THE EFFECT OF PEER PRACTICE ON COMMUNICATION APPREHENSION IN HIGH

SCHOOL STUDENTS: A QUANTITATIVE, QUASI-EXPERIMENTAL, STATIC-GROUP

STUDY

by

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Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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ABSTRACT

Curricula nationwide is trending toward mandating mastery and assessment of communication skills; however, little research exists to provide insight on how to support students suffering from communication apprehension. This quantitative, quasi-experimental, static-group comparison study examines the impact of peer practice on communication apprehension, public speaking anxiety, group discussion, meeting, and interpersonal communication among high school students. This study utilized a convenience sampling with a control and a treatment group; the sample consisted of 275 participants enrolled in grades nine through 12 at a large, public high school in South Carolina. McCroskey's *Personal Report of Communication Apprehension 24* (PRCA-24) (1982b) was used to measure overall communication apprehension, as well as apprehension on four subscales: group discussion, meeting, interpersonal conversations, and public speaking anxiety. This study utilized the total scale measure of communication apprehension as well as the four subscales. An individual samples *t*-test was used to determine the impact of peer practice on total communication apprehension, while a one-way multivariate analysis of variance was used to determine the impact of peer practice on each subscale of the PRCA-24: group discussion, meeting, public speaking, and interpersonal.   T-test results indicated that peer practice reduced overall communication apprehension compared to control group results; however, MANOVA results found peer practice had no statistically significant impact on group discussion, meeting, public speaking, or interpersonal apprehension individually. Future research should focus on extending the breadth of research in high school populations, examine specific communication contexts, and consider utilizing alternative measures other than PRCA-24.

Keywords: communication apprehension, exposure therapy, peer practice, high school

Dedication

This manuscript is dedicated to my students, past and present. You inspire me, drive me, and give me a purpose each day. I pray that the knowledge I have gained through this journey will benefit each of you and inspire you to continue to reach for the best. May you each know that you are capable of accomplishing anything you can dream possible with hard work and perseverance. Thank you for making my life richer each day.

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Table of Contents

List of Tables

List of Figures

List of Abbreviations

Common Core State Standards (CCSS)

Communication Apprehension (CA)

English as a Foreign Language (EFL)

Institutional Review Board (IRB)

Personal Report of Communication Apprehension (PRCA)

Personal Report of Communication Apprehension 24 (PRCA-24)

Posttraumatic Stress Disorder (PTSD)

Public Speaking Anxiety (PSA)

Selective Serotonin Re-uptake Inhibitors (SSRIs)

Social Anxiety Disorder (SAD)

The Lefkoe Method (TLM)

Zone of Proximal Development (ZPD)

CHAPTER ONE: INTRODUCTION

Overview

Communication is an essential hallmark of a developed civilization. Despite the importance of communication, interpersonal interaction remains a source of great anxiety and apprehension for many. Schools, tasked with teaching not only academic content but also life-skills, must develop methods of addressing and treating communication apprehension. This chapter will provide background and historical information surrounding communication apprehension. Additionally, an overview of the present study will be discussed, including the problem and purpose statements, significance of the study, research question, and definitions.

Background

Oral communication is an unavoidable and important element of many professions (Wortwein, Morency, & Scherer, 2015; Lucas, 2016); yet, for many people these are terrifying experiences. One responsibility of public primary and secondary schools in the United States is to prepare students to communicate effectively in a variety of situations (Hall, Morreale, & Gaudino, 1999; Crowe et al., 2012). While some students may not enjoy or feel the immediate need for public speaking experiences (Kahl, 2014), others do not benefit from public speaking exercises because of a true fear of the public speaking experience (Harris, Kemmerling, & North, 2002). The advent of Common Core, with its speaking and listening standards, has created new, measurable stakes in regards to oral communication that did not previously exist in many states' standards (Kern, 2014). Because of the increased stakes associated with these standards and expectations, teachers need research-based methods of teaching communication skills to students in a manner that reduces apprehension and anxiety associated with these communication experiences.

In the educational environment, communication apprehension can result in students who experience mediocre academic performance, enhanced feelings of loneliness or social isolation, and lower overall quality of life (Bartholomay & Houlihan, 2016). Communication apprehension is exceedingly widespread, affecting up to a one in five individuals (Bartholomay & Houlihan, 2016; Pull, 2012; Zuardi, Crippa, Hallak, & Gorayeb, 2013). Psychological studies have documented this phenomenon and attempted to find solutions (Blote, Kint, Miers, & Westenberg, 2009; Garcia-Banda & Severa, 2011; Shi, Brinthaupt, & McCree, 2015); however, educational research adds little to the body of knowledge in regards to practical methods of easing these fears in the classroom, where most individuals have their first experiences with public speaking (Holmquist, Konda-varilek, & Westwick, 2016).

Historical Overview

Communication apprehension was known as "stage fright" until it was more thoroughly studied (Hayworth, 1939; Robinson, 1959). Further research resulted in clear definitions of communication apprehension and anxiety and, ultimately, the recognition of such as true anxiety disorders (McCroskey, 1977). In 1973, the Bruskin Report revealed that 41% of Americans reported public speaking as their greatest fear. This was the first large-scale survey of its kind in the United States and brought more attention to the need for treatments of such fears (Dwyer & Davidson, 2012). This study was replicated in 2012 with college students and found that 62% of students reported their greatest fear as public speaking (Dwyer & Davidson, 2012). The fear of public speaking was second only to death.

Treatment of communication apprehension has been a concern of scholars for generations (Hayworth, 1939; Robinson, 1959). Early research drew from classroom experiences, teaching suggestions, and classroom activities in the search for treatments for communication

apprehension (Bodie, 2010). Research gradually moved from school-based studies to research focused within the psychological and medical disciplines. As a result, many treatments suggested for communication apprehension from the mid- to late twentieth century focused on clinical solutions to this anxiety (Duff, Levine, Beatty, Woolbright, & Park, 2007). Modern trends in treating communication anxiety tend to focus on cognitive-behavioral therapies (Pull, 2012), Internet-based treatments (Tillfors et al., 2008), and drug therapies (Donahue et al., 2009), while research in educational settings is lacking.

Social Context

Effective communication skills are necessary for every human at every stage of life; yet, communication apprehension is exceedingly widespread, affecting up to one in five individuals (Zuardi et al., 2013; Bartholomay & Houlihan, 2016). Research has found that 70% of people report a fear of public speaking with both known and unknown audiences (Richmond, Heisel, Smith, & McCroskey, 1998). This fear of communication is not just confined to public speaking experiences but also to communication with coworkers in meeting situations, group discussions, and interpersonal interactions (McCroskey, 1984).

Compounding the issue of communication apprehension, technology and digital media have changed the way individuals communicate with one another (Drago, 2015). Because technology utilizes shorthand and indirect interpersonal contact, individuals have increasingly less experience with varying interpersonal communication techniques (Caplan, 2005). Younger generations of students with life-long exposure to technology show signs of decreased ability to communicate effectively with both peers and adults, especially in formal formats that are necessary to produce effective oral presentations and group interactions within the classroom (Caplan, 2005; Drago, 2015)

Changing communication needs are evident not only to educators but to students as well. Students' perceptions of the effectiveness of communication curricula have indicated that public speaking instruction is lacking in many areas, including providing adequate time and strategies for preparation for oral presentations and a lack of instruction into effective interpersonal communication techniques (Kahl, 2014), indicating a need for reform of communication pedagogy.

Theoretical Context

Research into communication anxiety is grounded in Vygotsky's (1978) sociocultural learning theory. This theory asserts that learning is best understood as a process rather than a product (Lantolf & Thorne, 2006; Yildirim, 2008). Vygotsky (1978) theorized that learning requires developmental processes only accessible when students interact with people and peers in their environment. According to Vygotsky (1978), environment and experience play a crucial role in student development. As an extension of sociocultural learning theory, Vygotsky's zone of proximal development urges that learned skills must be fostered and developed through practice and observation of others (Miller, 2011). Public speaking is a perfect example of such a skill. Students need modeling, practice, feedback, and refinement of communication skills in order to improve interpersonal communication.

As peer practice, the suggested pedagogical strategy examined in this study, is a type of exposure therapy, the theoretical context of exposure therapy was considered as well. Exposure therapy was developed in the field of clinical psychology using the theories of habituation, extinction, emotional processing, and self-efficacy (Kaplan & Tolin, 2011). Gray & McNaughton (2000) defined exposure therapy as repeated exposures to fear-inducing stimuli with the goal of forming new associations and experiences with the stimuli to help reduce and

eliminate fear. Participants then feel better able to cope with fear (self-efficacy) while generating new meanings for feared stimuli (emotional processing). Therefore, the theory of exposure therapy asserts that continued exposure to fear-inducing situations desensitizes and reduces the fear itself. Exposure therapy was adapted from clinical settings into applications in the classroom by creating a safe place for students to gradually be introduced to their fears with the goal of eventually overcoming them (Finn, Sawyer, & Schrodt, 2009). In the classroom setting, exposure therapy is rarely referred to as such and is often adapted into a variety of pedagogical approaches. One such approach is peer practice. Peer practice utilizes the theoretical underpinning of exposure therapy to gradually expose students to anxiety-inducing communication situations with the goal of reducing such anxiety and apprehension.

Communication apprehension is a well-documented and prevalent form of anxiety for individuals of all ages, yet modern education reforms place increased emphasis on communication standards without providing practice, research-proven methods for teachers to employ to reduce anxiety surrounding interpersonal communication. This manuscript served to explore the existing literature related to communication apprehension and treatments, outline a detailed explanation of methodology for the proposed study, offer a clear, thorough analysis of the collected data, and, finally, present a discussion of the results of the present study.

Problem Statement

McCroskey (2009) asserted that 70% of Americans feel apprehensive about public speaking experiences. Colleges and universities have been at the forefront of developing possible treatments for public speaking anxiety, and, more generally, communication apprehension (Richmond, Wrench, & McCroskey, 2013). Research at the college level has been generally successful in alleviating, to some degree, communication apprehension via systematic

desensitization (Berger, Baldwin, McCroskey, & Richmond, 1982; Finn et al., 2009); however, further studies are necessary and must focus on fear of communication in populations outside of the college environment (Marinho, de Medeiros, Gama, & Teixeira, 2016). Educational research regarding easing communication apprehension within elementary and secondary settings is almost exclusively conducted with English language learners and is most often conducted outside of the United States (Langan et al., 2008; Pan & Yan, 2010). Several studies have been conducted using online speech-simulation software to determine if the use of such technology has an impact on anxiety or oral proficiency (Gallego, Emmelkamp, van der Kooij, & Mess, 2011). Results of these studies have been mixed, with trends suggesting that the use of such technology alone is not sufficient in treating communication apprehension. More options are needed for pedagogical strategies to use in the classroom to ease communication apprehension (Sun, 2012).

Peer practice, while successful in college and clinical settings, has not been assessed at the secondary level as a method of reducing communication apprehension (Finn et al., 2009). Additionally, Smith & Frymier (2006) found some evidence to suggest that speech practice improves performance but urged that future research must study the implications of such strategies on communication anxiety. The problem, as Marinho et al. (2016) noted, is that research is needed to measure the effects of peer practice on communication apprehension in populations outside the college setting.

Purpose Statement

The purpose of this quantitative, quasi-experimental study is to examine the impact of peer practice on communication apprehension, public speaking anxiety, group discussion, meeting, and interpersonal communication among high school students at a large public high

school in South Carolina. McCroskey (1976, 1977, 1984) defined communication apprehension as an individual's level of fear or anxiety associated with either real of anticipated communication with another person or persons. Peer practice is defined as a method of gradual desensitization in which students practice and examine their own and classmates' reactions, analysis, and mastery of content and skills (Whitworth & Cochran, 1996; Crouch & Mazur, 2001). The Personal Report of Communication Apprehension-24 (PRCA-24) (McCroskey, 1982) measures overall communication apprehension as well as four subscales of communication apprehension including public speaking anxiety, group discussion, meetings, and interpersonal communication. The PRCA-24 was used in this study to measure overall communication apprehension, while each of the four subscales, which measure public speaking anxiety, group discussion, meetings, and interpersonal communication, was analyzed for impact and inter-variable influences of correlated dependent variables. This study investigated the effect of *peer practice* (independent variable) on *overall communication apprehension, public speaking anxiety, group discussion, meetings, and interpersonal communication* (dependent variables) by focusing on the population of high school students in control and treatment groups; communication apprehension in the high school population has not been extensively researched. The sample for this study consisted of 275 high school students enrolled in a large public high school in South Carolina. The treatment group utilized peer practice while the control group did not.

Significance of the Study

The results of this study will assist high school English teachers in implementing effective pedagogy to help ease communication apprehension among students. This timely study is directly connected to the Common Core State Standards reform, which has created the need

for strategies to teach effective speaking skills (Lasisi, 2015). Even states opting out of Common Core and creating their own standards have maintained these communication standards in some form. These standards still contain specific standards for oral communication, both in small and large group contexts. Students are being evaluated on their communication skills; therefore, it is imperative that they learn to manage anxiety and apprehension that may impact these skills (Lasisi, 2015).

Treatment options for communication apprehension in high school students have not been extensively researched. The present study will address the gap in the literature to give high school teachers specific, research-proven strategies to manage communication anxiety. Rattine-Flaherty (2014) argued that one strategy alone cannot reduce communication apprehension; therefore, research is needed to prove the effectiveness of a variety of strategies. Exposure therapies like peer practice need further study within the context of the classroom (Pull, 2012). Cunningham, Lefkoe, and Sechrest (2006) found that peer practice and feedback improves presentation quality but urged that the impact of such practices on anxiety needs further study. Results from this study will add to the existing body of pedagogy regarding strategies to ease communication anxiety thus providing educators more options for combating these apprehensions in the classroom.

Research Questions

RQ1: Is there a difference between the level of communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ2: Is there a difference between the level of public speaking anxiety of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ3: Is there a difference between the level of group discussion apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ4: Is there a difference between the level of meeting apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ5: Is there a difference between the level of interpersonal communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

Definitions

The following definitions were used for this study:

1. *Communication apprehension* - Communication apprehension is an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons (McCroskey, 1976, 1977, 1984).

2. *Exposure therapy* - Exposure therapy is strategies used to treat anxiety, fear, and other intense negative emotional reactions by exposing individuals to situations that create the negative emotion (Finn et al., 2009).

3. *Peer practice* - Peer practice is a method of gradual desensitization in which students practice and examine their own and classmates' reactions, analysis, and mastery of content and skills (Crouch & Mazur, 2001; Whitworth & Cochran, 1996).

4. *Public speaking anxiety* - Public speaking anxiety is a situation-specific social anxiety that arises from real or anticipated enactment of an oral presentation (Bodie, 2010).

5. *Group discussion apprehension* - Group discussion apprehension is a a dislike of participation in group discussions resulting in nervousness and tenseness during such situations (McCroskey, 1982b).

6. *Meeting apprehension* - Meeting apprehension is nervousness or anxiety experienced during interactions with one or more persons (McCroskey, 1982b).

7. *Interpersonal communication apprehension* - Interpersonal communication apprehension is apprehension experienced during any form of communication with another person (McCroskey, 1982b).

CHAPTER TWO: LITERATURE REVIEW

Overview

The purpose of this literature review is to examine the existing body of knowledge regarding communication apprehension and forms of exposure therapy, such as peer practice. The research included in this section endeavors to understand existing research and trends in treating both the causes and effects of the communication apprehension. As this research study examined communication apprehension and suggested treatments from an educational perspective, the theoretical basis for this literature review is grounded in educational and sociocultural learning theory. Vygotsky's (1978) sociocultural learning theory will serve as the theoretical framework for this literature review. Within the framework of sociocultural learning theory, sociocultural development and the zone of proximal development will also be examined. The theoretical framework will also examine the underlying theory of exposure therapy and provide a rationale for research into understanding and treating communication apprehension in the educational setting. An in depth examination of communication apprehension is offered, which includes: a review of historical perspectives and early definitions of the condition, an examination of the most widely accepted definition of communication apprehension, a summary of communication education curricula, current research and trends in treatment of communication apprehension in both clinical and educational settings, and an analysis of trends in the application of communication apprehension therapies and treatments in the public education classroom. The final section of the literature review will examine the impact of clinical and educational exposure treatments on communication apprehension, as well as a call for further study of treatments for communication apprehension in specific K-12 populations.

Theoretical Framework

Researchers have long examined how individuals communicate with one another. In order to effectively examine the current status of communication apprehension research, a thorough understanding of the underlying theory behind human communication is necessary. A number of theories work together to provide a framework for communication apprehension. Psychoanalytic theory serves to explain the emotional responses that individuals experience when confronting anxiety-inducing situations, while Vygotsky's sociocultural learning theory explores the cognitive relationship between the self, society and the impact that each of these has on the development of learned skills, such as communication (Miller, 2011). This theoretical framework will also examine the theory behind the development of exposure therapy, which includes peer practice as a means of treating fears and anxiety in the field of psychology.

Psychoanalytic Theory

Psychoanalytic theory touts the natural emotional characteristics of individuals in their behavior and response to circumstances (Miller, 2011). Freud developed psychoanalytic theory to examine the "painful effect of shame in the context of the individual's fear of being exposed" (Weiss, 2016, p. 1585). Psychoanalytic theory gives insight into the anxiety and trepidation experienced by people in stressful situations. The anticipation and anxiety of communication experiences can cause individuals, who may interact with others normally in low-stakes situations, to become overwhelmed by their emotions during stressful experiences. Mayes (2009) described this relationship as

> [A] student's attitude toward school in general or a specific subject—even a specific assignment—may be related to deeper psychological issues that are troubling the child and preventing him or her from fully engaging with the subject matter at hand. (p. 546)

Psychoanalytic theory serves to explain the need from a developmental level to understand the relationship between learning situations and past experiences that could have a psychological impact. Huhtala (2016) discussed the contradiction between societal needs and individual needs, which can "lead to the use of psychological defense mechanisms, such as self-deception and rationalization" (p. 698). In the case of communication, society requires interpersonal communication in a variety of modalities, including group discussion and public speaking, which are often in opposition to individual desires to avoid such situations out of fear of judgement or criticism. The opposition of these two needs can foster the development of social anxiety and communication apprehension. Through the lens of psychoanalytic theory, the origin of communication apprehension can be rooted in negative prior experiences thus fostering possibly lifelong fears and anxiety during communication situations.

Vygotsky and Sociocultural Learning Theory

Sociocultural learning theory asserts that learning and development can only be understood properly by analysis of the process of learning rather than the product (Lantolf & Thorne, 2006; Yildirim, 2008). The theory, developed by Vygotsky, asserts that learning can only be fully understood considering the process as having individual, social, and cultural dimensions, with each dimension incapable of isolation from the other (Kozulin, 2003). Vygotsky's learning theory provided for teachers a new way of thinking about learning and assessment (Sternberg & Grigorenko, 2002). According to Vygotsky (1978), "Learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with peers" (p. 90). Critics of sociocultural theory argue that Vygotsky did not acknowledge the role of the individual in learning and thus did not recognize the opportunity for an individual to overcome social norms

based on personal understandings (Lui & Matthews, 2005). However, Vygotskian supporters urge that learning is influenced by social and cultural factors, including language and environment (John-Steiner & Mahn, 1996). Learners first learn through observation of others and progressively apply skills and concepts learned through these observations to their own learning (Lave & Wenger, 1991). The process of learning suggested by sociocultural learning theory explains the process by which students learn, not only from teachers, but from peers and specific experiences (McInerney, Walker, & Liem, 2011). Depending on the context and outcome of these experiences, emotional responses, both positive and negative, may be developed to certain situations and stimuli, explaining the condition of apprehension in some individuals.

Sociocultural development theory. Voygotsky (1978) theorized that social interactions lead to cognitive development (Sanders & Welk, 2005). This theory, known as sociocultural development theory, explains the social learning that individuals experience when working with and observing peers and adults. This learning occurs first in the home by caregivers and then progresses to the classroom and educational environment. Knowledge, via sociocultural development, is constructed through social interaction and experience (Tracey & Morrow, 2006). There are three stages of sociocultural development: modeling by a more experienced individual, self-directed practice, and internalization of learning resulting in consistent performance development (Miller, 2011). According to Chall (1983), "individuals progress through stages by interacting with their environment—the home, school, larger community, and culture" (p. 11). These stages allow individuals to gain knowledge and experience by observing others (Matusov, DePalma & Drye, 2007). Vygotsky's constructivist approach to learning theorized that individuals create knowledge through interactions with the environment and peers; in education,

this takes the form of teachers acting as guides for students as they actively engage in the learning process (Panhwar, Ansari, & Ansasri, 2016). This theory is essential to the understanding of how individual interactions could impact possible causes and treatments for communication apprehension. Not only can individuals connect positive or negative experiences to specific contexts and stimuli, but they can also use social learning and interactions as possible treatments to mitigate the effects of prior negative interactions. The present study suggests peer interactions as a means of exposure to anxiety-inducing stimuli. This model is supported by the framework of the sociocultural constructivist approach; "…rather than emphasizing characteristics of the final products, process-oriented instruction focuses on the language and problem-solving strategies that students need to learn in order to generate those products" (Applebee, 1993, p. 5). In this case, student focus on the process of peer practice and honing of presentation skills will, according to this theory, inherently add to the knowledge of communication. The added knowledge and confidence constructed through the process may in turn lessen anxiety.

      Zone of proximal development. Developed according to Vygotsky's (1978) theory surrounding scaffolding, the zone of proximal development refers to the difference between a learner's ability without help and what can be done with help. Vygotsky (1935) described the zone of proximal development (ZPD) as the "distance between the level of actual development, and the level of a child's potential development" (p. 42). The ZPD, much like sociocultural development theory, describes how a child unfamiliar with a concept or practice goes through the process of observing and learning from others to an extent that they are eventually able to be the experts themselves (Bozhovich, 2009). Haynes (1990) described communication as a collection of behaviors "generating an exponentially complex skein of cues and clues that affect

the meaning exchanged and shared" (p. 97). In relation to communication development, the zone of proximal development describes how individuals develop communication skills through observation and new experiences shared by participants in interactions. For individuals with communication apprehension, the zone of proximal development could provide an opportunity to strengthen communication skills, possibly reducing apprehension and anxiety as skills develop.

Exposure Therapy Theory

Exposure therapy has long been used in the field of psychology as a treatment for a variety of behavioral disorders ranging from posttraumatic stress disorder (PTSD) (Ready et al., 2011) to Body Dysmorphic Disorder (Ramnero & Folke, 2012). The principle underlying exposure therapy argues that exposure to feared stimulus over time reduces the fear of the stimulus itself (Akkoyunlu, 2013). Abramowitz and Jacoby (2014) stated, "exposure therapy involves the patient intentionally confronting feared, but objectively safe, objects, situations, thoughts, and bodily sensations with the goal of reducing fear and other negative reactions" (p. 278). Exposure therapy has also been adapted for use in non-psychological contexts such as the classroom environment (Herzig-Anderson, Colognoria, Fox, Stewart, & Warner, 2012; McInerney & McKlindon, 2014). When connected with the learning that occurs through social and society interaction and the zone of proximal development, exposure therapy can be used to strengthen skills and reduce apprehension through practice and desensitization to anxiety-inducing stimuli. Exposure therapy can take many forms. In clinical settings, exposure therapy may take the form of systematic desensitization, graded exposure, flooding, prolonged exposure, or exposure and response prevention. Additionally, cognitive restructuring or medication may be used (Ready et al., 2011). In educational settings, exposure therapy is rarely referred to as such and is often utilized without the specific intention of applying exposure therapy techniques;

however, the theory underlying exposure therapy is often easily applied to the classroom. Exposure therapy in the classroom most frequently aligns with the concepts of systematic desensitization or graded exposure. Forms of exposure therapy in the classroom include, but are not limited to, peer practice, virtual reality therapy, and peer tutoring and feedback. Despite these adaptations, few well-documented models exist for adaptation of exposure therapy outside of the clinical setting, possibly because many non-clinical studies apply the principle of exposure therapy and its underlying theory without fully crediting it as "exposure therapy."

Rational for Communication Apprehension Research

Communication apprehension is a widespread psychological and physical phenomenon. While most researchers accept one common definition of communication apprehension, researchers debate whether communication apprehension should be viewed as a trait or state of being (Bourhis, Allen, & Bauman, 2006). Research into communication apprehension was given credence in 1973 when Bruskin Associoates conducted a fear study, which found that 40% of respondents reported their number one fear as public speaking (Speech Communication Association, 1973). Recently, this study was examined and replicated by Dwyer and Davidson (2012), who found similar results to confirm the original Bruskin report; the college-age participants only reported death as more feared than public speaking. Research has also examined cross-cultural trends in communication fears. A 2015 study evaluated the national differences in communication apprehension between individuals of varying ages from England, Finland, and Germany. Researchers found that English participants had the lowest communication apprehension levels. Finnish participants had the highest levels of communication apprehension, while German participants fell in the middle (Croucher, Sommier, Rahmani, & Appenrodt, 2015). This study is consistent with previously conducted studies (Lu &

Hsu, 2008; McCroskey, Gudykunst, & Nishida, 1985; Richmond, McCroskey, McCroskey, & Fayer, 2008; Sallinen-Kuparienen, McCroskey & Richmond, 1991), and implications suggest that the strong emphasis on oral communication of the English education system could contribute to these lower levels of communication apprehension. These studies provide the basis and rationale for conducting research in communication apprehension by confirming the prevalence of the condition among the general population. The present study will add to the existing knowledge of communication apprehension and possible treatments in high school students.

Related Literature

Communication has been studied for generations, both for the direct impacts on civilizations and the indirect consequences of such communication (Vangelisti, 2016). Communication apprehension changes the very nature of how an individual can and will communicate with others; therefore, before a thorough examination of the treatments and research surrounding communication apprehension can occur, it is necessary to fully understand the concept of communication apprehension and how this phenomenon impacts those suffering its effects. The following section will provide a research-based definition of communication apprehension developed through early research and an evolving lexicon from stage fright to public speaking anxiety as well as examine related terminology and perceptions of communication apprehension. The research and contributions of McCroskey will be examined, as he is the most prominent source of common knowledge, definitions, evaluations and measures, and treatment suggestions for communication apprehension. This section will also examine the arguments surrounding the debate of labeling communication apprehension as a state or trait anxiety. Additionally, a description will be provided to detail the impact of the

physical, psychological, and cognitive anxieties on individuals suffering from communication apprehension.

Defining Communication Apprehension

Communication apprehension has been studied for decades in both educational and clinical settings (Dwyer & Davidson, 2012). Communication apprehension is a complex term encompassing apprehension of a number of communication experiences, including group communication and public speaking anxiety (McCroskey, 1984). Additionally, the definition of communication apprehension has been honed to include physical responses to anxiety as well as psychological and cognitive responses to anxiety. Communication apprehension is a term coined by renowned communication education researcher James McCroskey (Beatty, 2009). Prior to McCroskey's coining of communication apprehension, communication research utilized a variety of terms in reference to the anxiety produced in response to varying communication situations, including stage freight, reticence, and shyness (McCroskey, Tevin, Minielli, & Richmond-McCroskey, 2014). In addition to the development of the widely known and accepted definition of communication apprehension, McCroskey created two of the most frequently used measures of communication anxiety: the personal report of communication apprehension (PRCA) and the more reliable personal report of communication apprehension-24 (PRCA-24). In addition to defining and measuring communication, McCroskey devoted large portions of his research to identifying how communication anxiety could be reduced and treated through pedagogy and classroom experiences. The follow sections will chronicle the evolution of communication research from early terminology to physical and psychological effects of communication apprehension.

Stage fright. In 1970, McCroskey referenced stage fright as a "persistent concern of both teachers and researchers" (p. 1), but the study of stage fright was far from new. The early 20th century saw research of the stage fright phenomenon (Clevenger, 1956; Holingsworth, 1935; Lomas, 1937). Researchers defined "stage fright" as circumstances in which individuals fear audience situations (Paivio & Lambert, 1959). Researchers like McCroskey theorized that reactions that produced stage freight were actually connected to underlying apprehension about communication (McCroskey, 1984), and a more refined definition of communication apprehension began to develop to include communication in varying contexts. Researchers constructed "trait measures of communication apprehension to operationalize speaker anxiety states" (Behnke, Sawyer, & King, 1987, p. 138), which honed identification of markers to narrow the focus of communication research. This research served as the basis for studies focused on speech fear and anxiety as well as performance anxiety (Daly, 1978). As research studies into stage fright increased and knowledge of the condition deepened, terminology evolved from stage fright to experience-specific terminology to focus on communication-scenario apprehension and anxiety (Bodie, 2010).

Public speaking anxiety. From the onset of research of stage freight, public speaking was viewed as the primary anxiety-inducing situation. As such, extensive research has been done to examine the characteristics, measurement, and treatment of public speaking anxiety. The definition of public speaking anxiety (PSA) was developed over many years and research studies by a variety of researchers (Ayres & Hopf, 1985; Clevenger, 1984; MacIntyre & Thivierge, 1995; McCroskey, 1977). Bodie (2010) compiled the definitions of many of the most prominent theorists into a widely accepted definition of PSA, which states: "PSA is defined as a situation-specific social anxiety that arises from the real or anticipated enactment of an oral presentation"

(p. 72). PSA is an accepted subtype of social anxiety (Blote et al., 2009) and is related to audience anxiety (Beatty & Behnke, 1991) and communication apprehension (Jackson & Latane, 1981). Using these definitions as a foundation, many researchers have attempted to further understand PSA from a variety of perspectives, including the physical, cognitive, and psychological trademarks of PSA.

Public speaking anxiety is characterized by specific physical and cognitive responses to oral presentation situations. Seiler and Beall (2011) analyzed the physical behaviors affected by public speaking anxiety, which include voice, fluency, mouth and throat, facial expressions, arms and hands, body movement, and other symptoms. Speaking anxiety can cause a quivering, monotonous voice that may be too soft, too fast, or non-emphatic; stammering; awkward pauses; heavy breathing; frequent clearing of the throat or repeated swallowing; little to no eye contact or rolling of the eyes; tense facial muscles; grimaces and twitches; rigid, tense, fidgeting, or waving hands; swaying, pacing, shuffling feet or weight shifts; as well as overheating, dry mouth, or butterflies in the stomach (Seiler & Beall, 2011).

As a result of the increased interest in public speaking anxiety, researchers developed methods of measuring PSA. McCroskey (1977) developed the Personal Report of Public Speaking Anxiety (PRPSA); this 34-item scale was unique in that it solely measured participants' reported levels of PSA without considering other communication situations. While this scale was highly reliable and is still available for use, subsequent research began to move toward a more generalized definition of communication apprehension. In response to this shift, McCroskey (1982a) developed the Personal Report of Communication Apprehension 24 (PRCA-24). Rather than focusing strictly on public speaking anxiety, the PRCA-24 measures communication apprehension on four subscales of communication situations: public speaking,

speaking in small groups, speaking in meetings, and speaking dyads. This shift in focus allowed

for a more complete and complex understanding of anxiety and apprehension surrounding the

varying contexts of public communication.

Communication apprehension. In developing a complete definition of communication

anxiety, researchers considered a multitude of possible influential factors on communication

performance, including intelligence, family history, and student achievement. Within the

communication community, McCroskey has long been credited for the "best-known work" on

communication apprehension (Littlejohn & Foss, 2008). McCroskey (1976) posited that

communication apprehension is not inherited but rather learned during early childhood.

Additional research revealed that the presence of communication apprehension is not indicative

of low intelligence (Bashore, 1971); however, individuals with high communication

apprehension were shown to have lower achievement in traditional classroom environments

(McCroskey, 1976). From this research, the widely accepted and long-used definition of

communication apprehension was developed, which states: "communication apprehension is

defined as an individual's level of fear or anxiety associated with either real or anticipated

communication with another person or persons" (McCroskey & Beatty, 1984, p. 81). This

definition has served as the cornerstone of communication apprehension research for over 30

years (Bodie, 2010).

Despite the commonly accepted definition of communication apprehension, debate still

exists as to whether communication apprehension should be considered a trait or a state (Blume,

Baldwin, & Ryan, 2013). When considered a trait, communication apprehension is seen as an

"enduring personality characteristic that goes across situations and tends to be stable" (Hewes &

Haight, 1980, p. 355). However, opposing viewpoints argue that due to the situation-dependent

nature of communication apprehension, it is more appropriate to define it as a state, which is impermanent and episodic (McCroskey, 1982b). While McCroskey's research viewed communication apprehension as a state, the modern, research-based consensus views communication as more of a trait due to the transfer of anxiety and apprehension to varying situations across a wide variety of contexts (Bourhis et al., 2006).

Physical responses to anxiety. Speech tasks have long been used as instruments to induce anxiety states in clinical settings (Pull, 2012; Schoofs, Hartmann, & Wolf, 2008). As a result, much has been discovered about the physical responses to communication apprehension from these studies. Higher blood pressures for hypertensive individuals engaged in various public speaking experiences have been documented (Palatini et al., 2011), while public speaking anxiety has also been found to increase heart rate and skin conductance levels (Beatty & Behnke, 1991; Moscovitch, Suvak, & Hofmann, 2010; Stevens et al., 2010). A positive correlation has also been found between increased anger and anxiety for individuals suffering from communication anxiety (Carroll et al., 2011) and elevated cortisol levels when compared to individuals not suffering from such anxiety (Garcia-Banda & Severa, 2011). Individuals with communication apprehension often exhibit less eye contact, reduced variability in voice, and excessive pauses during speech tasks (Wortwein et al., 2015) as well as significantly worse voice intonation and fluency of speech in individuals with communication apprehension (Levitan et al., 2012). Patients exhibited "exaggerated negative emotional reactivity and reduced cognitive regulation-related neural activation" when exposed to socially stressful stimuli (Goldin, Manber, & Shabnam, 2009, p. 177). In research utilizing speech-tasks to study anxiety responses, substantial cortisol responses were observed in 55% of patients (Westenberg et al., 2009). Gender differences in physical responses to communication-induced anxiety were found, with

female participants exhibiting higher finger-pulse volume and more reactive state anxiety and amplitudes of non-specific skin conductance responses than did male participants in the same study (Carrillo et al., 2001). Despite the plethora of physical manifestations of communication apprehension, the psychological and cognitive responses are equally as complex.

Psychological and cognitive responses to anxiety. Communication apprehension not only impacts the body's physical response to fear but also causes psychological reactions to anxiety, which often negatively impact development or mental health. In the same way that much can be learned about the physical implications of communication apprehension from research using speech tasks as inductors of anxiety, much can also be learned about the emotional and cognitive responses to communication apprehension. According to MacIntyre & MacDonald (1998), "anxious speakers can show cognitive, affective, and behavioral reactions" to stressful communication experiences (p. 359). Public speaking anxiety is often associated with test anxiety (LeBeau et al., 2010), and individuals suffering from some form of social anxiety disorder (SAD), which includes public speaking anxiety and communication anxiety, have an estimated 16.1% prevalence in the population (Tillfors & Furmark, 2007). Individuals with communication anxiety have lower ability to handle perceived unfavorable facial expressions during presentations, particularly those perceived as angry (Wieser, Pauli, Reicherts, & Muhlberger, 2010); individuals with communication apprehension do not deal well with perceptions of audience adversity (Fox et al., 2000). These individuals also exhibit higher levels of negative thinking and lower levels of coping mechanisms (Shi et al., 2015).

Empirical Evidence

The purpose of this section is to explore the historical knowledge of communication apprehension and treatment as well as the current state of research into communication

apprehension and related treatments within both the fields of psychology and education. Because, historically, communication apprehension research has been conducted in fields of communication, psychology, and education, it is necessary to examine research and any proposed treatments from all disciplines. The field of communication has produced research leading to common definitions and characteristics of communication apprehension and has debated the labeling of communication apprehension as a trait or state. Additionally, research from the field of clinical psychology, often through the use of speech tasks as anxiety-inducing stimuli, has informed knowledge about triggers of communication anxiety and possible treatments. The field of education has utilized research to propose and examine possible classroom-based treatments for communication apprehension. Examination of this body of research will reveal a clear gap in researched populations, which will serve as the basis for the present study.

Communication Apprehension Research

The ability to communicate is a hallmark of advanced civilization. Communication is an essential element of almost every facet of life. As a result, disorders that impact one's ability to effectively communicate have been extensively researched. Noted as "probably the most thoroughly researched topic in the history of the communication discipline," (Infante, Rancer, & Avtgis, 2010, p. 117) communication apprehension research has evolved and extended into a number of disciplines. Communication researchers argue that it is essential to have a personal knowledge of one's own communication apprehension and the potential implications of such apprehension on future educational, interpersonal, and occupational situations (McCroskey & Beatty, 2000). Research of communication apprehension has been conducted primarily in one of

two settings: clinical or higher education; however, some research has evaluated communication apprehension within the elementary and secondary settings with limited populations.

Clinical setting. Communication apprehension, especially in the context of public speaking situations, is a recognized form of social phobia, affecting up to 40% of all diagnosed with social phobias (Ruscio et al., 2008). Stopa and Clark (2000) argued that individuals with social phobias "overestimate the threat of public criticism, scrutiny, or embarrassment" (p. 276). Clinical treatment for communication anxiety typically consists of a combination of medication and cognitive-behavioral therapy (Fitch, Schmuldt, & Rudick, 2011); however, researchers have often hypothesized the efficacy of varying, less invasive treatments without the use of medication and behavioral intervention. Hypnosis has been found to reduce some communication apprehension in individuals with social anxiety, but the efficacy of such treatments needs further extended study (Schoenberger, Kirsch, Gearan, Montgomery, & Pastyrnak, 1997a; Schoenberger, Kirsch, Gearan, Montgomery, & Pastyrnak, 1997b; Slavinski, 2005). Virtual reality exposure is possibly the most extensively-studied, non-invasive approach to treating communication apprehension (Campbell & Larson, 2013; Wallach, Safir, Bar-Zvi, 2011); however, researchers question the ability of skills acquired through virtual reality treatments to transfer into face-to-face communication experiences (Hammick & Lee, 2014).

Clinical settings often utilize public speaking as a method of inducing anxiety in experimental studies (Graeff, Parente, Del-Ben, & Guimaraes, 2003). Many research studies that have revealed possible treatments for PSA and communication anxiety did so as a result of such a study; however, Zuardi et al. (2013) found that actual public speaking experiences induce more intense physiological responses than the simulated experiences of a clinical setting. These results indicated that research utilizing real communication experiences, like those used in

educational communication research, and subsequent suggestions about treating PSA and communication apprehension might be more practically effective than clinical findings with simulated experiences

College setting. College classrooms have long been utilized as a research environment for treating communication apprehension. McCroskey's well-documented examination of communication apprehension and related treatments took place largely through college education courses. Much has been learned about the communication habits of students enrolled in institutions of higher education through such research. For example, Blume et al. (2013) found that communication apprehension among college students had a negative correlation to student willingness to adopt leadership roles, understanding and appreciation for diverse cultures, and ability to adapt to new situations. College classrooms differ from clinical settings in a variety of ways and allow for authentic communication experiences rather than simulated experiences often utilized in the clinical environment. From this setting, communication apprehension can be observed and treatment methods proposed and evaluated (Booth-Butterfield, 1988). One such treatment is corrective feedback, which can be given most effectively in the classroom setting. Zhang and Rahimi (2014) found that communication apprehension was reduced in English language learners who were given immediate corrective feedback during oral exercises. The collaborative and open environment of the college classroom also creates the perfect environment to examine the possible correlation between forced collaboration with peers and communication apprehension (Whitworth & Cochran, 1996). Byrne, Flood, and Shanahan (2012) found apprehension levels in first-year business and accounting students increased as communication settings became more public. This study also found communication apprehension was influenced by "perceptions of peer evaluations, prior experiences of

communicating with new people, and preparation activities" (p. 577). Research with undergraduate communication students found that situational contexts proved to be better predictors of communication apprehension than individual trait tendencies and that the use of imagined interactions can predict communication apprehension in multiple contexts (Honeycutt, Choi, & DeBerry, 2009).

In addition to research in traditional higher-education classrooms, which range in content from business to medicine to communication, a large portion of communication research in higher education is focused on second-language learners. Bijani and Sedghat (2016) found that English as a foreign language (EFL) learners with high levels of communication apprehension utilized a large number of communicative support strategies, whereas those with low communication apprehension used a low number of supportive strategies. Research also found that communication apprehension did not differ based on the students' progress in the English as a second language program, indicating that communication apprehension does not improve based on content knowledge without implementation of strategies designed to reduce communication apprehension (Sabri & Qin, 2014). Research based in higher education classrooms provides the foundation for communication apprehension research, and the knowledge gathered from these studies adds not only to the general body of knowledge about communication and related anxieties but also helps inform and direct educational research in other populations.

K-12 setting. Elementary and secondary populations are researched far less frequently than higher education populations. This could be due in part to a lack of access, as most researchers are able to utilize the institutions of higher education in which they work. Communication studies departments at many universities and colleges have added a great deal to the general knowledge of communication apprehension because of the ability to focus solely on

communication skills and strategies in such classes. Such a focus not feasible for elementary and secondary classrooms, many of which only recently adopted standards that set specific mastery expectations for communication and collaboration. Additionally, the extensive approval and consent required of under-aged participants poses more challenges than do those of college-aged participants (Hatch, 2002). Despite these challenges, some researchers have ventured into the K-12 setting to examine communication apprehension. McCroskey, for example, began his first communication apprehension research studies in his own high school classroom before moving into university populations. In this study, McCroskey (1958) recommended program adjustments based on student performance and need, with specific endorsement of an isolated speech curriculum to increase student preparation and performance. Communication apprehension within the elementary and secondary classroom setting may manifest itself in manners different than those observed in clinical settings (Horwitz, Horwitz, & Cope, 1986). There may be many explanations for this, including the fact that many individuals evaluated in clinical experimental settings are much older than elementary- and secondary-aged children, thus their communication apprehension has had longer to manifest and increase in severity (McCroskey, 1977). Tang (2016) argued that communication apprehension, specifically public speaking, can manifest in children in any of the following ways: "contorted sounds or with an edge to the sound, inappropriate pronunciation of the target language, avoidance of eye contact, unnatural facial expression, forgetting some simple words or expressions familiar to them, [and] keeping silent when required to speak" (p. 751).

As with higher education research, much of the research in the K-12 setting regarding communication apprehension is focused on second language learners (Pappamihiel, 2002). Tang (2016) argued that English-speaking tasks produce learned language anxiety and hinder language

learning and achievement. However, despite the overrepresentation of second language courses in educational communication apprehension research, Young (1990) reported that the anxiety of high school second language learners was actually caused by speaking in front of the class, not speaking in the foreign language. This indicates a need to examine methods of reducing communication apprehension in varying communication contexts.

Communication curricula in K-12 schools. Hall et al. (1999) stated, "Given the importance of oral communication, it is incumbent on the public education system in the United States to develop and implement the best curriculum and pedagogical methods for ensuring that all students achieve communication competence" (p. 139). Developed in 2010, the Common Core State Standards for English Language Arts attempted to heed this advice and outlined specific, measured speaking and listening standards for communication. Forty-two out of the 50 states in the United States have adopted the Common Core State Standards for English Language Arts and mathematics (National Governors Association Center for Best Practices, 2010). Aquino-Sterling (2014) argued that the new Speaking and Listening standards of Common Core expect that students be able to communicate with more poise and sophistication than expected in the past. Even in states where Common Core has not been adopted, which include Alaska, Indiana, Minnesota, Nebraska, Oklahoma, South Carolina, Texas, and Virginia, standards adopted or written in place of Common Core still include similar communication expectations (Common Core State Standards Initiative, 2016). In addition to traditional state or Common Core standards, many states have added performance tasks to their requirements for earning a high school diploma, many of which involve public speaking and oral presentations (Scheeler, Macluckie, & Albright, 2010).

In light of the increased communication expectations placed on students, it is relevant and necessary to consider how students feel in regard to the communication instruction they receive in the classroom. Student opinions on the efficacy of public speaking curricula reveal that students do not feel adequately prepared for college and career-level communication, including group interactions and public speaking (Kahl, 2014). This provides additional credence to expanding communication apprehension research to the K-12 setting. Rather than examine and propose treatments after communication apprehension has advanced, appropriate preparation and education in effective communication skills along with methods of dealing with anxiety are prudent. Nash, Crimmins, and Oprescu (2016) found that first-year college students who completed exercises pre- and post- public speaking assessment had greater satisfaction in the course and less fear, indecision, and confusion about public speaking tasks and the physical act of speaking in front of a large group (p. 594). These results indicated that in-class treatment of public speaking anxiety and communication apprehension may be possible if communication standards are adequately addressed through student preparation and practice.

In addition to the need for research to examine the efficacy of communication pedagogy, additional research is needed to fully understand the impact of standards-based communication assessments on students of varying backgrounds and enrolled in varying content areas. Some evidence suggests that students of different ethnicities have varying perceptions about communication apprehension (Martini, Behnke, & King, 2009), but such research is confined to student perceptions of peers and does not consider personal experiences with anxiety. Many existing studies to consider students' perspectives on anxiety and speaking do so in relation to foreign language courses rather than English Language Arts courses (Young, 1990), indicating a need for increased research in other content areas. While the move toward communication

standards may more accurately reflect modern, real-world communication experiences, a research investment is needed to fully understand how to best deliver and assess such standards to diverse student populations.

Trends in Treating Communication Apprehension

Treatment of communication apprehension has been a concern of scholars for generations (Hayworth, 1939; Robinson, 1959), but treatment of communication apprehension is hardly a cut and dry exercise. Because reactions and symptoms, both physical and cognitive, to communication apprehension present in a variety of ways and can differ greatly from one person to the next, it is difficult to identify any one specific treatment method. Early treatment suggestions rose primarily from personal experience and trial and error in environments where communication was a necessary byproduct of learning and collaboration. According to Bodie (20010), early research drew from "classroom experiences, teaching suggestions, and classroom activities" (p. 86). Over time, research moved from school-based studies to treatments focused in the psychological and medical disciplines (Duff et al., 2007). Modern trends in treating communication apprehension tend to focus on cognitive-behavioral therapies (Pull, 2012), Internet-based treatments (Tillfors et al., 2008), and drug therapies (Donahue et al., 2009). Educational research is skewed toward higher education and second-language learners, with no clear or specific treatment emerging as most effective or practical for implementation in the classroom environment.

Internet-based treatments. The advent of Internet treatments for psychological conditions led to the development of a program, "Talk to Me," designed to act as a self-help program for individuals with public speaking anxiety (PSA). This program proved effective in treating PSA and the effects of such treatments lasted in researcher follow-ups (Botella et al.,

2009; Gallego et al., 2011). Other research has examined using Internet treatments as therapy replacements for individuals suffering from communication anxiety; these treatments have proven effective at easing public speaking anxiety but have not been tested as treatments for group communication anxiety (Tillfors et al., 2008). Capan (2013) found that virtual meetings yielded a drastic reduction in participants with high communication apprehension. Self-reports from the same study also found positive changes in attitudes about communication and increased intercultural awareness.

There are, however, several challenges of using Internet-based treatments for communication apprehension. Internet treatments are designed for use by trained psychological professionals, and thus are not easily applicable to the school environment (Sun, 2012). Alternatively, simulated communication situations like those used by Internet-based treatments may be less effective than face-to-face communication experiences. Hammick and Lee (2014) found that face-to-face communication was more effective in influencing behavioral changes than changes influences by virtual worlds, which is largely impacted by a "lack of visual/auditory cues in virtual reality" (p. 308).

Drug therapies. Medication has frequently been used to treat severe cases of social anxiety, which includes communication apprehension. According to Mohatt, Bennett, and Walkup (2014), "a number of studies have evaluated medications for childhood social phobia" (p. 742). Selective serotonin re-uptake inhibitors (SSRIs), drugs used as antidepressants to treat depression and anxiety, are often examined as possible treatments for social anxiety. While these social phobias are not strictly limited to communication anxiety, they do include anxiety in a number of contexts related to communication apprehension, including group, peer-to-peer, and public speaking. One study found 30% of participants showed reduced social anxiety when

taking fluoxetine, an SSRI, over a 12-week trial compared to participants in the placebo group (Beidel et al., 2007). Additional studies have evaluated the efficacy of other antidepressants and SSRIs, the results of which generally support medications ability to produce greater response rates than placebo groups (March, Entusah, Rynn, Albano, & Tourian, 2007; Guastella, Howard, Dadds, Mitchell, & Carson, 2009; Wagoner et al., 2004; Mrakotsky et al., 2008).

Cognitive treatments. Cognitive treatments of public speaking anxiety "attempt to replace problematic public speaking cognitions with more positive views of public speaking and the self as a public speaker" (Bodie, 2010, p. 87). Researchers posit that cognitive behavioral therapies can help participants, through training, to develop metacognition about their own thinking and behavioral practices (Dobson & Dobson, 2016). Cognitive behavioral therapy is one of the most trusted and well-documented clinical treatments for communication apprehension but is only advisable for severe cases being treated in a clinical setting (Smits & Hofmann, 2008). Cognitive behavioral therapy aims to reduce anxiety in four ways: allow participants to identify feelings of anxiety and physical and cognitive reactions, identify and recognize possible anxiety-inducing stimuli, develop coping skills, and evaluate the efficacy of such coping skills (James, James, Cowdery, Soler, & Choke, 2013). Cognitive behavioral therapy was found to be a possible treatment for public speaking anxiety when using virtual reality for exposure therapy (Anderson, Zimand, Hodges, & Rothbaum, 2005). Wallach et al. (2011) affirmed that the combination of virtual reality and cognitive behavioral therapy provide an effective method of cognitive intervention for those suffering from communication anxiety. Cognitive restructuring via the Lefkoe Method (TLM) has been proven as an effective cognitive treatment for PSA that can "eliminate" PSA over time (Cunningham et al., 2006, p. 190). Virtual reality treatments utilizing cognitive behavioral therapy have also proven effective in

reducing communication apprehension in college-aged students (Harris et al., 2002). Dutch researchers found increasing positive thoughts and decreasing social anxiety during cognitive behavioral treatment; however, while positive thoughts increased, negative thoughts did not decrease, thus only partially supporting the model as a means of alleviating anxiety (Hogendoorn et al., 2014). Each of these treatments was researched and proven effective within a clinical setting. This setting cannot be easily replicated in school settings, indicating a need for treatments centered in the educational realm.

Educational-setting treatments. A national survey of in-class treatment techniques for communication apprehension determined that teachers are "treating apprehensive students during regular class time by concentrating on skills training…creating supportive and positive environments, recognizing PSA as normal, and teaching techniques to handle feelings of apprehension" (Robinson, 1997, p. 188). Audience-based speech practice has been found to be effective at improving student speech evaluations, but no connection was found between increased practice and reduced anxiety and apprehension (Smith & Frymier, 2006). Self-directed cognitive restructuring exercises, when used within a college course, have been proven to improve communication apprehension in students (DiBartolo & Molina, 2010). Voice blogs have been found to improve speaking proficiency in some students but show no indications of reducing communication apprehension (Sun, 2012). Other researchers urge a necessary transformation in classroom environment to treat communication apprehension. Booth-Butterfield (1988) reported that context has a strong impact on communication anxiety and higher motivational factors improve anxiety symptoms for some individuals.

Another instructional approach is the utilization of sketching activities. Classrooms utilizing sketching activities in which participants attempt to illustrate their fears about public

speaking are reported as more supportive classroom environments, thereby decreasing some fear

of public speaking (Rattine-Flaherty, 2014). Some researchers also advocate the inclusion of a

"fundamentals of speech" course as a way of reducing communication and public speaking

anxiety. This research indicates that such courses can be easily included in a general education

curriculum and suggest that this type of course does in fact reduce PSA for participants enrolled

(Hunter, Westwick, & Haleta, 2014). Whitworth and Cochran (1996) found a multiple

integrative approach to treating communication apprehension was more effective than treatments

approaches used in isolation, indicating the possibility of combining research-proven strategies

to increase the likelihood of efficacy.

Exposure Therapy

Exposure therapy is a form of cognitive behavioral therapy and the most widely used and

accepted form of treatment for social phobias, including communication apprehension (McNally,

2007; Wallach et al., 2011). As exposure therapy has proven effective in a variety of contexts

and situations, it is necessary to differentiate between the use of exposure therapy in clinical

applications from those in educational settings. In educational settings, treatments may often not

be referred to explicitly as exposure therapies but many share the same theory, approach, and

goals as clinical exposure therapies.

Clinical applications and findings. Exposure therapies have been utilized since the

mid-20th century for the treatment of a variety of anxiety disorders. Exposure therapy involves

exposing an individual to a feared stimulus with the goal of overcoming the anxiety through

desensitization to the feared stimuli. Exposure therapy proved effective in eliminating panic in

up to 85% of individuals with clinically diagnosed panic disorders after receiving an eight-week

treatment of group exposure therapy (Telch et al., 1993). Jaycox, Foa, and Morral (1998)

determined that exposure therapy for PTSD resulted in increased emotional engagement and habituation of positive coping mechanisms. Parsons (2008) found that virtual reality exposure therapy reduced anxiety symptoms in over 21 individual research studies. Exposure therapy was found to decrease self-report measures of public speaking anxiety for participants with social phobias with specific fear of public speaking; results were maintained at follow-up evaluation (Anderson et al., 2005). Seim, Waller, and Spates (2010) found that traditional exposure therapies, which focus on prolonged exposure to the fear-inducing stimulus, are no more effective than a series of brief exposures to the same stimulus; both approaches showed success in treating anxiety, but the brief exposure approach resulted in a greater reduction of public speaking anxiety. Hindo and Gonzalez-Prendes (2011) found similar results when examining the efficacy of one-session exposure therapy for social anxiety with specific fear of public speaking.

Educational applications and findings. The educational setting is unique in that a traditional classroom naturally lends itself to many forms of communication exposure therapy. Traditional pedagogical approaches of modeling, scaffolding, and independent practice fit with the model of exposure therapy. Many teachers may implement exposure therapy treatments in their classrooms without knowing that they are doing so, or without labeling such teaching methods as "exposure therapy." This may explain the relatively small amount of research surrounding exposure therapy in classroom settings. Despite these challenges, some educational researchers have documented explicit use of methods of desensitization to reduce classroom anxieties. In 1970, McCroskey, Ralph, and Barrick provided evidence that systematic desensitization greatly reduced speech anxiety in college students, and proposed such desensitization training, delivered via properly trained classroom teacher, as a treatment for severe speech anxiety (p. 36). As the process of desensitizing individuals to fear-inducing

stimuli is at the core of exposure therapy, this research provided one of the first empirical examples of the efficacy of exposure therapy in treating a form of communication apprehension. MacIntyre and MacDonald (1998) found that the audience, or a student's peers in a classroom, account for more changes in public speaking anxiety than skills training. The implications of such findings suggest that utilization of one's peers is essential in eliminating communication apprehension. Peer collaboration and practice has been associated with high-level co-regulation of learning and help develop co-learning techniques (Volet, Summers, & Thurman, 2009). In addition to peer collaboration, peer-tutoring has also been utilized to foster exposure therapy in the classroom. According to Ward and Ayvazo (2006), "peer-tutoring can be categorized as peer-assisted learning and includes other forms such as class-wide peer-tutoring, and peer-assessment" (p. 236). Class-wide tutoring involves students working in reciprocal, rotating roles of tutor and tutee, while peer-tutoring utilizes established pairs (Ward & Lee, 2005; Kalef, Reid, & MacDonald, 2013). Finn et al. (2009) found evidence that exposure therapy in the form of peer practice reduced public speaking state anxiety in college-aged students, while students who did not participate in peer practice showed higher levels of public speaking state anxiety.

In the elementary classroom, Boyce, Alber-Morgan, and Riley (2007) asserted that public speaking fear can be reduced through gradual exposure to communication tasks that begin with nonthreatening challenges and move toward more complex tasks. Though not labeled as a form of exposure therapy, the essence of this tactic for teaching communication skills matches that of the principles of desensitization underlying exposure therapy, which assert that individuals learn to conquer their fears through experience and exposure, growing more comfortable with the feared task as they progress (Wallach et al., 2011).

At the secondary level, little research has been conducted in the realm of specific treatments for communication apprehension. Research that has been done has been set in the foreign language environment to assess reductions in communication apprehension for students learning English as a second language (Rivera, 2010) or English speakers learning a second language, such as Spanish or German (Cunningham et al., 2006). While these studies provide some information about communication apprehension, the added stress of learning a new language may impact and bias anxiety levels analyzed in such studies; therefore, possible treatments may not be transferable as possible treatments of general communication apprehension. Virtual reality and computer simulated practice, both forms of exposure therapy, have been tested in the foreign language context and have proven effective in reducing communication apprehension (Sun, 2012). Overall, cognitive behavioral therapy, the basis for exposure therapy, is widely accepted and utilized within the school setting for treatment of social anxiety disorders and special education purposes, such as modifying the behavior of students with autism (Herzig-Anderson et al., 2012). Future research should focus on adapting exposure therapy for practical use in the classroom (Finn et al., 2009), with a specific emphasis on adding to the body of knowledge about the impact of exposure therapy to reduce communication apprehension in populations outside of a higher education setting.

Call for Further Study

Researchers have long studied the impact of communication apprehension on the physical and mental well-being of individuals of all ages. However, much of the educational research involving communication apprehension has been conducted at the college level, thus researchers have acknowledged and urged that future research must focus on studying possible treatments in alternative populations, such as high school students (Marinho et al., 2016).

Additionally, educational research has revealed that students themselves crave instruction in

methods that will allow them to improve communication skills and treat their own

communication apprehension (Kahl, 2014; Marinho et al., 2016). No therapy has proven as

effective in clinical settings as exposure therapy (Craske, Treanor, Conway, Zbozinek, &

Vervliet, 2014). While little educational research utilizes treatments specifically called

"exposure therapy," treatments have been suggested in the educational setting that utilize

desensitization techniques, a cornerstone of exposure therapy (Ayres & Hopf, 1992; McCroskey

et al.,1970; Nash et al., 2016; Weissberg & Lamb, 1977). Due to the efficacy of such treatments,

educational researchers have adapted and utilized the elements of exposure therapy in the

classroom to treat communication apprehension (Finn et al., 2009); however, further study with

populations outside of university settings is needed to determine the applicability of such

exposure therapy-inspired treatments to younger populations (Marinho et al., 2016). By utilizing

a high school population for the present study, the gap in the existing literature will be addressed,

adding to the existing body of knowledge about possible treatments for communication

apprehension.

Summary

Sociocultural learning theory and the zone of proximal development provide a framework

by which one can understand how individuals learn from one another and how both social and

environmental influences impact learning. The theory of exposure therapy asserts that gradual

desensitization to anxiety-inducing stimuli can reduce said anxiety over time. In educational

contexts, the theory underlying exposure therapy connects with the observation and progressive

application of skills and concepts at the center of sociocultural learning theory (Lave & Wenger,

1991). In this respect, forms of exposure therapy such as peer practice may allow individuals to

gradually improve skill and comfort with a learning task by allowing individuals to learn from

one another as well as the educational environment. Communication apprehension has been

known by many names. What was once known as stage freight (Clevenger, 1956) evolved into a

specific area of research known as communication apprehension (McCroskey, 1976).

Communication apprehension is defined as "fear or anxiety associated with either real or

anticipated communication with another person or persons" (McCroskey & Beatty, 1984, p. 81).

Individuals suffering from communication apprehension often experience both physical

symptoms, including increased heart rate (Stevens et al., 2011) and cortisol levels (Garcia-Banda

& Stevera, 2011) and psychological symptoms, including reduced confidence and negative self-

perception (Seiler & Beall, 2011). During communication situations, individuals suffering from

this anxiety avoid making eye contact, lower their voice in both tone and volume, and pause

excessively (Levitan et al., 2012; Wortwein et al., 2015).

A multitude of treatments have been examined to ease or eliminate communication

apprehension in both the clinical and educational setting. Clinical research suggests the use of

medication to alleviate anxiety (Fitch et al., 2011) and cognitive behavioral therapy (Hindo &

Gonzalez-Prendes, 2011). Additionally, specialized Internet-based treatments have proven

marginally effective (Sun, 2012). However, such clinical treatments are not practical in

traditional classroom environments. Educational research has utilized technology-based

practice, like voice blogs (Rattine-Flaherty, 2014), but the most success has been found in

adapting cognitive behavioral therapy, also known as exposure therapy, for instructional uses

(DiBartolo & Molinna, 2010; Wallach et al., 2011). Despite some success with college-aged

samples, research is still needed to understand communication apprehension and the impact of

desensitization in reducing communication apprehension in high school students (Finn et al.,

2009; Marinho et al., 2016). Newly-adopted national standards of communication make this study timely and relevant, as students are now required to communicate effectively both in group settings as well as in oral presentation situations. The present study will attempt to add to the existing body of literature regarding communication apprehension and the use of peer practice as a possible treatment.

This chapter documents the theoretical framework, empirical evidence, and existing research to support the research of communication apprehension among high school students. The following chapter will detail the methods used in this study.

CHAPTER THREE: METHODS

Overview

The purpose of this chapter is to explain the research design of this study. The research questions and null hypotheses will be revisited, and an explanation for the participants and setting to be utilized during the study will be explained. The chosen instrument, the Personal Report of Communication Apprehension-24 (McCroskey, 1982b), will be analyzed in depth to determine its reliability and validity. Step-by-step procedures for conducting the study will also be described. Finally, this chapter will include a description and explanation of the statistical analysis procedures to be used.

Design

This study utilized a quantitative, quasi-experimental, static-group comparison design to evaluate the impact of peer practice on communication apprehension, public speaking anxiety, group discussion, meeting, and interpersonal communication in high school students. A quantitative, quasi-experimental design was appropriate as this was an "experiment that lacks random assignment" (Gall, Gall, & Borg, 2007, p. 416). Because this study examines personal feelings of anxiety and apprehension, a pre-test post-test design would be subject to test sensitization; therefore, a static-group comparison design, utilizing a control and treatment group with one post-test, is appropriate (Gall et al., 2007). The control group received no treatment, and the treatment group received the treatment of peer practice. For the purpose of this study, peer practice acts as a form of exposure therapy. Peer practice is defined as a method of gradual desensitization in which students practice and examine their own and classmates' reactions, analysis, and mastery of content and skills (Crouch & Mazur, 2001; Whitworth & Cochran, 1996). The independent variable was peer practice. There were five dependent variables: public

speaking anxiety, group discussion, meeting, interpersonal communication, and overall communication apprehension score. Overall communication apprehension was measured by the total PRCA-24 instrument, while public speaking anxiety, group discussion, meeting, and interpersonal communication apprehension was measured by corresponding subscales of the PRCA-24. McCroskey (1976, 1977, 1984) defined communication apprehension as an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons. Public speaking anxiety is defined as "a situation-specific social anxiety that arises from the real or anticipated enactment of an oral presentation" (Bodie, 2010, p. 72). Group discussion apprehension can be defined as a dislike of participation in group discussions resulting in nervousness and tenseness during such situations. Additionally, meeting apprehension can be defined as nervousness or anxiety experienced during interactions with one or more persons, while interpersonal communication apprehension can be defined as apprehension experienced during any form of communication with another person.

Research Questions

RQ1: Is there a difference between the level of communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ2: Is there a difference between the level of public speaking anxiety of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ3: Is there a difference between the level of group discussion apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ4: Is there a difference between the level of meeting apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ5: Is there a difference between the level of interpersonal communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

Null Hypotheses

H$_0$1: There is no significant difference between the level of communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice.

H$_0$2: There is no significant difference between the level of public speaking anxiety of high school students who participate in peer practice and high school students who do not participate in peer practice.

H$_0$3: There is no significant difference between the level of group discussion apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice.

H$_0$4: There is no significant difference between the level of meeting apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice.

H$_0$5: There is no significant difference between the level of interpersonal communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice.

Participants and Setting

The target population of this study was high school students 14 to 18 years of age. These were students enrolled in ninth through 12th grades in a high school in the southeastern part of the United States. The setting for the study was a rural high school in South Carolina with a total enrollment of 2,024 students, of which 58% were Caucasian, 34% African American, 8% Hispanic, 1% Asian, and 1% mixed races. Sixty-nine percent of students in this school qualify for free or reduced lunch. Convenience sampling was used because "the researcher selected a sample that suited the purpose of the study and that was convenient" (Gall et al., 2007, p. 175). Approval was granted by the school and district administration to train and utilize English teachers' classes for this study. The study was introduced to the sample via an assumed consent letter. Consent was assumed, therefore the only students opting out of the study were those who return the letter with a parent signature. Students were given details of the study by their teachers and were then asked to return the letter if they wished not to participate in the study. Students who returned the form were not included in the sample population.

The sample consisted of 275 students enrolled in English classes between grades nine through 12 at a large, rural high school in South Carolina. Participants ranged from 14 to 18 years of age ($M = 15.64$). This sample represented a wide range of demographics, ability levels, and grade levels. For this study the number of participants sampled was 275 students, which, according to Gall et al. (2007, p. 145) exceeded the required minimum of 144 participants for a MANOVA for a medium effect size with a statistical power of .7 at the .05 alpha level. The sample consisted of 124 males and 151 females. Seventy four participants were enrolled in ninth grade, 103 participants were enrolled in 10th grade, 66 participants were enrolled in 11th grade, and 32 participants were enrolled in 12th grade. Table 1 further describes the specific

demographic information for the sample population, including age, gender, grade level, and ethnicity.

Table 1

Participants: Total Sample (N=275)

		n	%
Age	14	37	13.5
	15	106	38.5
	16	69	25.1
	17	45	16.4
	18	18	6.5
Gender	Female	151	54.9
	Male	124	45.1
Ethnicity	Caucasian	127	46.2
	African American	108	39.3
	Hispanic	20	7.3
	Asian	6	2.2
	Other	14	5.1
Grade	9th	74	26.9
	10th	103	37.5
	11th	66	24.0
	12th	32	11.6

Participating teachers' classrooms were randomly assigned to either the control or treatment group. The participants in the control group took the PRCA-24 but did not receive the treatment outlined later in this chapter. The sample size of the control group was 140 participants, while the sample size of the treatment group was 135 participants. The control group consisted of 61 males and 79 females. Six participants were enrolled in ninth grade, 85 participants were enrolled in 10th grade, 35 participants were enrolled in 11th grade, and 14 participants were enrolled in 12th grade. The treatment group consisted of 63 males and 72 females. Sixty-eight participants were enrolled in ninth grade, 18 participants were enrolled in

10th grade, 31 participants were enrolled in 11th grade, and 18 participants were enrolled in 12th grade. Table 2 details complete demographic information for each group: control and treatment.

Table 2

Participants by Group

		Control Group (N=140)		Treatment Group (N=135)	
		n	%	*n*	%
Age	14	1	0.7	36	26.7
	15	66	47.1	40	29.6
	16	41	29.3	28	20.7
	17	21	15.0	24	17.8
	18	11	7.9	7	5.2
Gender	Female	61	56.4	72	53.3
	Male	79	43.6	63	46.7
Ethnicity	Caucasian	63	45.0	64	47.4
	African American	62	44.3	46	34.1
	Hispanic	10	7.1	10	7.4
	Asian	1	0.7	5	3.7
	Other	4	2.9	10	7.4
Grade Level	9th	6	4.3	68	50.4
	10th	85	60.7	18	13.3
	11th	35	25.0	31	23.0
	12th	14	10.0	18	13.3

The setting for this study was a large public high school in South Carolina containing grades nine through 12. A high school setting was appropriate based on the call for research in communication anxiety in populations outside of the college setting (Marinho et al., 2016). The treatment setting consisted of individual English classes. This setting was appropriate for treatment because the English curriculum in the district requires students in each grade level of English to give at least two oral presentations over the course of the school year. Participants were naturally grouped by grade level into English classes based on the course requirements set

by the high school and district administration.

Instrumentation

The Personal Report of Communication Apprehension-24 (PRCA-24) (McCroskey, 1982b) was utilized for this study (see Appendix A for instrument). The purpose of this instrument is to measure overall levels of communication apprehension; additionally, the subscales of this instrument measure levels of public speaking anxiety, group discussion, meeting, and interpersonal communication apprehension. This scale was developed by James McCroskey to measure overall communication apprehension. In addition, the scale provides four subscale measures of apprehension in various communication situations: group discussion, meeting, interpersonal conversations, and public speaking anxiety. This study utilized the overall communication apprehension score, as well as the score on each of the subscales.

McCroskey created this instrument in 1982 as a more reliable method of reporting communication apprehension than previous versions of the measure, which aimed to provide a reliable measurement of individuals' levels of apprehension during varying communication situations, as well as overall levels of state communication apprehension. The instrument has been used in numerous studies (Dwyer & Davidson, 2012; Shi et al., 2015; Smith & Frymier, 2006; Taylor, 2011), each of which measured the effect of some form of treatment for communication apprehension, just as is the aim of this study. Factor analysis, based on data from over 40,000 college students and 3,000 non-student adults, indicate the instrument is unidimensional and internally consistent and valid (McCroskey, 1982b). The mean score on the PRCA-24 is 65.60 with a standard deviation of 15.30 and a Cronbach's alpha of .97. The PRCA-24 consists of four subscales: group discussion, interpersonal, meetings, and public speaking anxiety. For the purposes of this study, the overall communication apprehension scale

as a whole as well as four individual subscales were analyzed. The public speaking anxiety

subscale mean is 19.3 with a standard deviation of 5.1; the group discussion subscale mean is

15.4 with a standard deviation of 4.8; the meeting subscale mean is 16.4 with a standard

deviation of 4.2; and the interpersonal subscale mean is 14.2 with a standard deviation of 3.9

(McCroskey, 1982b). The PRCA-24 is internally consistent. According to McCroskey (1982b),

"The PRCA-24 is highly reliable with a Cronbach's Alpha regularly >.90 and has very high

predictive validity" (p. 142).

The PRCA-24 (McCroskey, 1982b) consists of 24 items rated on a five-point Likert scale

that ranged from strongly disagree to strongly agree. Responses are as follows: Strongly

Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5. The PRCA-24 consists

of four subscales containing six items each. The combined possible score on the PRCA-24

(McCroskey, 1982b) ranges from 24 to 120 points. Scores below 51 represent people who have

very low communication apprehension. Scores between 51-80 represent people with average

communication apprehension. Scores above 80 represent people who have high levels of trait

communication apprehension.

Participants were instructed to indicate the degree to which each statement applies to

them by marking their level of agreement from strongly disagree to strongly agree. This

instrument was transferred to electronic format to be completed by participants via Survey

Monkey. Completion of this instrument takes approximately 10-15 minutes. Survey Monkey

provides raw data from the PRCA-24, which is then scored based on the PRCA-24 scoring

guide. Permission to use this instrument is not necessary as the creator, McCroskey (1982b),

stated:

This measure has been developed by researchers who are, or were at one time, faculty

members or graduate students at West Virginia University. They were developed for use

by researchers and may be used for research or instructional purposes with no

individualized permission. There is no cost for this use. Please cite the source noted at

the bottom of the measure when publishing articles based on research using this

instrument. (p. 138)

Procedures

Approval from the Institutional Review Board (IRB) at Liberty University was secured

prior to data collection (see Appendix B for IRB approval). Approval was also obtained from

school and district officials where the study was conducted (see Appendix C for documentation).

Participants for the study were elicited via assumed consent/assent letters. Participants were

instructed to return the signed consent and assent forms to their English teacher if they wished

not to participate in the study (see Appendix D for participant assent form and parent consent

form).

English teachers whose classes were utilized as part of the treatment group were trained

during a professional development session in order to provide appropriate preparation for

implementation of the treatment, peer practice. All participating English teachers, whether in the

treatment or control group, were trained to administer the post-test survey. After training, data

collection began, utilizing the following procedural steps.

First, teachers in both the control and treatment groups introduced a topic on which

students were required to give a formal presentation to the class. Students were provided with a

rubric by which the presentation would be evaluated. Next, peer practice protocol was

implemented to the treatment group, while the control group did not participate in peer practice.

Peer practice protocol required two separate practice sessions in the classroom environment.

Each peer practice session took place within the classroom with the teacher monitoring student practice.

"Practice" is defined as completely presenting, from beginning to end, the information the student plans to present in his or her formal presentation to the entire class out loud to his or her partner or partners. Three days prior to student presentations, each student practiced his or her complete presentation with one partner. Partners gave one another feedback and constructive criticism via the "Peer Practice Feedback" form provided in Appendix E. One day prior to student presentations, each student practiced his or her complete presentation in groups of four to five students. Groups gave one another feedback and constructive criticism via the "Peer Practice Feedback" form provided in Appendix E.

Next, participants in the treatment and control groups presented the previously assigned formal presentation to his or her class. Finally, participants in both the treatment and control groups completed the post-test survey, the PRCA-24 (McCroskey, 1982b), via Survey Monkey, an online survey tool. Data from the post-test was retrieved from Survey Monkey and stored in a secure location until the end of the study, at which time it will be destroyed. Data was then analyzed using appropriate statistical analysis described below.

Data Analysis

Descriptive statistics were reported for means, standard deviation, and demographic data for the overall PRCA-24 as well as each subscale. Additionally, each of the following were reported: number (N), number per cell (n), degrees of freedom, observed F value (F), significance level (p), and effect size and power. Two separate statistical tests were utilized for data analysis: a multiple analysis of variance and an individual samples t-test. A multiple analysis of variance (MANOVA) was utilized to analyze the data from each subscale: group

discussion, interpersonal, meeting, and public speaking. A MANOVA was appropriate for the

subscales because this type of data analysis will determine whether the two groups, treatment

and control, differ on any of the subscales of the PRCA-24 (Gall et al., 2007). The first step in

MANOVA data analysis was to test the assumption of the equality of group dispersions. Next,

the statistical significance of the difference between group centroids, the mean of vector scores

for all participants in each group, was tested using Pillai's trace (Gall et al., 2007). The alpha

level is .05. Cohen's *d* was used to report effect size.

An individual samples *t*-test was used to analyze the total PRCA-24 scores from each

group. Because an individual samples *t*-test measures the difference between two groups, a *t*-test

was appropriate to determine whether there was a statistically significant difference between

treatment and control group levels of total communication apprehension (Gall et al., 2007). T-

test data analysis began by checking for outliers, normal distribution of independent variables,

and homogeneity of variances. The alpha level was .05. Cohen's *d* was used to report effect

size.

This chapter detailed the methodology used in this study. The next chapter, Chapter

Four, will describe the findings of this study.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this chapter is to report the findings of this research study. The research questions and null hypotheses will be restated, followed by a detailed report of descriptive statistics for the data collected during the study. Finally, results of all data analysis will be discussed in detail.

Research Questions

The research questions for this study were:

RQ1: Is there a difference between the level of communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ2: Is there a difference between the level of public speaking anxiety of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ3: Is there a difference between the level of group discussion apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ4: Is there a difference between the level of meeting apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ5: Is there a difference between the level of interpersonal communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

Null Hypotheses

The null hypotheses for this study are:

H$_0$1: There is no significant difference between the level of communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice.

H$_0$2: There is no significant difference between the level of public speaking anxiety of high school students who participate in peer practice and high school students who do not participate in peer practice.

H$_0$3: There is no significant difference between the level of group discussion apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice.

H$_0$4: There is no significant difference between the level of meeting apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice.

H$_0$5: There is no significant difference between the level of interpersonal communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice.

Descriptive Statistics

The independent variable for this study was grouping; participants were placed in either the control or treatment group. Participants were grouped randomly by English class, and each class was randomly selected as a treatment group, participating in peer practice, or a control group, not participating in peer practice. There were five dependent variables for this study, overall communication apprehension, as measured by the total PRCA-24 score, and scores of

each subscale: group discussion, interpersonal, meeting, and public speaking. See Table 3 for

descriptive statistics for each group in the independent variable.

Table 3

Grouping: Control and Treatment

		N	M	SD
Control Group	Total PRCA-24	140	73.89	15.17
	Group Discussion Subscale	140	16.96	4.36
	Meeting Subscale	140	18.65	4.30
	Interpersonal Subscale	140	18.21	3.97
	Public Speaking Subscale	140	20.09	4.50
Treatment Group	Total PRCA-24	135	67.37	11.38
	Group Discussion Subscale	135	16.47	3.95
	Meeting Subscale	135	18.12	4.17
	Interpersonal Subscale	135	17.21	4.41
	Public Speaking Subscale	135	20.19	4.35

Results

The following section includes a detailed discussion of the data screening processes,

results from all null hypotheses, and each data analysis technique.

Null Hypothesis One

The first null hypothesis stated, "There is no significant difference between the level of

communication apprehension of high school students who participate in peer practice and high

school students who do not participate in peer practice." An independent-samples t-test was run

to determine if there were differences in levels of total communication apprehension as measured

by the total PRCA-24 assessment between students who participated in peer practice and those

who did not. An independent samples t-test was used to specifically analyze the total PRCA-24

scores because the total score is derived from a scoring formula rather than simply adding the

subscale raw scores. As a result, PRAC-24 total scores were analyzed separately and not included in the statistical analysis with the subscales, which are reported later in this chapter.

Data screening was conducted for control and treatment groups. According to Warner (2013), data screening for an independent samples t-test should include screening for significant outliers, normality, and homogeneity of variances. There were no univariate outliers in the data, as assessed by inspection of a boxplot (Warner, 2013). There were no multivariate outliers in the data. Data was also screened for normal distribution by examining Normal Q-Q Plots (Warner, 2013). Box's test for equality of covariance matrices was used to determine homogeneity of variance-covariance matrices (Warner, 2013).

There were 135 participants in the treatment group and 140 participants in the control group. A Welch t-test was run to determine if there were differences in PRCA-24 total scores between treatment and control groups due to the assumption of homogeneity of variances being violated, as assessed by Levene's test for equality of variances ($p = .000198$). There were no outliers in the data, as assessed by inspection of a boxplot. PRCA-24 total scores for the treatment group were normally distributed, as assessed by Shapiro-Wilk's test ($p = .084$); however, PRCA-24 total scores for the control group were not normally distributed based on Shapiro-Wilk's test ($p = .030$). This can be attributed to the fact that sample sizes for this study were greater than 50 participants (treatment $n = 135$, control $n = 140$), and the Shapiro-Wilk's test is especially sensitive to even minor deviations in normality. Examination of Normal Q-Q plots for both groups indicate that scores for each were approximately normally distributed (Warner, 2013). Figure 1 depicts the Normal Q-Q plot for the treatment group, and Figure 2 depicts the Normal Q-Q plot for the control group.
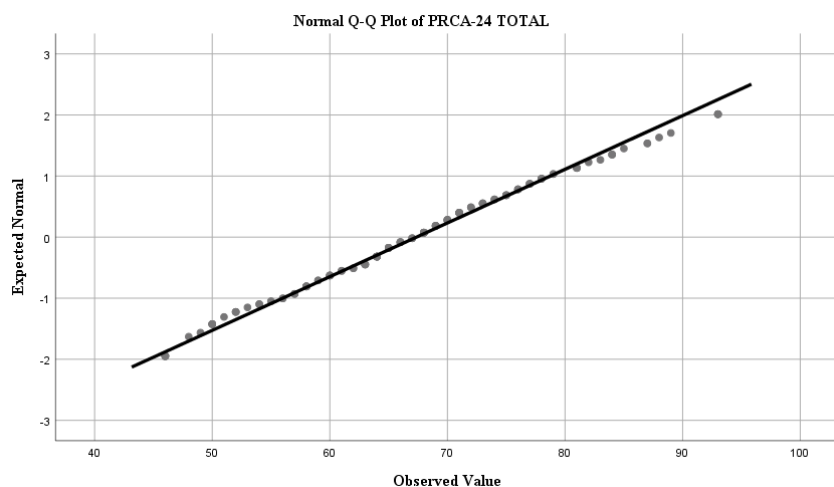
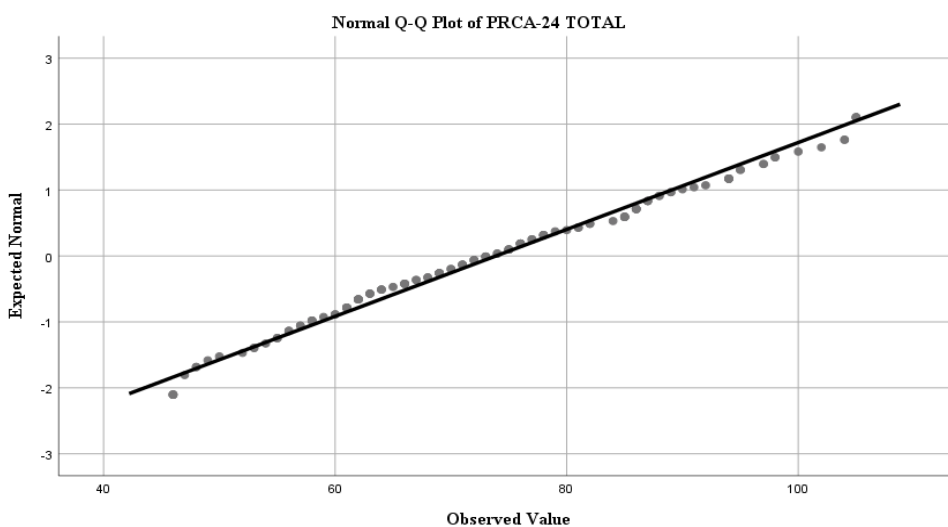*Figure 1*. Normal Q-Q Plot of PRCA-24 for the treatment group.

Figure 2. Normal Q-Q Plot of PRCA-24 for the control group.

Total communication apprehension as measured by the PRCA-24 total was higher for the control group ($M = 73.89$, $SD = 15.172$) than the treatment group ($M = 67.37$, $SD = 11.376$), a statistically significant difference, $M = 6.515$, 95% CI [3.338 to 9.692], $t(257.526) = 4.038$, $p = .000076$. There was a statistically significant difference between mean level of communication apprehension ($p < .05$) between those who participated in peer practice and those who did not, and therefore, the null hypothesis can be rejected.

Null Hypotheses Two through Five

In addition to examining the effect of peer practice on overall communication apprehension (PRAC-24 total), this study was also interested in the impact of peer practice on each of the subscales of the PRCA-24. A multivariate analysis of variance was used to determine whether there were any differences between the treatment (peer practice) and control (no peer practice) groups on any of the dependent variable subscales, which were group discussion, meeting, interpersonal, and public speaking. Participants were in either a control group receiving no peer practice or a treatment group receiving peer practice. The four remaining null hypotheses consider the impact of peer practice on each of the individual subscales:

$H_0$2: There is no significant difference between the level of public speaking anxiety of high school students who participate in peer practice and high school students who do not participate in peer practice.

$H_0$3: There is no significant difference between the level of group discussion apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice.

$H_0$4: There is no significant difference between the level of meeting apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice.

$H_0$5: There is no significant difference between the level of interpersonal communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice.

Data screening was conducted for the control and treatment groups. According to Warner (2013), multivariate data for quantitative variables should be screened for univariate and multivariate outliers, multicollinearity, normality, linearity, and homogeneity of variances. Normal Q-Q Plots were analyzed to determine normality. Boxplots were used to assess univariate outliers, while Mahalanobis distance was examined to screen for multivariate outliers. Scatterplots were used to determine linearity, and homogeneity of variances was assessed by Box's test for equality of covariance matrices.

Preliminary assumption testing revealed that treatment and control group scores for group discussion, meeting, public speaking, and interpersonal subscales were not normally distributed, as assessed by Shapiro Wilk's test ($p < .05$). This violation can be explained by the large sample sizes (treatment $n = 135$, control $n = 140$); the Shapiro Wilk's test is very sensitive to even small deviations from normality. As a result of the large sample sizes of this study, Normal Q-Q Plots were analyzed for each subscale for both control and treatment groups. Scores for each subscale were approximately normally distributed for control and treatment groups, as assessed by inspection of Normal Q-Q Plots. There were no univariate outliers in the data, as assessed by inspection of a boxplot (see Figure 3).
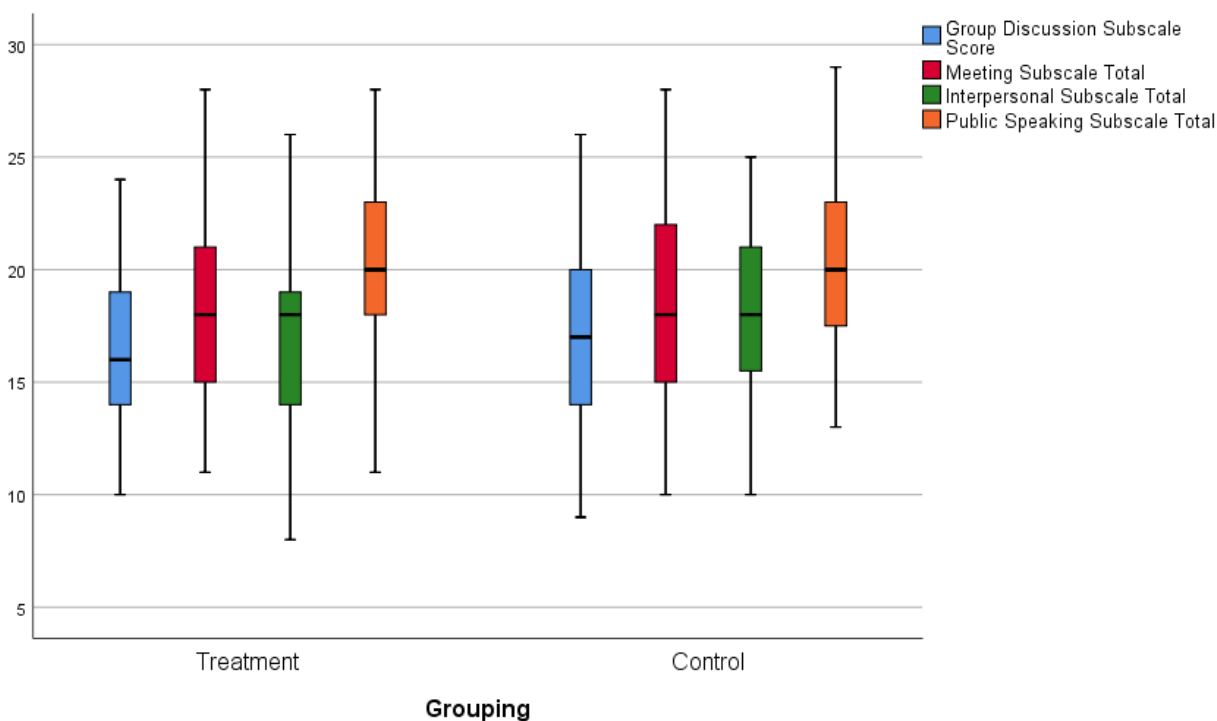
Figure 3. Outliers in subscales: control and treatment groups.

There were no multivariate outliers in the data, as assessed by Mahalanobis distance ($p > .001$).

There were positive linear relationships across all dependent variables of group discussion,

meeting, interpersonal, and public speaking, as assessed by scatterplot (Warner, 2013). There

was homogeneity of variance-covariance matrices, as assessed by Box's test of equality of

covariance matrices ($p = .270$).

Table 4 details the specific MANOVA results for group discussion, meeting, public

speaking, and interpersonal subscales.

Table 4

Results by Subscale

Dependent Variable	Grouping	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Group Discussion	Treatment	16.474	.358	15.769	17.180
Subscale Score	Control	16.964	.352	16.272	17.657
Meeting Subscale Total	Treatment	18.119	.365	17.400	18.837
	Control	18.650	.358	17.945	19.355
Interpersonal Subscale	Treatment	17.215	.361	16.505	17.925
Total	Control	18.214	.354	17.517	18.912
Public Speaking	Treatment	20.185	.381	19.435	20.935
Subscale Total	Control	20.093	.374	19.356	20.829

Participants in the treatment group had higher scores in the public speaking subscale (M = 20.19, SD = 4.352) than the control group (M = 20.09, SD = 4.496), indicating higher levels of apprehension for individuals who participated in peer practice. As a result, null hypothesis two failed to be rejected. Participants who did not participate in peer practice, the control group, had higher apprehension scores in the group discussion subscale (M = 16.96, SD = 4.360), the meeting subscale (M = 18.65, SD = 4.303), and the interpersonal subscale (M = 18.21, SD = 3.967) than the treatment group (M = 16.47, SD = 3.949; M = 18.12, SD = 4.170; M = 17.21, SD = 4.412). This indicates that participants who used peer practice had lower group discussion, meeting, and interpersonal apprehension than those in the control group; however, these differences were not statistically significant. Therefore, null hypotheses three, four, and five failed to be rejected. The difference between the subscale scores on the combined dependent

variables were not statistically significant, $F(4,270) = 1.894$, $p = .112$; Wilks' $\Lambda = .973$; partial η^2 = .027.

CHAPTER FIVE: CONCLUSIONS

Overview

This section includes an in-depth discussion of the study and related results from statistical analysis testing. This section also includes a discussion of implications of the study in light of previous related research. Finally, possible limitation of the study will be identified, and recommendations for further research will be addressed.

Discussion

The purpose of this quantitative, quasi-experimental study was to examine the impact of peer practice on communication apprehension, public speaking anxiety, group discussion, meeting, and interpersonal communication among high school students at a large public high school in South Carolina. The study was driven by five research questions:

RQ1: Is there a difference between the level of communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ2: Is there a difference between the level of public speaking anxiety of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ3: Is there a difference between the level of group discussion apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ4: Is there a difference between the level of meeting apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

RQ5: Is there a difference between the level of interpersonal communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice?

Null Hypothesis One

The first null hypotheses stated, "There is no significant difference between the level of communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice." An individual sample t-test was used to analyze the difference in levels of communication apprehension between participants in the treatment group who participated in peer practice and the control group who did not. The first null hypothesis was rejected because a significant difference in communication apprehension existed between the treatment and control groups.

This study was the first to examine peer practice as a form of exposure therapy used in the general education, high school setting to reduce communication apprehension using the Personal Report of Communication Apprehension-24 (McCroskey, 1982b). Despite a number of studies examining various cognitive-behavioral, virtual reality, or medicinal treatments for communication apprehension, one of the biggest issues for educators is the availability of "a means of treating speech anxious students within the confines of a normal classroom routine" (Ayres & Hopf, 1985). The results found in this study are congruent with similar studies that examine early exposure to a speaking task as a means of reducing anxiety in college students. Smith & Frymier (2006) found that practicing prior to public speaking increased student performance during public speaking, while Seim et al. (2011) found that a series of brief exposures prior to public speaking tasks reduced feelings of anxiety.

The task of peer practice, which was utilized in this study, is rooted in the framework of exposure therapy or the idea that exposure and preparation can help ease feelings of anxiety caused during stress-inducing communication scenarios. During a qualitative study of students with high oral communication apprehension identified using the PRCA-24, Shanahan (2015) documented that students with high CA reported that preparation and exposure through practice helped alleviate feelings of CA and increased student performance during formal CA scenarios, such as public speaking in front of a large audience. These qualitative findings are supported by the quantitative data collected in this study.

In addition to exposure therapy, the theoretical framework that helped support this study was Vygotsky's (1978) sociocultural learning theory. Sociocultural learning theory asserts that learning is best undertaken when considered in the context of learning from experiences and interactions with others (McInerney et al., 2011; Sanders & Welk, 2005). Participants who engaged in peer practice had the opportunity not only to practice prior to evaluative communication scenarios but also were given the opportunity to interact with peers during this practice, receive feedback, and witness peer practice presentations. The combination of each of these elements helps students not only consider their own communication techniques in light of the feedback about their specific skills but also allows students to witness the communication skills of their peers, both effective and ineffective, and learn from these skills. This learning experience is a cornerstone of the zone of proximal development, a key component of sociocultural learning theory.

Null Hypothesis Two

The second null hypothesis stated, "There is no significant difference between the level of public speaking anxiety of high school students who participate in peer practice and high

school students who do not participate in peer practice." A multiple analysis of variance was used to determine the effect of peer practice on each subscale of the Personal Report of Communication Apprehension-24. Null hypothesis two focused on the public speaking subscale of the PRCA-24. Though participants in the treatment group had slightly higher levels of public speaking apprehension than participants in the control group, the second null hypothesis failed to be rejected because no statistically significant difference was found between participants in the treatment and control groups.

The public speaking subscale routinely has higher apprehension rates than any of the other subscales of the PRCA-24. Additionally, public speaking has routinely been reported as one of the most anxiety-inducing scenarios across disciplines (Dwyer & Davidson, 2012; Furukawa et al., 2014). Despite the strong validity and reliability of the PRCA-24 (McCroskey, Beatty, Kearney, & Plax, 1985), the public speaking subscale is often reported as having higher anxiety averages than any of the other subscales (McCroskey & Beatty, 1984). This result could be understood when considering the present study's focus on communication apprehension as a whole. Peer practice was the only utilized exposure therapy, and while a public speaking task was used as the formal, evaluative communication task, the peer practice may have impacted other subscales of communication apprehension more strongly than the public speaking subscale.

Null Hypotheses Three through Five

The third null hypothesis stated, **"There is no significant difference between the level of group discussion apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice."** A multiple analysis of variance was used to determine the effect of peer practice on each subscale of the Personal Report of Communication Apprehension-24. Null hypothesis three focused on the group discussion

subscale of the PRCA-24. Despite the fact that MANOVA results indicated that participants who did not receive peer practice, those in the control group, had higher levels of group discussion apprehension than those in the treatment group, null hypothesis three failed to be rejected because this difference was not statistically significant.

The fourth null hypothesis stated, **"**There is no significant difference between the level of meeting apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice." A multiple analysis of variance was used to determine the effect of peer practice on each subscale of the Personal Report of Communication Apprehension-24. Null hypothesis four focused on the meeting subscale of the PRCA-24. Though meeting apprehension scores were lower for those individuals who participated in peer practice, null hypotheses four failed to be rejected because these differences were not statistically significant.

The fifth null hypothesis stated, **"**There is no significant difference between the level of interpersonal communication apprehension of high school students who participate in peer practice and high school students who do not participate in peer practice." A multiple analysis of variance was used to determine the effect of peer practice on each subscale of the Personal Report of Communication Apprehension-24. Null hypothesis five focused on the interpersonal subscale of the PRCA-24. As reported with each of the previous subscales, null hypothesis five failed to be rejected. Despite lower average interpersonal apprehension scores for participants in the treatment group, results were not statistically significant.

The results of null hypotheses two and three seem to contradict the theoretical framework of Vygotsky (1978) and exposure therapy. During peer practice, participants in the treatment group would have had exposure in public speaking situations, which should, in light of exposure

therapy theory, help reduce public speaking apprehension (Friedrich & Goss, 1984); however, results of this study contradicted previous findings. Little research exists on the other contexts represented by the remaining subscales of the PRCA-24, meeting, group discussion, and interpersonal communication apprehension, but exposure therapy theory, as well as the theoretical framework of zone of proximal development as part of sociocultural learning theory (Vygotsky, 1978) would suggest that similar results should be found in other anxiety-inducing contexts.

As was discussed with null hypothesis two, the focus on overall communication apprehension may have impacted the efficacy of reducing apprehension for each of the specific subscales. These findings are in line with other reported results of studies utilizing the PRCA-24. King, Anderson, and Carlson (1988) reported that the context (group discussion, meeting, public speaking, and interpersonal) is only empirically irrelevant for individuals with low overall communication apprehension. Medium and high-apprehension scores often depend strongly on communication context effect. However, other findings suggest CA scores have little to do with specific communication context (McCroskey et al., 1985; Levine & McCroskey, 1990).

Implications

This study showed that peer practice was statistically significant in reducing overall communication apprehension in high school students. Students who did not utilize peer practice had higher overall levels of communication apprehension. However, peer practice was not statistically significant in reducing apprehension in specific contexts of public speaking, group discussion, meeting, and interpersonal communication.

Most research in the area of communication apprehension focuses on college-age populations rather than the population of 14- to 18-year-old students utilized in this study;

therefore, this study helped further close the gap of extending CA treatment research to other populations. As a result, giving educators research about the prevalence and treatment of CA in adolescents can help reduce the need for college-level remediation. In addition, early identification of extreme cases of CA could lead to better and more effective treatments. The earlier the symptoms of CA are identified and treatment administered, the more effective it can be.

The vast majority of existing treatment literature for communication apprehension relies heavily on clinical settings, medical treatments, or cognitive-behavioral therapies. These treatments, while useful for extreme cases of CA, are impractical for classroom use. This study focused on one possible treatment, peer practice, which could be easily implemented in a general education environment to reduce CA. Teachers, no matter the subject area, grade level, or training or experience level could implement the peer practice protocol with relative ease and little modification to existing curricula or lesson plans. This makes peer practice a more practical approach to treating CA within a regular education classroom.

The ability to communicate effectively with others is a cornerstone of society, and for students, could determine future success in college and career readiness. Regardless of an individual's particular level of CA, every student can benefit from learning techniques to reduce CA. The average student does not qualify as an "extreme case," and thus needs less intensive methods of dealing with CA. While high to extreme CA is the focus of most CA research, even average to moderate CA can impact student performance and attitudes toward communication scenarios in the classroom, and can negatively impact grades, performance, and comfort with communicating with others. Because this study focused on reducing CA for all student and not just those with high CA, educators can see the benefits of peer practice for all students.

Though overall communication apprehension was statistically significantly impacted by peer practice, these results do not extend to the specific, individualized contexts of the subscales of the PRCA-24. It is important not to over-generalize the results of this single study. Peer practice was effective in this instance in reducing overall communication apprehension, but results for specific subscales provide contradictory evidence in the case of public speaking, and non-statistically significant results in the cases of group discussion, meeting, and interpersonal communication. As a result, much more research is needed, and educators and researchers should not make any assumptions based on the data of this single study.

Limitations

The setting, sampling, and timeframe of this study were limiting. This study was conducted at one public high school over the course of a few weeks. A more robust study of multiple schools, ideally in multiple geographical areas, could return much more generalizable results. In addition, this study only examined the impact of peer practice in one situation when used in the treatment classrooms. Wider, more long-term use of peer practice is needed to determine longevity and impact on a larger scale.

Another limitation of this study was the sampling used. Convenience sampling was used for this study; however, convenience samples do not lend themselves well to inferential statistics (Warner, 2013). A true random sampling would have produced the best, most robust results, but was not possible in this particular situation. The sample sizes also would ideally be equal when running the multiple analysis of variance to obtain more robust results.

Another limitation of the study was the self-report nature of the data collected from the Personal Report of Communication Apprehension -24. Each participant took the PRCA-24 in a classroom setting with supervised by their English teacher. The nature of self-report data is that

the individual participant reports on his or her own personal experiences and/or feelings. Because of this, participants can be dishonest and results can impact the data. To counter this possibility, participants were asked for complete honesty and were assured protection of personal privacy. No personally identifying information, such as name or student identification number, was taken from students. All participants were given the same recruitment materials. Parents were given informed consent letters, which are frequently used within the school district where the study took place. Parents only had to return letters if they did not wish their student to participate in the study. Additionally, each individual student signed assent letters prior to taking the survey to ensure that they were fully aware that participation in the study was voluntary. Both the informed consent and student assent letters can be found in Appendix D.

Recommendations for Future Research

There are many recommendations for future research based on the results of the present study. Future studies that examine demographic differences in CA would add to the body of research-based knowledge about CA for educators and researchers. This information could provide more insight into the ways in which CA presents itself among varying ages, populations, demographics, and socio-economic backgrounds. Additionally, extending the study beyond the one communication scenario presented in this study could provide further insight into the longevity of peer practice as a method of alleviating CA.

Based on the results of this study, it could be beneficial for future research to repeat this study utilizing a different measurement of CA. While the PRCA-24 is widely respected and had been utilized in hundreds of research studies examining CA, utilizing a different measure of CA could provide further evidence to the efficacy of peer practice. Additionally, future research utilizing the PRCA-24 may benefit from a study designed to utilize peer practice in each specific

context measured by the subscales of the PRCA-24. The nature of the PRCA-24 is that the total instrument measures total communication apprehension, which is made up of individual subscale scores. Each subscale focuses on a different communication context: group discussion, meeting, public speaking, and interpersonal. The results of this study found significant results from the total PRCA-24 measure of CA, but non-significant results for the subscales. Though this study did not find significant results of peer practice on any of the specific subscales, the design of this study was such that specific protocols for each subscale were not present. This study examined the subscales to analyze possible impacts of peer practice on the subscales, but the overarching purpose was to determine whether or not peer practice impact communication apprehension in general. Including protocol within the peer practice protocol to purposefully target meetings, group discussion, public speaking, and interpersonal communication may yield important results.

As this study is one of the few to consider CA and related treatments among high school populations, further research should continue to focus on the high school population. Early intervention is routinely touted as a key in addressing learning issues, and the same can be said of communication apprehension; early acknowledgement of the issue and treatment can possibly reduce CA and make communication easier for students as they move into college and beyond (Hunter et al., 2014; Kahl, 2014). Given the large amount of clinical research in treatments for extreme CA and very little research for general CA treatments, future research should continue to focus on practical methods to help educators empower students to deal with CA in the general education setting.

Communication apprehension affects a huge number of individuals of all ages. As they have access to students during their most important, formative years, educators have unique opportunity to influence students' earliest communication experiences. In order to do so,

teachers must have a practical, easy-to-implement toolkit of pedagogical strategies not only to teach students how to communicate but also teach them to deal with personal negative feelings toward communication situations. While the research provided in this study is a small glimpse into one possible strategy, it is a step in the right direction toward providing quality, research-based methods to teachers. Future additions to this area of research can serve to ensure that schools and teachers prepare students to communicate in a variety of situations and context without fear or apprehension so that each child feels strong and brave enough to share his or her voice, thoughts, and experiences with others.

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APPENDIX A

Personal Report of Communication Apprehension (PRCA-24)

The PRCA-24 is the instrument which is most widely used to measure communication apprehension. It is preferable above all earlier versions of the instrument (PRCA, PRCA10, PRCA-24B, etc.). It is highly reliable (alpha regularly >.90) and has very high predictive validity. It permits one to obtain sub-scores on the contexts of public speaking, dyadic interaction, small groups, and large groups. However, these scores are substantially less reliable than the total PRCA-24 scores-because of the reduced number of items. People interested only in public speaking anxiety should consider using the PRPSA rather than the public speaking sub-score drawn from the PRCA-24. It is much more reliable for this purpose.

This instrument is composed of twenty-four statements concerning feelings about communicating with others. Please indicate the degree to which each statement applies to you by marking whether you: Strongly Disagree = 1; Disagree = 2; are Neutral = 3; Agree = 4; Strongly Agree = 5

_____1. I dislike participating in group discussions.
_____2. Generally, I am comfortable while participating in group discussions.
_____3. I am tense and nervous while participating in group discussions.
_____4. I like to get involved in group discussions.
_____5. Engaging in a group discussion with new people makes me tense and nervous.
_____6. I am calm and relaxed while participating in group discussions.
_____7. Generally, I am nervous when I have to participate in a meeting.
_____8. Usually, I am comfortable when I have to participate in a meeting.
_____9. I am very calm and relaxed when I am called upon to express an opinion at a meeting.
_____10. I am afraid to express myself at meetings.
_____11. Communicating at meetings usually makes me uncomfortable.
_____12. I am very relaxed when answering questions at a meeting.
_____13. While participating in a conversation with a new acquaintance, I feel very nervous.
_____14. I have no fear of speaking up in conversations.
_____15. Ordinarily I am very tense and nervous in conversations.
_____16. Ordinarily I am very calm and relaxed in conversations.
_____17. While conversing with a new acquaintance, I feel very relaxed.
_____18. I'm afraid to speak up in conversations.
_____19. I have no fear of giving a speech.
_____20. Certain parts of my body feel very tense and rigid while giving a speech.
_____21. I feel relaxed while giving a speech.
_____22. My thoughts become confused and jumbled when I am giving a speech.
_____23. I face the prospect of giving a speech with confidence.
_____24. While giving a speech, I get so nervous I forget facts I really know.

SCORING:

Group discussion: 18 - (scores for items 2, 4, & 6) + (scores for items 1,3, & 5)
Meetings: 18 - (scores for items 8, 9, & 12) + (scores for items 7, 10, & 11)
Interpersonal: 18 - (scores for items 14, 16, & 17) + (scores for items 13, 15, & 18)
Public Speaking: 18 - (scores for items 19, 21, & 23) + (scores for items 20, 22, &24)
Group Discussion Score: _____
Interpersonal Score: _____
Meetings Score: _____
Public Speaking Score: _____
To obtain your total score for the PRCA, simply add your sub-scores together. _____
Scores can range from 24-120. Scores below 51 represent people who have very low CA.
Scores between 51-80 represent people with average CA. Scores above 80 represent people who have high levels of trait CA.
NORMS FOR THE PRCA-24: (based on over 40,000 college students; data from over 3,000 non-student adults in a national sample provided virtually identical norms, within 0.20 for all scores.)

	Mean	Standard Deviation	High	Low
Total Score	65.6	15.3	> 80	< 51
Group:	15.4	4.8	> 20	< 11
Meeting:	16.4	4.2	> 20	< 13
Dyad (Interpersonal):	14.2	3.9	> 18	< 11
Public:	19.3	5.1	> 24	< 14

Source:

McCroskey, J. C. (1982b). *An introduction to rhetorical commun*ication (4th Ed). Englewood Cliffs, NJ: Prentice-Hall.

APPENDIX B

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

August 4, 2017

Ashley Michelle Bowman
IRB Approval 2929.080417: The Effect of Peer Practice on Communication Apprehension in
High School Students

Dear Ashley Michelle Bowman,

We are pleased to inform you that your study has been approved by the Liberty University IRB.
This approval is extended to you for one year from the date provided above with your protocol
number. If data collection proceeds past one year, or if you make changes in the methodology as
it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms
for these cases were attached to your approval email.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
The Graduate School

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APPENDIX C

July 1, 2017

Dr. Quincie Moore
Superintendent
Cherokee County School District 1
141 Twin Lake Road
Gaffney, SC 29341

Dear Dr. Moore,

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctorate of Education. The title of my research project is "The Effect of Peer Practice on Communication Apprehension in High School Students," and the purpose of my research is to evaluate the use of peer practice activities as a possible means of reducing communication apprehension for high school students.

I am writing to request your permission to conduct my research in Cherokee County at Gaffney High School.

Participants will be asked to give oral presentations in their English class, participate in peer practice in preparation for the oral presentations, and complete the Personal Report of Communication Apprehension-24 via Survey Monkey after their final presentation. The data will be used to determine if peer practice has any impact on overall communication apprehension and related modes of communication. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time. This study will add to existing research and give teachers strategies to help make our students better communicators.

Thank you for considering my request. If you choose to grant permission, please respond by email to abowman37@liberty.edu.

Sincerely,

Ashley Bowman
Doctoral Candidate, Liberty University

July 1, 2017

Dr. Raashad Fitzpatrick
Principal
Gaffney High School
149 Twin Lake Road
Gaffney, SC 29341

Dear Dr. Fitzpatrick,

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctorate of Education. The title of my research project is "The Effect of Peer Practice on Communication Apprehension in High School Students," and the purpose of my research is to evaluate the use of peer practice activities as a possible means of reducing communication apprehension for high school students.

I am writing to request your permission to conduct my research at Gaffney High School.

Participants will be asked to give oral presentations in their English class, participate in peer practice in preparation for the oral presentations, and complete the Personal Report of Communication Apprehension-24 via Survey Monkey after their final presentation. The data will be used to determine if peer practice has any impact on overall communication apprehension and related modes of communication. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time. This study will add to existing research and give teachers strategies to help make our students better communicators.

Thank you for considering my request. If you choose to grant permission, please respond by email to abowman37@liberty.edu.

Sincerely,

Ashley Bowman
Doctoral Candidate, Liberty University

APPENDIX D

PARENT/GUARDIAN CONSENT FORM

The Effect of Peer Practice on Communication Apprehension in High School Students
Ashley Bowman
Liberty University
School of Education

Your child/student is invited to be in a research study to determine the effect of peer practice in reducing communication apprehension. He or she was selected as a possible participant because they are required to communicate in a variety of manners within their English class, and communication apprehension has been proven to be a problem among high school students. I ask that you read this form and ask any questions you may have before agreeing to allow him or her to be in the study.

Ashley Bowman, a doctoral candidate in the education department at Liberty University, is conducting this study.

Background Information: The purpose of this study is to determine the effect of peer practice in reducing communication apprehension among high school students.

Procedures: If you agree to allow your child/student to be in this study, I would ask him or her to do the following things:
1.) Participate in peer practice during English class in preparation for an oral presentation. During peer practice, your student will work with peers to practice oral presentation skills.
2.) Complete the Personal Report of Communication Apprehension-24 via online survey. This survey will evaluate the student's feelings in regards to communicating with others. This survey will be confidential, will be completed via Survey Monkey and should take no more than 25 minutes.

Risks and Benefits of being in the Study: The risks involved in this study are minimal, no more than you would encounter in everyday life. There are not direct benefits of participating in this study; however, your child may benefit from the skills learned to help prepare for communication situations in the future. This study will also help educators better understand how to treat communication apprehension within the classroom.
Compensation: Your child/student will receive no compensation or incentive for taking part in this study.

Confidentiality: The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records, including recordings of interviews, will be stored securely and only the researcher will have access to the records.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to allow your child/student to participate will not affect his or her current or future relations with Liberty University. If you decide to allow your child/student to participate, he or she is free to not answer any question or withdraw at any time without affecting those relationships.

How to Withdraw from the Study: If your child/student chooses to withdraw from the study, you or he/she should contact the researcher at the email address or phone number included in the next paragraph.

Should your child/student choose to withdraw, data collected from him or her, apart from focus group data, will be destroyed immediately and will not be included in this study.

Contacts and Questions: The researcher conducting this study is Ashley Bowman. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at abowman37@liberty.edu. You may also contact the research's faculty advisor, Dr. Roger Stiles, at rhstiles@liberty.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd, Carter 134, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information to keep for your records.

Statement of Consent:

I have read and understood the above information. I have asked questions and have received answers.

☐ By checking this box and providing my signature, I DO NOT consent to allow my child/student to participate in this study.

(NOTE: DO NOT AGREE TO ALLOW YOUR CHILD/STUDENT TO PARTICIPATE UNLESS IRB
APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN
ADDED TO THIS DOCUMENT.)

Signature of parent or guardian: _____ Date: _____

Signature of Investigator: _____ Date: _____

ASSENT OF CHILD TO PARTICIPATE IN A RESEARCH STUDY

What is the name of the study and who is doing the study?
The title of the study is "The Effect of Peer Practice on Communication Apprehension in High School Students," and the study is being conducted by Ashley Bowman.

Why are we doing this study?
We are interested in studying because teachers want to find ways to better prepare students to communicate in a variety of situations. The information gathered from this study may help teachers develop methods of better teaching and preparing students in methods to reduce anxiety during public speaking experiences.

Why are we asking you to be in this study?
You are being asked to be in this research study because you are expected, by the curriculum, to communicate in a variety of ways in your English class. Additionally, research with your specific age group is needed to help teachers and researchers better understand how to help students overcome communication apprehension.

If you agree, what will happen?
If you are in this study, you will participate in normal English class activities that involve communicating with your peers and teacher. You will then take a survey online to describe your personal experiences with communication apprehension in various situations.

Do you have to be in this study?
No, you do not have to be in this study. If you want to be in this study, then tell the researcher. If you don't want to, it's OK to say no. The researcher will not be angry. You can say yes now and change your mind later. It's up to you.

Do you have any questions?
You can ask questions any time. You can ask now. You can ask later. You can talk to the researcher. If you do not understand something, please ask the researcher to explain it to you again.

Signing your name below means that you want to be in the study.

_____
Signature of Child   Date

Ashley Bowman, researcher
Abowman37@liberty.edu
Roger Stiles, faculty advisor
Rhstiles@liberty.edu
Liberty University Institutional Review Board,
1971 University Blvd, Green Hall 1887, Lynchburg, VA 24515
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APPENDIX E

<u>Oral Presentation & Peer Practice Protocol</u>

General Instructions for Teachers:

Thank you for agreeing to allow your classroom to participate in this study. General instructions are provided below:

1. Provide each student in your classroom with a copy of the assumed consent letter. Students who return the letter <u>will not</u> complete the final survey at the conclusion of the learning activities.

2. You will then introduce your students to the topic you have selected as the focus of a formal, oral presentation. The topic may be related to any area of study in your classroom. The presentation must be given individually, in front of the entire class (teacher and students), and must adhere to the expectations stated in the rubric provided.

   a. Please note- this is an INDIVIDUAL assignment. Small groups cannot be utilized for the purposes of this study.

   b. Presentations should last between 3-5 minutes for each student.

   c. The mode of presentation is up to you as the instructor, but Powerpoint, Prezi, or other interactive medium is highly recommended.

3. Select teachers will utilize the peer practice protocol. The remaining teachers should not provide any additional instruction beyond what you would normally provide in regards to oral presentation skills.

4. After the presentations have concluded, you will allow participating students to take the final survey on their laptops via Survey Monkey. This survey should take no more than 20-25 minutes.

Instructions for Teachers Using Peer Practice:

You will follow all of the general instructions, but will add in the following Peer Practice

activities PRIOR to students' presentations. The purpose of this study is to determine whether or

not peer practice is effective in reducing communication apprehension in high school students.

- Peer practice protocol will require two separate practice sessions in the classroom

    environment.

- Each peer practice session must take place within the classroom with the teacher

    monitoring student practice.

- Each "peer practice" will be defined as completely presenting, from beginning to

    end, the information the student plans to present in his or her formal presentation

    to the entire class, out loud to his or her partner or partners.

Three days before presentations:

- Students should work with ONE partner and run through his or her complete presentation

    with one partner. Partners will give one another feedback and constructive criticism via

    the "Peer Practice Feedback" form provided.

    o The presentations should be fairy finalized by this point; however, students will

        use the feedback provided by their partner to improve upon their presentation.

        Think of this as peer editing for a presentation.

One day before presentation:

- Place students in groups of 4-5 students. It is important that YOU select these groups,

    not the students. Students will take turns presenting their complete presentation to the

    group. This will continue until all group members have run through the presentation.

Again, group members will give one another feedback and constructive criticism via the "Peer Practice Feedback" form provided.

General Tips and Ideas:

- Allow students to utilize their laptops to pull up their presentation (if using Powerpoint or Prezi) while going through the peer practice rounds.

- Students may also want to print "handout" copies of their presentation to their group members so they can make notes while doing peer practice.

PRESENTATION RUBRIC

(for grades 9-12; Common Core ELA aligned)

	Below Standard	Approaching Standard	At Standard	Above Standard ☐
Explanation of Ideas & Information	• does not present information, arguments, ideas, or findings clearly, concisely, and logically; argument lacks supporting evidence; audience cannot follow the line of reasoning • selects information, develops ideas and uses a style inappropriate to the purpose, task, and audience (may be too much or too little information, or the wrong approach) • does not address alternative or opposing perspectives	• presents information, findings, arguments and supporting evidence in a way that is not always clear, concise, and logical; line of reasoning is sometimes hard to follow • attempts to select information, develop ideas and use a style appropriate to the purpose, task, and audience but does not fully succeed • attempts to address alternative or opposing perspectives, but not clearly or completely	• presents information, findings, arguments and supporting evidence clearly, concisely, and logically; audience can easily follow the line of reasoning (CC 9-12.SL.4) • selects information, develops ideas and uses a style appropriate to the purpose, task, and audience (CC 9-12.SL.4) • clearly and completely addresses alternative or opposing perspectives (CC 11-12.SL.4)	
Organization	• does not meet requirements for what should be included in the presentation • does not have an introduction and/or conclusion • uses time poorly; the whole presentation, or a part of it, is too short or too long	• meets most requirements for what should be included in the presentation • has an introduction and conclusion, but they are not clear or interesting • generally times presentation well, but may spend too much or too little time on a topic, a/v aid, or idea	• meets all requirements for what should be included in the presentation • has a clear and interesting introduction and conclusion • organizes time well; no part of the presentation is too short or too long	
Eyes & Body	• does not look at audience; reads notes or slides • does not use gestures or movements • lacks poise and confidence (fidgets, slouches, appears nervous) • wears clothing inappropriate for the occasion	• makes infrequent eye contact; reads notes or slides most of the time • uses a few gestures or movements but they do not look natural • shows some poise and confidence, (only a little fidgeting or nervous movement) • makes some attempt to wear clothing appropriate for the occasion	• keeps eye contact with audience most of the time; only glances at notes or slides • uses natural gestures and movements • looks poised and confident • wears clothing appropriate for the occasion	

	Below Standard	**Approaching Standard**	**At Standard**	**Above Standard** ✔
Voice	• mumbles or speaks too quickly or slowly • speaks too softly to be understood • frequently uses "filler" words ("uh, um, so, and, like, etc.") • does not adapt speech for the context and task	• speaks clearly most of the time • speaks loudly enough for the audience to hear most of the time, but may speak in a monotone • occasionally uses filler words • attempts to adapt speech for the context and task but is unsuccessful or inconsistent	• speaks clearly; not too quickly or slowly • speaks loudly enough for everyone to hear; changes tone and pace to maintain interest • rarely uses filler words • adapts speech for the context and task, demonstrating command of formal English when appropriate (CC 9-12.SL.6)	
Presentation Aids	• does not use audio/visual aids or media • attempts to use one or a few audio/visual aids or media, but they do not add to or may distract from the presentation	• uses audio/visual aids or media, but they may sometimes distract from or not add to the presentation • sometimes has trouble bringing audio/visual aids or media smoothly into the presentation	• uses well-produced audio/visual aids or media to enhance understanding of findings, reasoning, and evidence, and to add interest (CC 9-12.SL.5) • smoothly brings audio/visual aids or media into the presentation	
Response to Audience Questions	• does not address audience questions (goes off topic or misunderstands without seeking clarification)	• answers audience questions, but not always clearly or completely	• answers audience questions clearly and completely • seeks clarification, admits "I don't know" or explains how the answer might be found when unable to answer a question	

Your Name: Partner's Name:

Peer Practice Evaluation

Evaluate your partner using the following scales and criteria.
1= Never, 2= Almost Never, 3= Sometimes, 4= Almost Always, 5= Always.

Speaks clearly and is easy to understand.   1   2   3   4   5

Makes eye contact frequently.   1   2   3   4   5

Does not rush through their presentation.   1   2   3   4   5

Does not always look at their presentation.   1   2   3   4   5

Meets criteria of presentation rubric.   1   2   3   4   5

One thing you did really well was…_____

_____

_____

One thing you could improve might be…_____

_____

_____