibility is a very important element in the communication process, whether the goal of the communication effort be persuasion or the generation of understanding” (p. 24). This study’s data suggested a strong relationship between nonverbal communication immediacy and students’ perceptions of instructor credibility. Instructors in higher education to support student achievement should utilize this element.

As stated in the research problem of this document, this study may assist higher education deans and instructors to help increase students’ academic success. In order to do that, these educators must effectively learn how to utilize nonverbal communication immediacy within their classrooms. From this literature review, these steps need to be taken to successfully learn effective nonverbal communication:

1. Training sessions longer than 3 hours. Further studies need to be conducted to find how long an optimal training session should last
2. Learn effective hand and arm gesturing (the easiest nonverbal communication to learn)

3. Learn effective facial expression fluctuation (the most important nonverbal communication to learn)

4. Learn effective vocal variation (the most difficult nonverbal communication to learn).

As Peterson (2005) concluded, small amounts of body language training do result in positive nonverbal behaviors from those receiving training. Although altering nonverbal communication can be difficult (DePaulo, 1992), this training would benefit the academic achievement of students.

Utilizing the findings from this study, I would recommend nonverbal communication immediacy training for higher education instructors. Research needs to be conducted on the most efficient and effective nonverbal communication training for instructors.

### **Future Research**

To further validate the findings of this empirical study, further research needs to be conducted. I listed these recommendations for future research:

1. Recommend utilizing a longer timetable of experimentation. Although it is improbable to complete an entire semester with a memorized lecture script, future methodology could lengthen this study's one-day lecture to a small amount of multiple lectures.
2. Recommend utilizing a female instructor to compare data results of male instructors' student outcomes.
3. Recommend including a long-term memory instrument. As this research asked students to recall information presented to them within an hour, further

research could test how nonverbal communication impacts student learning over weeks.

4. Recommend comparing data with identical methodology from various regions of the United States. The data drawn from this study specifically represent one university in the Midwest.
5. Recommend the use of a variety of higher education courses for specific majors. This study was conducted in a general studies course with multiple student majors. Future research could look at any differences in effectiveness nonverbal communication immediacy has on different majors (biology, history, public relations, digital design, etc.).
6. Although no other universities were included, the study of this university student population may be representative of the majority collegiate population. Future research would be needed to compare student results of this experiment from other universities based on geography, diversity, and social status. Future studies could also examine the differences in data between this study and research from a university in a country other than the United States. It should be noted that research showed that nonverbal communication with a culturally diverse group of students could result in negative correlations because of the change in cultural norms (Helmer & Eddy, 2003).
7. This research study did not accumulate enough data to support quantitative differences between the in class cohorts and the participant pool cohort.

Future research with a larger participant pool cohort would be needed to justify similarities or differences between the two cohorts.

8. Recommend future studies with this same methodology utilizing a larger sample size to accept or reject the equation,  $Y=2.202(X)+5.881$ , developed from this study's Hypothesis #5.
9. Recommend research to develop an efficient and effective nonverbal communication training.

Overall, it is expected that researching effective elements of the higher education instruction is needed for the future. Instructor-student communication, specifically in terms of nonverbal communication, will continue to be a valued resource in the classroom. Such ongoing research would be beneficial to students' academic achievement.

### **Conclusion**

In order to be more effective, higher education instructors need to understand how lectures can improve students' learning experiences (Maher, 2008). One area of observation for increasing the success of lectures is instructors' nonverbal communication.

The data collected from this study, emphasized by the literature, concluded one major theme: instructors' nonverbal communication effects student learning. This study exemplified that point through quantitative and qualitative measurements. Instructors' nonverbal communication seems to have a positive effect on students' perceptions of learning, standardized measurements of learning, and perceptions of the instructor's

credibility. Notably, this study found that student gender did not change the effectiveness of the instructors' nonverbal communication.

One founder of research regarding nonverbal communication in the classroom, Mehrabian (1971), stated that nonverbal communication immediacy has a strong correlation between personal relationships, "People are drawn towards persons and things they like, evaluate highly, and prefer; and they avoid or move away from things they dislike, evaluate negatively, or do not prefer" (p. 1). This study and past studies have found strong correlations between nonverbal communication and receiver's positive perceptions of the speaker and the message.

This study has found an association between instructor-student relationships built from instructors' nonverbal communication and student learning. Professional development programs in higher education could benefit from providing nonverbal communication training to instructors. Understanding and being able to effectively use nonverbal communication may be a powerful tool for any instructor.

### References

- Adalsteinsdottir, K. (2004). Teachers' behaviour and practices in the classroom. *Scandinavian Journal of Educational Research*, 48(1), 95–114.
- Addington, D.W. (1971). The effect of vocal variations on ratings of source credibility. *Speech Monographs*, 38, 242-247.
- Alexander, L., Frankiewicz, R., & Williams, R. (1979). Facilitation of learning and retention or oral instruction using advance and post organizers. *Journal of Educational Psychology*, 71, 701-707.
- Allen, M., Witt, P.L., & Wheelless, L.R. (2006). The role of teacher immediacy as a motivational factor in student learning: Using meta-analysis to test a causal model. *Communication Education*, 55, 21-31.
- Ambady, N., & Skowronski, J.J. (2008). *First Impressions*. Guildford Press, New York.
- Anderman, L., & Kaplan, A. (Guest Eds.) (2008). Special issue: The role of interpersonal relationships in student motivation. *Journal of Experimental Education*, 76(2).
- Andersen, J.F. (1978). *The relationship between teacher immediacy and teaching effectiveness* (Unpublished doctoral dissertation) West Virginia University.
- Andersen, J.F. (1979). Teacher immediacy as a predictor of teaching effectiveness. In D. Nimmo (Ed.), *Communication Yearbook 3* (pp. 543-559). New Brunswick, NJ: Transaction Books.
- Andersen, J.F., Andersen, P.A., & Jensen, A.D. (1979). The measurement of immediacy. *Journal of Applied Communication Research*, 7, 153-180.



- Andersen, J.F., Andersen, P.A., Murphy, M.A., & Wendt-Wasco, N. (1985). Teachers' reports of students' nonverbal communication in the classroom: A developmental study in grades K-12. *Communication Education, 34*, 292-307.
- Andersen, J.F., Norton, R.W., & Nussbaum, J.F. (1981). Three investigations exploring relationships between perceived teacher communication behaviors and student learning. *Communication Education, 30*(4), 377-92.
- Anderson, P.A. (1973, November). *An experimental study to assess the effects of source credibility on apprehension*. Paper presented at the meeting of Speech Communication Association, New York, NY.
- Anderson, P.A. (1999). *Nonverbal communication*. Mountain View, CA: Mayfield.
- Argyle, M. (1999). Nonverbal vocalizations. In L.K. Guerrero, J.A. DeVito, & M.L. Hecht (Eds.), *The nonverbal communication reader* (pp. 135-148). Prospect Heights, IL: Waveland Press.
- Argyle, M., & Kendon A. (1967). The experimental analysis of social performance. In L. Berkowitz (Ed.), *Advances in experimental social psychology, 3*, 55-98. New York, NY: Academic Press.
- Atkinson, R.K. (2002). Optimizing learning from examples using pedagogical agents. *Journal of Educational Psychology, 94*, 416-427.
- Ayres, J., Wilcox, K., & Ayres, D.M. (1995). Receiver apprehension: An explanatory model and accompanying research. *Communication Education, 44*, 223-235.
- Babad, E. (1992). Teacher expectancies and nonverbal behavior. In R. S. Feldman (Ed.), *Applications of nonverbal behavioral theories and research* (pp. 167-190). Hillsdale, NJ: Erlbaum.

- Baird, J.E., Jr. (1976). Sex differences in group communication: A review of relevant Research. *Quarterly Journal of Speech*, 62, 179-192.
- Barnum, C., & Wolniansky, N. (1989), Taking cues from body language. *Management Review*, 59-60.
- Beatty, M.J., & Behnke, R.R. (1980). Teacher credibility as a function of verbal content and paralinguistic cues. *Communication Quarterly*, 28, 55-59.
- Beatty, M.J., & Zahn, C.J. (1990). Are student ratings of communication instructors due to 'easy' grading practice? An analysis of teacher credibility and student reported performance levels. *Communication Education*, 39, 275-282
- Beebe, S.A. (1980). *The role of nonverbal communication in education: Research and theoretical perspectives*. Paper presented at the annual meeting of the Speech Communication Association, New York (ERIC Document Reproduction Service No. ED. 196063).
- Blanck, P.D., Rosenthal, R., Snodgrass, S., DePaulo, B., & Zuckerman, M. (1981). Sex differences in eavesdropping on nonverbal cues: Developmental changes. *Journal of Personality and Social Psychology*, 41, 391-396.
- Breed, G. (1971). *Nonverbal behavior and teaching effectiveness*. Vermillion, SD: University of South Dakota (ERIC Document Reproduction Service No. ED 059182).
- Burgoon, J.K. (1980). Nonverbal communication research in the 1970s: An overview. In D. Nimmo (Ed.), *Communication Yearbook 4* (pp. 179-197). New Brunswick, NJ: Transaction Books.

- Burgoon, J.K., Buller, D.B., Hale, J.L., & de Turck, M.A. (1984). Relational messages associated with nonverbal behaviors. *Human Communication Research, 10*, 351-378.
- Burgoon, J.K., & Hoobler, G. (2002) 'Nonverbal signals', in M.L. Knapp and J. Daly (eds) *Handbook of Interpersonal Communication* (pp. 240–99), Thousand Oaks, CA: Sage.
- Burgoon, J.K., & Saine, T. (1978). *The unspoken dialogue: An introduction to nonverbal communication*. Boston, MA: Houghton Mifflin.
- Burroughs, N.F. (2007). A reinvestigation of the relationship of teacher nonverbal immediacy and student compliance-resistance with learning. *Communication Education, 56*(4), 453-475.
- Carli, L.L., LaFleur, S.J., & Loeber, C.C. (1995). Nonverbal behavior, gender and influence. *Journal of Personality and Social Psychology, 68*, 1030-1041.
- Chamberlin, C.R. (2000). Nonverbal behaviors and initial impressions of trustworthiness in teacher-supervisor relationships. *Communication Education, 49*, 352-364.
- Chesebro, J.L. (1999). *Teacher clarity: A definition, review, and a profile of the clear teacher*. Paper presented at the meeting of the National Communication Association, Chicago, IL.
- Chesebro, J.L. (2003). Effects of teacher clarity and nonverbal immediacy on student learning, receiver apprehension, and affect. *Communication Education, 52*(2), 135-47.

- Chesebro, J.L., & McCroskey, J.C. (1998). The relationship between teacher clarity and immediacy and students experiences of state receiver apprehension when listening to teachers. *Communication Quarterly*, *46*, 446-456.
- Chesebro, J.L., & McCroskey, J.C. (2001). The relationship between teacher clarity and immediacy and student affect and cognitive learning. *Communication Education*, *50*, 59-68.
- Chesebro, J.W., McCroskey, J.C., Atwater, D.F., Behrenfuss, R.M., Cawelti, G., Gaudino, J.L., & Hodges, H. (1992). Communication apprehension and self-perceived communication competence of at-risk students. *Communication Education*, *41*, 68-76.
- Christophel, D. (1990). The relationships among teacher immediacy behaviors, student motivation, and leaning. *Communication Education*, *39*, 323-340.
- Christophel, D., & Gorham, J. (1995). A test-retest analysis of student motivation, teacher immediacy, and perceived sources of motivation and demotivation in college classes. *Communication Education*, *44*, 292-306.
- Cole, J.G. (2000). A temperament perspective of nonverbal immediacy. *Communication Research Reports*, *17*, 90-94.
- Comadena, M.E., Hunt, S.K., & Simonds, C.J. (2007). The effects of teacher clarity, nonverbal immediacy and caring on student motivation, affective and cognitive learning. *Communication Research Reports*, *24*(3), 241-248.
- Craig, S.D., & Gholson, B., & Driscoll, D.M. (2002). Animated pedagogical agents in multimedia educational environments: Effects of agent properties, picture features, and redundancy. *Journal of Educational Psychology*, *94*, 428-434.

- Creswell, J.W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Daniel, T.R. (2000). Determining the impact of nonverbal immediacy on cognitive learning and affective perceptions in a post secondary technical learning environment. *Dissertation Abstracts International*, 62(2), 532A.
- DeFleur, M. L., Kearney, P., & Plax, T. G. (1998). *Fundamentals of human communication* (2nd ed). Mountain View, CA: Mayfield Publishing Company.
- DePaulo, B.M. (1992). Nonverbal behavior and self-presentation. *Psychol Bull*, 111, 203-243
- Deutsch, F.M., LeBaron, D., & Fryer, M.M. (1987). What is in a smile? *Psychology of Women Quarterly*, 11, 341-352.
- Diekman, A.B., & Goodfriend, W. (2006). Rolling with the changes: A role congruity perspective on gender norms. *Psychology of Women Quarterly*, 30, 369-383.
- Driskell, J.E., Olmstead, B., & Salas, E. (1993). Task cues, dominance, cues, and influence in task groups. *Journal of Applied Psychology*, 78, 51-60.
- Devito, A.J. (2009). *Human communication*. Boston, USA: Pearson Education.
- Eadie, B. (1996). Performance in conversation analysis: How teacher nonverbal communication affects learning. *Spectra*, 32(10), 8-13.
- Eagly, A.H., Makhijani, M.G., & Klonsky, G.G. (1992). Gender and the evaluation of leaders: A meta-analysis. *Psychological bulletin*, 111, 3-22.
- Ellyson, S. L., & Dovidio, J. F. (1985). *Power, dominance, and nonverbal behavior: Basic concepts and issues* (pp. 1-27). New York, NY: Springer-Verlag.

- Exline, R.V., Gray, D., & Schuette, D. (1965). Visual behavior in a dyad as affected by interview content and sex of respondent. *Journal of Personality & Social Psychology, 1*, 201-209.
- Folwell, A.L. (2000). A comparison of professors' and students' perceptions of nonverbal immediacy behaviors. *Journal of the Northwest Communication Association, 29*, 41-58.
- Fraenkel, J.R., & Wallen, N.E. (2006). *How to design and evaluate research in education*. New York, NY: McGraw-Hill.
- Frechette, C., & Moreno, R. (2010). The roles of animated pedagogical agents' presence and nonverbal communication in multimedia learning environments. *Journal of Media Psychology: Theories, Methods, And Applications, 22*(2), 61-72.
- Friedrich, G.W. (1978, March). *Effect of teaching behavior on the acquisition of communication competencies*. Paper presented at the meeting of the American Educational Research Association, Toronto.
- Fromkin, V., & Rodman, R. (1983). *An introduction to language* (3rd ed.). New York: Holt, Rinehart and Winston.
- Frymier, A.B. (1994). A model of immediacy in the classroom. *Communication Quarterly, 42*, 133-144.
- Fusani, D.S. (1994). "Extra-class" communication: Frequency, immediacy, self-disclosure, and satisfaction in student-faculty interaction outside the classroom. *Journal of Applied Communication Research, 22*, 232-257.
- Galloway, C.M. (1971). *Analysis of theories and research in nonverbal communication*. Unpublished manuscript.

- Garau, M., Slater, M., Bee, S., & Sasse, M.A. (2001). The impact of eye gaze on communication using humanoid avatars. *SIGCHI'01 Proceedings* (pp. 309-316). Seattle, WA.
- Graham, G.H., Unruh, J., & Jennings, P. (1991). The impact of nonverbal communication in organizations: A survey of perceptions. *Journal of Business Communication*, 28(1), 45-62.
- Grant, B.M., & Hennings, D.G. (1971). The teacher moves: An analysis of nonverbal activity. *New York: Teachers College Press*.
- Gorham, J. (1988). The relationship between verbal teacher immediacy behaviors and student learning. *Communication Education*, 37, 40-53.
- Gorham, J., & Zakahi, W.R. (1990). A comparison of teacher and student perceptions of immediacy and learning: Monitoring process and product. *Communication Education*, 39, 354-368.
- Hall, J. (1978). Gender effects in decoding nonverbal cues. *Psychological Bulletin*, 68, 845-857.
- Hall, J.A., & Andrzejewski, S.A. (2008). Who draws accurate first impressions? Personality correlates of sensitivity to nonverbal cues. In N. Ambady & J. J. Skowronski (Eds.), *First impressions*. New York, NY: Guilford.
- Hall, J.A., & Halberstadt, A.G. (1986). Smiling and gazing. In J. S. Hyde & M. C. Linn (Eds.), *The psychology of gender: Advances through meta-analysis* (pp. 136-158). Baltimore, MD: Johns Hopkins University Press.
- Helmer, S., & Eddy, C. (2003). *Look at me when I talk to you: ESL learners in non-ESL classrooms*. Tonawanda, NY: Pippin.

- Henley, N.M. (1977). *Body Politics: Power, Sex, and Nonverbal Communication*. Englewood Cliffs, NJ: Prentice Hall.
- Henley, N.M., & Harmon, S. (1985). The nonverbal semantics of power and gender: A perceptual study. In S. L. Ellyson & J. F. Dovidio (Eds.), *Power, dominance and nonverbal behavior* (pp. 89-108). New York, NY: Springer-Verlag.
- Hess, J.A., Smythe, M.J., & Communication 451. (2001). Is teacher immediacy actually related to student cognitive learning? *Communication Studies*, 52, 197-219.
- Hietanen, J., Leppänen, J., & Lehtonen, U. (2004). Perception of emotions in the hand movement quality of Finnish sign language. *Journal of Nonverbal Behavior*, 28(1), 53-64.
- Hines, C., Cruickshank, D., & Kennedy, J. (1985). Teacher clarity and its relationship to student achievement and satisfaction. *American Education Research Journal*, 22, 87-99.
- Hogan, K., & Stubbs, R. (2003). *Can't get through 8 barriers to communication*. Grenta, LA: Pelican Publishing Company.
- Holden, C. (1997). Study finds students like a good show. *Science*, 278(5336), 229.
- Houser, M.L., & Frymier, A.B. (2009). The role of student characteristics and teachers behaviors in students' learner empowerment. *Communication in Education*, 58 (1), 35-53.
- Hybels, S., & Weaver, R.L. (2004). *Communicating effectively* (7th ed.). New York, NY: McGraw-Hill, 174-175.
- Isenhardt, M. (1980). An investigation of the relationships of sex and sex role to the ability to decode nonverbal cues. *Human Communication Research*, 6, 309-317.



- Ishikawa, H., Hashimoto, H., Kinoshita, M., & Yano, E. (2010). Can nonverbal communication skills be taught? *Medical Teacher, 32*(10), 860-863.
- Jaasma, M.A., & Koper, R.J. (1999). The relationship of student-faculty out of class communication to instructor immediacy and trust and to student motivation. *Communication Education, 48*, 41-47.
- Kashinsky, M., & Weiner, M. (1969). Tone in communication and the performance of children from socioeconomic groups. *Child Development, 11*, 1193-1202.
- Kearney, P., Plax, T.G., Richmond, V.P., & McCroskey, J.C. (1984). Power in the classroom, IV: Teacher communication techniques as alternatives to discipline. In R. Bostrom (Ed.), *Communication Yearbook 8* (pp. 724-746). Beverly Hills, CA: Sage.
- Kearney, P., Plax, T.G., Richmond V.P., & McCroskey, J.C. (1985). Power in the classroom III: Teacher communication techniques and messages. *Communication Education, 34*, 19-28.
- Kearney, P., Plax, T.G., & Wendt-Wasco, N.J. (1985). Teacher immediacy for affective learning in divergent college classes. *Communication Quarterly, 33*, 61-74.
- Keating, C.F. (1985). Human dominance signals: The primate in us. In S. L. Ellyson & J. F. Dovidio (Eds.), *Power, dominance and nonverbal behavior* (pp. 89-108). New York, NY: Springer-Verlag.
- Kelley, D.H., & Gorham, J. (1988). Effects of immediacy on recall of information. *Communication Education, 37*, 198-207.

- Kelly, N., & Kelly, B. (1982). Backgrounds, education, and teaching styles of award-winning professors. *Annual Meeting of the Rocky Mountain Educational Research Association*. Albuquerque, NM. ERIC Accession Number ED 230 080.
- King, P., & Witt, P. (2009). Teacher immediacy, confidence testing, and the measurement of cognitive learning. *Communication Education*, 58, 110-123.
- Knapp, M.L., & Hall, J.A. (2010). *Nonverbal communication in human interaction* (7th ed.). Boston, MA: Wadsworth.
- Kroehnert, G. (2006). Basic training for trainers (3rd ed.). New Delhi, India: McGraw-Hill, 151-153.
- Leathers, D.G., & Eaves, M.H. (2008). *Successful nonverbal communication* (4th ed.). Boston, MA: Allyn & Bacon.
- Lee, M., & Ofshe, R. (1981). The impact of behavioral style and status characteristics on social influence: A test of two theories. *Social Psychology Quarterly*, 44, 73-82.
- Lemire, D. (2002). Brief report: What developmental educators should know about learning styles and cognitive styles. *Journal of College Reading and Learning*, 32, 177-182.
- Lesikar, R.V., Flatley, M.E. (2005). *Basic business communication: Skill for empowering the internet generation* (10th ed.). New York, NY: McGraw Hill, 425-427.
- Lindon, J., & Lindon, L. (2008). *Mastering counseling skills*. New York, NY: Palgrave Macmillan.
- Mackay, J. (2006). *Coat of many pockets: Managing classroom interactions*. Australia: Aust Council for Ed Research.

- Maher, E. (2008). Towards the creation of a new framework for effective use of student learning style instruments. *The International Journal of Learning, 15*, 50-93.
- Martin, M.M., Chesebro, J.L., & Mottet, T.P. (1997). Students' perceptions of instructors' socio-communicative style and the influence on instructor credibility and situational motivation. *Communication Research Reports, 17*, 431-440.
- Mason, R. (2003). *Teach yourself. Speaking on special occasions*. London: Hodder & Stoughton, 41-42.
- Mast, M.S., Hall, J.A., Klakner, C., & Choi, E. (2008). Physician gender affects how physician nonverbal behavior is related to patient satisfaction. *Medical Care, 46*, 1212-1218.
- McCroskey, J.C. (2002). Learning goals and objectives. In J. L. Chesbro & J. C. McCroskey, (Eds.), *Communication for teachers* (pp. 3-7). Boston, MA: Allyn & Bacon.
- McCroskey, J.C., Richmond, V.P., Plax, T.G., & Kearney, P. (1985). Power in the classroom V: Behavior alteration techniques, communication training and learning. *Communication Education, 43*, 214-226.
- McCroskey, J.C., & Young, T.J. (1981). Ethos and credibility: The construct and its measurement after decades. *Central States Speech Journal, 32*, 24-34.
- McDowell, E.E., McDowell, C.E., & Hyerdahl, J. (1980, November). *A multivariate study of teacher immediacy, effectiveness and student attentiveness at the junior high and senior high levels*. Paper presented at the annual meeting of the Speech Communication Association, New York.

- Mehrabian, A. (1961). Some referents and measures of nonverbal behavior. *Behavioral Research Methods and Instrumentation*, 1, 213-217.
- Mehrabian, A. (1971). *Silent messages*. Belmont, CA: Wadsworth.
- Mehrabian, A. (1981). *Silent messages: Implicit communication of emotions and attitudes* (2nd ed.) Belmont, CA: Wadsworth.
- Miller, P.W. (1998). *Nonverbal communication: What a researcher says to the teachers* (3rd ed.). Washington, DC: Nea, 6-22.
- Mitrovic, A., & Suraweera, P. (2000). Evaluating an animated pedagogical agents. In G. Gauthier, C. Frasson, & K. VanLehn (Eds.), *Proceedings of the 5th International Conference on Intelligent Tutoring Systems: LNCS 1839* (pp. 73-82.) Berlin: Springer-Verlag.
- Moore, N.J., Hickson, M., & Stacks, D.W. (2010). *Nonverbal communication* (5th ed.). New York, NY: Oxford University Press.
- Mottet, T.P., Beebe, S.A., Raffeld, P.C., & Paulsel, M.L. (2004). The effects of student verbal and nonverbal responsiveness on teachers' liking of students and willingness to comply with student requests. *Communication Quarterly*, 52, 27-38.
- Myers, S.A., & Knox, R.L. (2001). The relationship between college student information-seeking behaviors and perceived instructor verbal behaviors. *Communication Education*, 50, 343-357.
- Norton, R.W. (1977). Teacher effectiveness as a function of communicator style. In B. Ruben (Ed.), *Complication Yearbook 1* (pp. 525-542). New Brunswick, NJ: Transaction Books.

- Nussbaum, J., & Scott, M. (1979). The relationship between communicator style, perceived self-disclosure, and classroom learning. In D. Nimmo (Ed.), *Communication yearbook 3* (pp. 561-584). New Brunswick, NJ: Transaction.
- Office of Institutional Research. (2011). University Ledger: A Fact Book. Retrieved from <http://www.lindenwood.edu/academics/institutionalResearch/docs/LindenwoodLedger2010/final.pdf>
- Patterson, M.L. (1973). Compensation in nonverbal immediacy behaviors: A review. *Sociometry*, 36, 237-252.
- Pease, B., & Pease, A., (2004). *The definitive book of body language*. New York, NY: Bantam Books.
- Peterson, R.T. (2005). An examination of the relative effectiveness of training in nonverbal communication: Personal selling implications. *Journal of Marketing Education*, 27, 143-150.
- Pettit, J.D., Jr (1976, Fall) Outlines of Transactional Analysis and of Gestalt Psychology. *14 (1)*, 27-41.
- Petty, M.M., & Lee, G.K. (1975). Moderating effects of sex of supervisor and subordinate on relationships between supervisory behavior and subordinate satisfaction. *Journal of Applied Psychology*, 60, 624-628.
- Plax, T.G., Kearney, P., McCroskey, J.C., & Richmond, V.P. (1986). Power in the classroom VI: Verbal control strategies, nonverbal immediacy and affective learning. *Communication Education*, 35(1), 43-55.

- Pogue, L.L., & AhYun, K. (2006). The effect of teacher nonverbal immediacy and credibility on student motivation and affective learning. *Communication Education, 55*(3), 331-344.
- Powell, R.G., & Harville, B. (1990). The effects of teacher immediacy and clarity on instructional outcomes: An intercultural assessment. *Communication Education, 39*, 369-379.
- Prabhu, T.T. (2010). Proxemics: Some challenges and strategies in nonverbal communication. *IUP Journal of Soft Skills, 4*, 7-14.
- Richmond, V.P. (1990). Communication in the classroom: Power and motivation. *Communication Education, 39*, 181-195.
- Richmond, V.P. (2002). Teacher nonverbal immediacy: Uses and outcomes. In J. L. Chesbro & J. C. McCroskey (Eds.), *Communication for teachers* (pp. 65-82). Boston, MA: Allyn & Bacon
- Richmond, V.P., Gorham, J.S., & McCroskey, J. C. (1987). The relationship between selected immediacy behaviors and cognitive learning. *Communication Yearbook, 10*, 574-590.
- Richmond, V.P., & McCroskey, J.C. (2004). *Nonverbal behavior in interpersonal relations* (3rd ed.). Boston, MA: Pearson Education.
- Richmond, V.P, McCroskey, J.C., & Johnson, A.D. (2003). Development of the Nonverbal Immediacy Scale (NIS): Measures of self-and other-perceived nonverbal immediacy. *Communication Quarterly, 51*(4), 504-517.
- Richmond, V.P., McCroskey, J.C., Plax, T.G., & Kearney, P. (1986). Teacher nonverbal immediacy training and student affect. *World Communication, 15*(2), 181.

- Rocca, K.A. (2004). College student attendance: Impact of instructor immediacy and verbal aggression. *Communication Education, 53*, 185-195.
- Rocca, K.A., & McCroskey, J.C. (1999). The interrelationship of student ratings of instructors' immediacy, verbal aggressiveness, homophily, and interpersonal attraction. *Communication Education, 48*, 308-316.
- Rodgers, M.A., & McCroskey, J.C. (1984, March). *Nonverbal immediacy of teachers in classroom environments*. Paper presented at the annual meeting of the Eastern Communication Association, Philadelphia.
- Rodríguez, J.I., Plax, T.G., & Kearney, P. (1996). Clarifying the relationship between teacher nonverbal immediacy and student cognitive learning: affective learning as the central causal mediator. *Communication Education, 45*, 293-305.
- Rosen, B., & Jerdee, T.H. (1973). The influence of sex-role stereotypes on evaluations of male and female supervisory behavior. *Journal of Applied Psychology, 57*, 44-48.
- Rosenthal, R., & DePaulo, B. (1979). Sex differences in eavesdropping on nonverbal cues. *Journal of Personality and Social Psychology, 37*, 273-285.
- Sanders, J.A., & Wiseman, R.L. (1990). The effects of verbal and nonverbal teacher immediacy on perceived cognitive, affective, and behavioral learning in the multicultural classroom. *Communication Education, 39*, 1-12.
- Schonwetter, D.J. (1993). Attributes of effective lecturing in the college classroom. *The Canadian Journal of Higher Education, 23*, 1-18.
- Semic, B. (1999). Vocal attractiveness. In L. Guerrero, et al. (Eds.), *The Nonverbal Communication Reader: Classic and Contemporary Readings* (2nd ed.). Prospect Heights, IL: Waveland Press, 149-155.

- Sime, D. (2006). What do learners make of teacher's gestures in the language classroom? *International Review of Applied Linguistics in Language*, 44(2), 211-230.
- Sims, R.R., & Sims, S.J. (1995). Learning enhancement in higher education. In R.R. Sims & S.J. Sims (Eds.), *The importance of learning styles* (pp. 1-24). Westport, CT: Greenwood Press.
- Smeltzer, L., Waltman, J., & Leonard, D. (1999). Proxemics and haptics in managerial communication. In L. K. Guerrero, J. A. DeVito, & M. L. Hecht (Eds.), *The nonverbal communication reader* (pp. 184-191). Prospect Heights, IL: Waveland Press.
- Smith, H.A., (1979). Nonverbal communication in teaching. *Review of Educational Research*, 49, 631-672.
- Smith, L., & Cotten, M. (1980). Effect of lesson vagueness and discontinuity on student achievement and attitudes. *Journal of Educational Psychology*, 72, 670-675.
- Smith, L., & Land, M. (1981). Low-inference verbal behaviors related to teacher clarity. *Journal of Classroom Interaction*, 17, 37-42.
- Teel, J.B. (2011). *An examination of the relationship between cognitive learning style preference and nonverbal immediacy behaviors in undergraduate students*. Doctoral dissertation, retrieved from the Auburn University thesis and dissertation database.
- Teven, J.J., & Hanson, T.L. (2004). The impact of teacher immediacy and perceived caring on teacher competence and trustworthiness. *Communication Quarterly*, 52, 39-53.



- Teven, J.J., & McCroskey, J.C. (1996). The relationship of perceived teacher caring with student learning and teacher evaluation. *Communication Education, 46*, 1-8.
- Thweatt, K.S., McCroskey, J.C. (1998). The impact of teacher immediacy and misbehaviors on teacher credibility. *Communication Education, 47*, 348-358.
- Titsworth, B.S. (2001). The effects of teachers' immediacy, use of organizational lecture cues, and students' note taking on cognitive learning. *Communication Education, 50*, 283-297.
- Tubbs, S.L., & Moss, S. (2006). *Human communication principles and contexts*. New York, NY: McGraw-Hill.
- van Mulken, S., Andre, E., & Muller, J. (1998). The persona effect: How substantial is it? *Proceedings of the Human Computer Interaction Conference* (pp. 53-66). Berlin: Springer-Verlag.
- Victoria, J. (1970). *An investigation of nonverbal behavior of student teachers*. University Park, PA: Pennsylvania State University Press.
- Weineke, C. (1981). The first lecture: Implications for students who are new to the university. *Studies in Higher Education, 6*, 85-89.
- Wheless, L.R. (1975). An investigation of receiver apprehension and social context dimensions of communication apprehension. *The Speech Teacher, 24*, 261-268.
- Wiener, M., & Mehrabian, A. (1968). *Language within language: Immediacy, a channel in verbal communication*. New York, NY: Appleton-Century-Crofts.
- Witt, P.L., & Schrodt, P. (2006). The influence of instructional technology use and teacher immediacy on student affect for teacher and course. *Communication Reports, 19*, 1-15.

- Woolfolk, A.E. (1978). Student learning and performance under varying conditions of teacher verbal and nonverbal evaluative communication. *Journal of Educational Psychology, 70*(1), 87-94.
- Wright, C.J., & Nuthall, G. (1970). Relationship between teacher behaviors and pupil achievement in three experimental elementary science lessons. *American Educational Research Journal, 7*, 477-491.
- Yu, C., & Ohlund, B. (2010). Threats to validity of research design. Retrieved from <http://www.creative-wisdom.com/teaching/WBI/threat/shtml>.
- Zekia, P.C. (2009). The importance of non-verbal communication in classroom management. *Procedia social and behavioral sciences 1* (World Conference on Educational Sciences, North Cyprus). Retrieved from <http://www.sciencedirect.com/science>

**Appendix A****Institutional Review Board (IRB) Application**

# LINDENWOOD

LINDENWOOD UNIVERSITY ST. CHARLES, MISSOURI

DATE: April 25, 2013

TO: Dustin York

FROM: Lindenwood University Institutional Review Board

STUDY TITLE: [447949-1] **Investigating a relationship between nonverbal communication and student learning.**

IRB REFERENCE #:

SUBMISSION TYPE: Expedited

ACTION: APPROVED

APPROVAL DATE: April 25, 2013

EXPIRATION DATE: April 25, 2014

REVIEW TYPE: Expedited

Thank you for your submission of Expedited materials for this research project.

Lindenwood University Institutional Review Board has APPROVED your submission. Please, note the following qualifications:

**The Subway card offered for participation must not exceed \$10.00 in value.**

**The participant paperwork must include a place for marking gender, since research analysis includes this as one of the variables.**

This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission. This submission has received Administrative Review based on the applicable federal regulation. Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document. Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to the IRB.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the completion/amendment form for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of April 25, 2014.

Please note that all research records must be retained for a minimum of three years.

If you have any questions, please contact Beth Kania-Gosche at [BKaniaGosche@lindenwood.edu](mailto:BKaniaGosche@lindenwood.edu) or send them to [IRB@lindenwood.edu](mailto:IRB@lindenwood.edu). Please include your study title and reference number in all correspondence with this office.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Lindenwood University Institutional Review Board's records.

**Appendix B****Consent to Participate**

Lindenwood University

School of Education

209 S. Kingshighway

St. Charles, Missouri 63301

Informed Consent for Participation in Research Activities

“Investigating a relationship between nonverbal communication and student learning”

Principal Investigator \_\_\_Dustin York\_\_\_\_\_

Telephone: 573-275-0580 E-mail: dy325@lindenwood.edu

Participant \_\_\_\_\_ Contact info \_\_\_\_\_

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1. You are invited to participate in a research study conducted by Dustin York under the guidance of Dr. Graham Weir. The purpose of this research is look at the relationship between an instructor’s nonverbal communication during class lecture, and students’ learning.

2. a) Your participation will involve

Completing a pretest concerning visual aids in presentations

Listening to a lecture concerning visual aids in presentations

Completing a posttest concerning visual aids in presentations

Completing a survey concerning the instructor’s presentation style

Answering questions in a focus group if volunteered

b) The amount of time involved in your participation will be 30-40 minutes.

Approximately 80-200 students will be involved in this research.

There are no anticipated risks associated with this research.

3. There are no direct benefits for you participating in this study. However, your participation will contribute to the knowledge about nonverbal communication in higher education lectures and may help society.

4. Your participation is voluntary and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw.

5. We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study and the information collected will remain in the possession of the investigator in a safe location.

6. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Dustin York (573-275-0580) or the Supervising Faculty, Dr. Graham Weir, (636-949-4315). You may also ask questions of or state concerns regarding your participation to the Lindenwood Institutional Review Board (IRB) through contacting Dr. Jann Weitzel, Vice President for Academic Affairs at 636-949-4846.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I consent to my participation in the research described above.

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Participant's Signature

Date

---

Participant's Printed Name

---

Signature of Principal Investigator

Date

---

Investigator Printed Name

## **Appendix C**

### **Focus Group Questions**

Focus Group Questions

How much do you feel you learned from the presentation?

Follow up?

How do you feel about the instructor's presentation style?

Follow up?

How do you feel the presentation could have improved?

Follow up?

How do you feel an instructor's nonverbal communication affects your learning?

Follow up?

How do you feel an instructor's nonverbal communication affects how credible you view them in the area of the lecture?

Follow up?

Do you feel you learn more from an instructor that utilizes good nonverbal communication?

Follow up?

**Appendix D****Survey**

## Survey

Circle one

Male                  Female

1) I enjoyed the presentation.

1 - Strongly Disagree    2 - Slightly Disagree    3 - Slightly Agree    4 - Strongly agree

2) I would take a course with this instructor.

Yes                  No

3) I feel that I learned a lot from the material presented by the instructor.

1 - Strongly Disagree    2 - Slightly Disagree    3 - Slightly Agree    4 - Strongly agree

4) I liked the instructor's presentation style.

1 - Strongly Disagree    2 - Slightly Disagree    3 - Slightly Agree    4 - Strongly agree

5) I think the instructor is credible in the topic of using visual aids in presentations.

1 - Strongly Disagree    2 - Slightly Disagree    3 - Slightly Agree    4 - Strongly agree

6) How many years of experience do you think the instructor has in coaching presentations?

Less than one year

1-2 years

3-5 years

More than 5 years

7) I think an instructor's nonverbal communication during lecture affects how much I learn.

1 - Strongly Disagree    2 - Slightly Disagree    3 - Slightly Agree    4 - Strongly agree



**Appendix E****Effective Nonverbal Communication/Poor Nonverbal Communication Checklist**

## Good Nonverbal Communication Checklist - Dustin

- Not positioned behind podium \_\_\_\_
- Moves around the classroom \_\_\_\_
- Uses hand gestures frequently \_\_\_\_
- Frequent voice fluctuation \_\_\_\_
- Makes eye contact with all students \_\_\_\_
- Varies facial expressions \_\_\_\_

## Poor Nonverbal Communication Checklist - Markus

- Positioned behind podium for a majority of the time \_\_\_\_
- Does not move around the classroom \_\_\_\_
- Does not use hand gestures frequently \_\_\_\_
- Does not utilize voice fluctuation \_\_\_\_
- Does not makes eye contact with all students \_\_\_\_
- Does not vary facial expressions \_\_\_\_

## Appendix F

### Pretest/Posttest

#### Persuasion Questions

1. List as many of the seven persuasion techniques you know.


2. “This weekend only, everything in the store is 20% off. Act now!” This is an example of which persuasion technique.

- a) reciprocity
- b) consensus
- c) scarcity
- d) consistency

3. Give an example of how you could use the authority persuasion technique to convince people to use their seat belts.

4. Which persuasion technique is most used by non-for-profit organizations?

- a) reciprocity
- b) consensus
- c) scarcity
- d) consistency

5. What is a speech of refutation intended to do?

6. What are two ways you can get a response from the audience before they leave?

## Vitae

**Dustin York**

322 Seton Hall Ct. • Valley Park, MO 63088  
 Mobile: 573-275-0580 • dustinyork@gmail.com

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**Skills**

- A high-energy, enthusiastic and dependable instructor who excels in leading a classroom
- Industry communications experience for clients like: Scotttrade, PepsiCo, Astrazine
- Skilled in public relations, corporate communications, public speaking, new media and promotions with a heavy enfaces in trending technologies
- Articulate and personable professional who displays constant initiative
- Recognized for energetic and powerful teaching in the undergraduate and post-graduate levels

**Education**

**Ed.D., Instructional Leadership (Diss. in Nonverbal Communication)**, Expected 9/13  
 Lindenwood University, St. Charles, MO  
 Current GPA: 4.0

**M.A., Communications**, 12/11  
 Lindenwood University, St. Charles, MO  
 GPA: 4.0

**B.S., Public Relations**, Minor: Marketing Management, 5/09  
 Southeast Missouri State University, Cape Girardeau, MO  
 GPA: 3.2, Major GPA: 3.4  
 Special Projects: Media Tours, Crisis Management, and Photo Shop Labs

**Work Experience**

2012 - Present	<p><b>Assistant Professor</b> Maryville University, St. Louis, MO</p> <p><i>Courses Taught:</i>          Introduction to Contemporary Communication          Principles of Strategic Communication          Introduction Writing: Communication and Media</p> <p><i>Other duties:</i>          Advise the student newspaper, Pawprint, with a 10 person staff.  <a href="http://maryvillepawprint.com/">http://maryvillepawprint.com/</a>          Created and advise a student organization, Society for Professional Strategic Communication (SPSC), that gives students hands-on publicity and event planning experience with real clients          Assist with student research in mass communication</p>
2012	<p><b>Adjunct Professor</b> Lindenwood University-Belleville, Belleville, IL</p> <p><i>Courses taught:</i>          Communication in the Corporate Environment          Using Media for Presentations          Copywriting          Master's Communication Capstone</p>

- 2010 - 2012     **Advisor/Adjunct Professor**     Lindenwood University, St. Charles, MO  
 Taught Freshmen Orientation to University Life.  
 Taught Fundamentals of Oral Communication.  
 Academically advised first-generation and conditionally admitted students.  
 Planned events with up to 400 attendees.  
 Advisor for the student organization, First-Generation Collegians.  
 Implemented communication for Student and Academic Support Services.  
 Developed and maintained programs on campus to incorporate contemporary technologies.
- 2011     **Public Relations**     Scottrade, St. Louis, MO  
 Assisted in promoting Scottrade Financial Services, Inc. through media relations activities, including developing and executing pitch ideas, writing news releases and blogs, building relationships with reporters and media training.
- 2010-2011     **Public Relations**     v-Fluence Interactive, St. Louis, MO  
 Developed, implemented, administered and monitored strategic online public plans. Evaluated effectiveness of strategies in order to focus on the most rewarding and profitable approaches.  
 Mastered the online public relations element.  
 Website oversight for a number of Fortune 500 companies.
- 2006-2010     **Public Relations/Store Mgr.**     Spencer Gifts, Cape Girardeau, MO  
 Develop local and national communication efforts including print design and media outreach.  
 Monitored employee performance of up to nine staff members, making recommendations for skill development, promotion, or dismissal.
- 2008     **Public Relations**     Obama '08 Campaign for Change, MO  
 Organized publicity events and communication for the Presidential election.  
 Managed media outreach for local news outlets.

### Activities and Honors

Presented colloquiums about new technologies' impact on mass communication at:  
 Lindenwood-Bellville University  
 Lindenwood University  
 Culver Stockton College  
 Southeast Missouri State University

Presented colloquiums about nonverbal communication at:  
 Lindenwood University

Association for Education in Journalism and Mass Communication (AEJMC) Member  
 2011-Present  
 Currently publishing an article about instructing SEO in the higher-education classroom.

McFarlane Duncan for State Representative – 77th District  
 Communications Director – St. Louis, MO – 2012

Boys and Girls Club Communications Volunteer