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PUBLIC SPEAKING COMMUNICATION APPREHENSION AMONG ADULT LEARNERS WITH BIPOLAR SPECTRUM DISORDER

A Dissertation in
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by

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ABSTRACT

This study examines the role bipolar spectrum disorder (BSD) plays in the public speaking communication apprehension (CA) of adult learners having the illness. Using a host of Likert-type scales (i.e., Personal Report of Public Speaking Anxiety, Situational Communication Apprehension Measure, Student Motivation Scale, Generalized Belief Measure) and the Mood Disorder Questionnaire, self-rated scores provided from adults screening positive and nonpositive for BSD are compared to one another using SPSS. Participants are recruited from Penn State University’s Research Participation Sign-up System (RePaSS) and the International Bipolar Foundation (IBPF). All participants complete surveys using Qualtrics, an encrypted online survey software. The study indicates that, on average, adult learners with BSD do not experience levels of public speaking CA significantly higher than the general population.
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Chapter 1

Introduction

This chapter provides an overview of a study examining the role bipolar spectrum disorder (BSD) plays in the public speaking of adult students in higher education settings. The study has adult students self-rate their levels and types of communication apprehension (CA), feelings about public speaking education, and perceptions of having BSD. The chapter begins with a background of public speaking CA, a trying emotional struggle, as related to higher education contexts and then offers a description of common behavioral manifestations seen in people with BSD. This description of behaviors is followed by a section that illuminates the effects BSD emotional imbalance has on adult students who have been diagnosed with the illness. Further background for this study is provided by discussing its rationale and fit within the field of adult education, followed by sections describing the purpose, research questions, conceptual framework, design/methodology, and significance of the study. The chapter concludes with a definition of terms, clarification of research assumptions, and explanation of study limitations.

Background to the Problem

Public speaking is a fundamental activity for adult students in higher education. Public speaking typically involves a single student standing in front of his or her classmates and instructor(s) while delivering verbal and nonverbal messages for the purpose of sharing information as a part of a graded educational activity. Whether
students are completing general education public speaking courses, sharing newly learned knowledge during classes within their majors, or defending doctoral dissertations, the ability to build and deliver compelling oral addresses is at the center of those academic pursuits.

The Association of American Colleges and Universities names oral communication as an “intellectual and practical skill” that should be a part of institutions’ general education classes and “practiced extensively, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance” (Association of American Colleges and Universities, 2015). At the same time, students differ in their comfort with public speaking. While some adult students engage in confident and colorful public speaking others prefer more reserved modes of address. Other students, even those with high academic potential or merit, shudder with emotional anxiety under the perceived pressure that frequently accompanies public speaking (McCroskey et al., 2014; McCroskey, 2009).

While it is no great secret that people send, receive, and interpret messages differently from one another, the drastic effects CA has upon adult students can be unexpected and staggering (Arquero et al., 2016; LaRochelle, 2016; Frantz, Marlow, & Wathen, 2014; Strawser et al., 2017; Mahoney, Lawton, & Foeman, 2017). Perhaps the biggest barrier to effective public speaking is CA: “an individual’s level of fear or anxiety associated with either real or anticipated communication with a person or persons” (McCroskey, 1977, p. 78). Indeed, high CA is a monumental emotional struggle for those
it afflicts. While there is not a significant correlation between high CA and intelligence, 
its presence in adult students will have dramatic effects on their academic success 
(McCroskey, Daly, & Sorensen, 1976). Students with high overall CA, occurring in all 
types of communication contexts (i.e., interpersonal conversations, group interactions, 
and public speaking) and measured by the Personal Report of Communication 
Apprehension, often score lower on all categories of standardized tests (McCroskey & 
Andersen 1976; Bashore, 1971). Furthermore, students with elevated CA typically have 
cumulative GPAs .5 lower than their moderately apprehensive counterparts (on a typical 
0.0-4.0 scale) (Scott & Wheeless, 1976). These differences in grades are especially 
prevalent in small classes where apprehensive adults cannot blend into a larger group of 
students (Scott & Wheeless, 1976; Hurt, Preiss, & Davis, 1976).

McCroskey and Andersen (1976) also find an atypical concentration of highly 
apprehensive students in university lecture-style classes. These course contexts are ones 
where apprehensive students will more than likely not have to stand in front of their 
classmates to deliver public addresses. When apprehensive students are forced to enroll 
in small-sized classes, they often position themselves in seating locations that minimize 
the likelihood of being asked questions by instructors (Pichieri & Guido, 2016).

McCroskey and Sheahan (1976) are able to reliably predict where in a classroom students 
will sit based solely on their CA levels. These researchers find that students with low CA 
sit front and center while those with medium CA place themselves on front sides and in 
the middle of classrooms. Students with high CA dominate back corners of classrooms.
Students with high CA are less likely to take advantage of one-on-one academic tutoring sessions, even when struggling in courses (Knight, Johnson, & Stewart, 2016). Conversely, students with low CA seek out assistance from tutors at a rate that is three times that of their apprehensive counterparts. Also, students with high CA are more likely to discontinue tutoring sessions, even when these sessions have improved their grades (Scott, Yates, & Wheeless, 1973). Therefore, students who are very nervous about delivering speeches to their classmates are also the least likely to seek academic help from tutors in this area. Due to all of these factors, highly apprehensive students often carry a broad, generally distasteful perception of education (McCroskey & Sheahan, 1976). This distasteful perception does not mean that apprehensive students are not interested in learning or incapable of education. Instead, data suggest that typical higher learning structures are often inefficient at educating highly apprehensive students in a manner conducive to their needs. In short, emotions culminating from CA seem to dictate where, when, and how successfully a student will or will not seek out formal education.

CA plays a role in all types of speech communication (Sawyer, 2016; Licorish & MacDonell, 2015). People may experience high or low CA depending on several contextual variables. For example, many people self-report minimal CA while communicating dyadically with a best friend or when working within a small groups of work colleagues. However, when placed in a different type of communication context such as public speaking, where they are exclusively in front of an audience and expected
to do most if not all of the talking, many people experience a comparatively higher self-reported level of CA. This study focuses on public speaking as opposed to dyadic (2 people) and small group (3 to 20) interactions because, of these three primary types of speech communication, the public context is the one that adults normally self-report having the highest CA (McCroskey, 1982). The study also specifically focuses on a unique set of adult students for whom CA emotions could potentially display a notable effect: those with BSD.

**What is Bipolar Spectrum Disorder?**

The American Psychiatric Association describes BSD as a psychopathology involving disturbances in mood (American Psychiatric Association, 2013). BSD is highlighted by the presence of abnormally elevated moods, energy, and cognition; it is an ongoing disturbance of emotions. The duration and severity of symptoms attached to these periods of elevation leads to potential diagnoses of a manic or hypomanic episode, with hypomanic being the less severe of the two. These (hypo)manic episodes can include symptoms such as pressed speech, extreme agitation, feelings of intense euphoria, severe sleeplessness, delusions, substance abuse, and participation in high-risk activities. Depending on the type of BSD, symptoms of major depressive disorder (MDD) such as fatigue, loss of interest in pleasurable activities, and weight loss may precede, follow, or accompany these manic and hypomanic states. The American Psychiatric Association offers a spectrum of formal diagnoses that can be used to describe both the duration and intensity of BSD mood fluctuations, such as BD-I, BD-II, BD-OS (otherwise specified),
and cyclothymia, as well as unique features associated with a particular episode, e.g., a mixed episode, rapid cycling, or BD-I with catatonic features.

Lifetime prevalence rates for BD-I symptoms are estimated to be between 0.3% to 1.2% (Goodwin & Jamison, 2007; an extended epidemiological description of BSD is offered in the “Definitions” portion of this chapter). With an average onset occurring in early adulthood (Goodwin & Jamison, 2007), BSD can be a volatile and dangerous illness. Precise rates of suicide among people with BSD are difficult to establish. Individual severity of symptoms, effects of new medicines, exclusion or inclusion of “accidental” deaths related to automobile fatalities, criminal activity or drug overdoses, hospitalization, mood state, length of symptoms, and other factors lead to differences in reported rates of suicide in those with BSD. Even so, conservative estimates place the lifetime suicide attempt rate of BSD sufferers at 10% (Tondo et al., 1999) to 20% (Valtonen, et al., 2005); the emotions felt by people with BSD leads to 1 in 10 attempting to kill themselves.

Due to its hazardous nature, physicians, therapists, and researchers continue to develop numerous treatments for people with BSD. Pharmacotherapy is typically seen as a requisite device in the emotional wellness of patients (Goodwin & Jamison, 2007). Over the last few decades, researchers have made great strides in developing an array of BSD medications that can be matched to treat the unique nuances of patients’ manic and depressed states. Many people with BSD also participate in psychoeducation, interpersonal, cognitive, family, and/or behavioral activation therapies, all of which have
been shown to be positive adjunct methods of treatment for emotional imbalance (Kring et al., 2010).

Like other mental disorders, the causes of BSD are best understood through a diathesis-stress paradigm (Riboni & Belzung, 2017). This paradigm suggests that psychopathologies are the combined result of genetic predispositions, atypical biological structures, and environmental effects. Twin (Kieseppa et al., 2004) and adoption (Wender et al., 1986) studies estimate BSD heritability being as high as 93%. Abnormal neuroreceptor sensitivities to dopamine are theorized as a cause of manic episodes (Anand et al., 2000, Strakowski et al., 1997) while insensitivities to serotonin are thought to be a trigger of depressive symptoms (Benkelfat et al., 1994; Neumeister et al., 2002). Cortisol, the main stress hormone triggered by the hypothalamic-pituitary-adrenocortical axis of the neuroendocrine system, is often dysregulated in people suffering MDD (Garbutt et al., 1994) and BSD (Watson et al., 2006). Brain imaging studies show that deficits in structural functioning and volume exist in people who experience MDD (Sheline et al., 2001; Siegle et al., 2002) and manic episodes (Green, Cahill, & Malhi, 2007; Kruger et al., 2003; Rajkowska, Halaris, & Selemon, 2001).

Stress from external sources can contribute to the onset of a major depressive episode (Okkels et al, 2017; Brown & Harris, 1989). In particular, loss of relationships and humiliation are especially important in triggering depressive symptoms (Kendler et al., 2003). Negative communication from family members can also contribute to MDD (Butzlaff & Hooley, 1998). Unfortunately, people with MDD often form negative
cognitive biases. These biases cause them to pay greater amounts of attention to bad experiences and expect poor outcomes from daily endeavors (Kendall & Ingram, 1989). Manic episodes are also triggered by cognitive responses to external stimuli. Specifically, people with BSD tend to overestimate the rewards attached to their completing life goals such as receiving college degrees or getting married (Meyer et al., 2001; Johnson et al., 2000, Johnson et al., 2008). In other words, their emotions do not align with what is typical in a given situation; happiness and exuberance turns into a manic episode while sadness becomes MD.

Communication can be particularly challenging for people with BSD (Fisher et al, 2016). Negative changes in communication can be used to partially diagnose the mood state of patients with BSD (Young et al., 1978). Past research centers on the ways BSD patients’ speech patterns change during mood fluctuations. Rate of speaking and pauses in speech often fluctuate in unison with changes in moods among people with BSD (Hoffman, Stopek, & Andreasen, 1986). At times, the communication of manic patients becomes so frenetic that outsiders cannot follow its purpose and reasoning. The content of communication will also change with BSD mood swings. In particular, people experiencing manic and hypomanic episodes will frequently speak about grandiose unrealistic, or irresponsible plans, e.g., traveling far distances on a whim or investing large amounts of money into reckless activities (Carlson & Goodwin, 1973). The content of communication provided by people with BSD can have a negative effect on their interpersonal relationships. This negative effect is due to people with BSD often
communicating in an overly agitated (Koukopoulos & Koukopoulos, 1999) or sexualized (Jamison et al., 1980) manner.

**Effects of BSD on Adult Students in Higher Education Settings**

Formal diagnostic descriptions can only go so far in explaining BSD. Perhaps the best way to gain a clear understanding of manic episodes is to witness the personal accounts of those with BSD. Luckily, a number of people from an array of backgrounds record their experiences with BSD. One such person, Dr. Kay Redfield Jamison (1995), offers unique insight into the emotional experiences of a manic individual. Dr. Jamison, a Professor of Psychiatry at Johns Hopkins School of Medicine, has BSD. In her popular autobiography, *An Unquiet Mind: Memoir of Moods and Madness*, Dr. Jamison describes the lacerating flights and incessant spirals of BSD. As someone who has lived both as an adult student and educator with BSD her words provide an insight into this population:

“There is a particular kind of pain, elation, loneliness, and terror involved in this kind of madness. When you're high it's tremendous. The ideas and feelings are fast and frequent like shooting stars, and you follow them until you find better and brighter ones. Shyness goes, the right words and gestures are suddenly there, the power to captivate others a felt certainty. There are interests found in uninteresting people. Sensuality is pervasive and the desire to seduce and be seduced irresistible. Feelings of ease, intensity, power, well-being, financial omnipotence, and euphoria pervade one's marrow. But, somewhere, this changes. The fast ideas are far too
fast, and there are far too many; overwhelming confusion replaces clarity. Memory goes. Humor and absorption on friends’ faces are replaced by fear and concern. Everything previously moving with the grain is now against—you are irritable, angry, frightened, uncontrollable, and enmeshed totally in the blackest caves of the mind. You never knew those caves were there. It will never end, for madness carves its own reality. It goes on and on, and finally there are only others’ recollections of your behavior—your bizarre, frenetic, aimless behaviors—for mania has at least some grace in partially obliterating memories” (67-68).

One need only imagine what being under such an emotional state would do to the public speaking of students with BSD. Feelings of CA can arise from the flight of ideas, preoccupation with sensuality, or disjointed speech patterns associated with manic episodes. A sense that “I am not able to say the right things when manic” can set in (Jamison, 1995). Full understanding of this CA may not arrive until after manic students remit and return to euthymia. Once they enter remission and make such judgements, communication can be negatively affected and these students may withdraw from learning if not literally then in staying on the periphery of a classroom.

Through qualitative analysis of students ages 18 to 40 with BSD, Reed (2009) finds three common hurdles for this population as they engage higher education. First, students with BSD struggle for a sense of autonomy in their educations. This autonomy comes from a desire to personally make decisions about their educational goals. While it
can be assumed that almost all students want at least a small amount of autonomy in their educations, this issue is especially important for students with BSD. Feeling autonomous means that students with BSD are making decisions and taking actions to account for the role the disorder plays in their educations and not the other way around.

Second, higher education students with BSD have a desire to belong. Like autonomy, it can be assumed that belonging is a common desire for all students in higher education. Belonging can be problematic for students with BSD due to their sometimes unbalanced emotions, subsequent quirky behaviors, adherence to strict routines, and, unfortunately, occasional hospitalizations. As one student describes desiring to belong: “I wanted to be normal, and since I’m bipolar, being normal is hard …basically I just wish that this had never happened and that I could be like everybody else” (Federman, 2010, p. 65).

Finally, students with BSD are presented with unique hurdles in their attempts to thrive within the higher education setting. Thriving can be conceived as students not just enrolling in higher education but reaching their greatest potential while there. Students with BSD note an interesting dichotomy influences their thriving: support from family and institution. Namely, a lack of support can be detrimental to thriving within higher education. At the same time, dependence on support can impede students in gaining the sense that they are thriving and not just staying afloat. A student with BSD describes this dichotomy: “As for being prepared, I was not prepared at all. I’m very scared. I feel like bipolar has stunted my growth by having to live under my parents for so long. Sometimes
I feel like I have no idea how the world works or what I’m supposed to be doing or how to live by myself” (Federman, 2010, p. 71). As a group of learners that often struggles through college enrollment and completion, those with BSD can be effectively studied and helped through the field of adult education.

**Rationale of the Study’s Place Within Adult Education**

Despite having a tradition of being concerned with issues of diversity and equality (Kasworm, Rose, & Ross-Gordon, 2010; Boyadjieva & Ilieva-Trichkova, 2017), the field of adult education stands to spend more time studying the disabled. Linton (1998) describes disability as a marker denoting “membership within and outside the community. Disabled is centered and nondisabled is placed in the peripheral position in order to look at the world from inside out, to expose the perspective and expertise that is silenced” (p. 13). Classroom inclusion can be challenging for individuals with disabilities. Inclusion involves students who are disabled being identified and having accommodations such as lengthened exam times, sign language interpretation, assistive technologies, and note-taking services put in place so they can gain equal access to education (Weis, Dean, & Osborne, 2016; Covington, 2004; DuBois, 1998; Gadbow, 2002; Horton & Hall, 1998; Polson & White, 2000).

Inclusion is such a serious concern for adult learners with disabilities that laws have been put in place to ensure their equal and fair participation (Gould, 2016). Adult learners in the United States of America are protected by laws guaranteeing these educational supports will be available to them (Thomas, 2000). Unfortunately, legally
guaranteed equal access to education is not always synonymous with students actually participating in the classroom (Clark, 2006). Disabled students may gain access to courses but remain on the outside of learning due to remaining barriers in the classroom's physical environment (Hong et al., 2007), not feeling in control of their learning (Fornes, Rocco, & Rosenberg, 2008), or failing to communicate needs as they arise due to embarrassment (Rocco, 2000; Rocco, 2001). These barriers begin to explain why disabled students enroll in higher education programs at a rate that is proportionately lower than their abled counterparts (Wolanin & Steele, 2004).

World Health Organization (WHO) (2014) defines disability as “an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations.” WHO estimates that 15% of the world’s population has some type of disability. Mental disorders are a common type of disability. Approximately 30% of adults meet diagnostic criteria for a mental disorder at some point in their lives (WHO International Consortium in Psychiatric Epidemiology, 2000). Occurrence rates, symptoms, chronicity, and average age of onset vary among mental disorders. BD-I, although a more rare type of mental disorder (Goodwin & Jamison, 2007; 0.3-1.2% of the population), can have dire consequences upon the lives of those it afflicts. In summary, among adult students in higher education settings, 15% are disabled, 30% will suffer from a mental disorder at some point in time,
and about 1% have the most severe form of BSD, a psychopathology that wreaks havoc on their emotional states.

Moreover, the field of adult education also has a history of exploring the purposes emotions have in learning (Tsai, Li, & Cheng, 2017; Kasl & Yorks, 2015; Dirkx & Spurgin, 1992; Dirkx, 2008). The emotions and mood states of adult students can play good and bad roles in their learning. At times, the presence of emotion can positively affect learning. Displays of emotions in the classroom can help to relieve stress (Jarvis, 2006) and allow students to find similarities with others about their learning experiences (Lupton, 1998). However, emotions can negatively influence learning. Emotional outpourings that are too constant or intense can impede students’ abilities or willingness to interact during class (Dirkx, 2008). Such outbursts can also disrupt the learning of others. Understanding emotions as both positive and negative aspects of adult education is critical to the current study because BSD is defined by the presence of disabling mood swings.

Mental disorders such as BSD can be an especially challenging obstacle to equal and full access in higher education (Arria et al., 2013). For example, students with BSD who have recently graduated from high school enroll in postsecondary education at a rate that is about one third that of peers who do not have the illness (Getzel, 2001). This discrepancy is due in part to the nature of these disabilities. People with physical disabilities are often easy to spot. If a person cannot see, hear, or easily move about, others will quickly notice. As a mental disorder, BSD is different from these types of
external disability. For example, it is easier to recognize that a student is blind than to realize that he or she is experiencing a dangerous shift in emotional wellness.

For people who do not have BSD, live with a person who has BSD, or have training in a mental health field, the notion that moods and emotions can be the cause of a disability might seem surprising or even preposterous (Goodwin & Jamison, 2007). Seeing people as having BSD can be difficult until their symptoms become severe. From an institutional standpoint, accommodating students who need extended time to take exams is easier than helping those who digress into manic states. Unfortunately, higher education too often takes the easy route away from students with certain disabilities:

“Those students who struggle with diagnosed disorders, who have frequent suicidal thoughts, or who have the unfortunate luck to experience a bipolar or schizophrenic episode...all of those students are ones that many campus counseling centers are telling to seek help somewhere else.” (Van Burnt, 2012).

Van Burnt is not alone in describing how educational institutions interfere with student learning. Albert Einstein proclaims, “The only thing that interferes with my learning is my education” (Thielsch, 2011, p. 55). Mark Twain offers a similar opinion: “I have never let my schooling interfere with my education” (Martin, 2007, p. 178). In these two men we can see a parallel belief. Interestingly, one is known for his positivist inspection of the universe while the other is brilliant in his construction of literature—two individuals on polar opposite ends of the quantitative/qualitative spectrum who concur that education can impede learning. While these quips make for great talking points, at
their roots is a fundamental element of the adult education field: adults should not be
“institutionally invisible, marginalized, and taken for granted” (Sissel et al., 2001, p. 18)
and that education can, but should not, interfere with learning. Hence, educators must
understand how students with disabilities such as BSD experience the task of public
speaking, a skill so fundamental to the academic world that the Association of American
Colleges and Universities proposes it to be a part of most, if not all, higher education
classes.

Investigation of CA specifically by the field of adult education using psychometric
scales like those in this study is, if brief, not nonexistent. Conner and Williams (1987)
find a positive correlation between CA in students enrolled in adult basic education
programs and current employment status. In other words, adult students who are
currently unemployed are less likely to orally participate during these classes. This
finding is of great importance because unemployed students are, arguably, also those who
stand to receive the greatest benefit from adult basic education programs. In turn, the
authors propose that oral communication needs to be a skill woven into adult basic
education courses and programs. This proposal is in line with that of the Association of
American Colleges and Universities for general education programs. Of note, in their
study, Conner and Williams make use of a psychometric scale similar to those used in the
current study (Communication Apprehension-Organization Form; Scott, McCroskey, &
Sheahan, 1978). Clearly, a gap in adult education CA research using common
psychometric devices is broad enough as to warrant current and future investigation in
Purpose of the Study

The role BSD plays in the lives of those it afflicts is well documented. Relative to the purpose of the following study, this body of research covers achievement and communication by people with BSD. The psychopathology plays an interesting role in the academic endeavors of those who have it. BSD, hypomanic episodes in particular, is associated with moments of increased energy, gregariousness (Fieve, 2006), and artistic creativity (Jamison, 1993). Such qualities can play a positive role in the undertakings of students who have BSD. However, a general deficit in cognitive ability is seen among the BSD population. Through meta-analysis of previous studies concerning the effects of BSD on working and long-term memory, Goodwin and Jamison summarize: “Without question, BSD is associated with a marked deficit in the acquisition of new information. This deficit is seen in all phases of the illness, and its magnitude does not appear to be lessened in patients in remission” (2007, p. 293).

To date, the field of adult education explores the hurdles of classroom inclusion for students with disabilities. As a field, adult education also examines the role of emotions in learning. While not coming directly from the field of adult education, a robust amount of research centers on public speaking CA in instructional settings. Research external to the field of adult education also offers fascinating autobiographical accounts of adult students with BSD. While these fields provide their own sets of previous research and methods of investigation, they have yet to converge into one study.
Therefore, the purpose of this study is to measure differences in levels of public speaking CA between adult students with and without BSD.

**Research Questions**

The study is guided by four questions that reflect its overall purpose:

RQ1: Does the adult student with BSD experience a level of public speaking CA higher than that of students who do not have BSD?

RQ2: Does the adult student with BSD experience public speaking CA for reasons that are different from those of students who do not have BSD?

RQ3: Does the adult student without BSD hold a more positive perception than the adult student with BSD of educational programs that lower public speaking CA?

RQ4: Does the adult student with BSD attribute his or her level of public speaking CA to having the illness?

**Conceptual Framework**

The overall conceptual framework of an adult education study comes from its fundamental *worldview* and *theoretical framework*. Guba (1990) defines *worldview* as “a basic set of beliefs that guide action” (p. 17). The current study is grounded in postpositivism, a philosophical worldview that frequently drives education research. Postpositivism holds at least five assumptions about how knowledge is formed and academic research should be completed.

- Research seeks to make claims about causal relationships between phenomena.
- Claims about causal relationships between phenomena take the form of theories that can be tested and retested.

- Theories about causal relationships are tested by way of “data, evidence, and rational consideration” (Creswell, 2009, p. 7). Researchers ask specific questions and test theoretical hypotheses. Theories can be refuted through objective research.

- Research must be objective and free of bias. Objectivity can be pursued through application of reliable, valid quantitative measures. In comparison to researchers following other worldviews, i.e., constructivism, action/participatory, and pragmatism, postpositivist researchers tend to have less intimate conversations and relationships with their participants.

- Despite researchers’ attempts to be unbiased, knowledge is ultimately conjectural and fallible.

As previously discussed, measuring the effects BSD has on the public speaking of adult students who have the illness is an as-of-yet unstudied phenomenon. Therefore, any study of this topic must utilize a framework that provides clear direction and prescribed structures for investigation. Merriam and Simpson describe theoretical framework as the “underlying structure, orientation, and viewpoint of your study” (2000, pp. 23-24). Beyond its grounding in adult education’s focus on inclusion for students with disabilities and emotions in learning, the quantitative framework for this study comes from the field of speech communication. Specifically, the devices and research methods
used in the current study come from a popular subfield of speech communication called instructional communication. Instructional communication is the title given to a unique set of quantitative surveys and measurement tools that can be used to study the ways people communicate while engaged in learning (Rubin, Palmgreen, & Sypher, 2004; Rubin et al., 2009).

Rubin, Palmgreen, and Howard (2004) describe the purpose of instructional communication as “identifying, describing, classifying, and evaluating the multitude of measures available” and as a field that has “yielded a fairly exhaustive list of instructional communication measures” (p. 7). In order to be included in this body of work the researchers require that a measure meets six qualities. An instructional communication measure must be: (1) quantitative in nature and not a qualitative coding scheme, (2) instructionally relevant, (3) the most statistically reliable and valid device of its type, (4) current to the field, (5) openly available (free to users), and (6) prone to frequent and easy use by researchers. With these six measurement qualities in place, instructional communication spends a great deal of time investigating CA. Of note, the self-reported Personal Report of Public Speaking Anxiety (PRPSA) (McCroskey, 1970), Situational Communication Apprehension Measure (SCAM) (Richmond, 1978), Student Motivation Scale (SMS) (Rubin, Palmgreen, & Sypher, 2004; Christophel, 1990; Richmond, 1990), and Generalized Belief Measure (GBM) (McCroskey & Richmond, 1996) are instructional communication assessment tools of CA used in the current study. Chapter 3 contains detailed descriptions of the PRPA, SCAM, SMS, and GBM.
Chapter 3 also holds a description of the Mood Disorders Questionnaire (MDQ) (Hirschfeld, et al., 2000). The MDQ is a scale frequently used by clinicians in the overall treatment of people with BSD (Goodwin & Jamison, 2007). Although the MDQ is not framed as an instructional communication research instrument, it is nevertheless included in the current study for the purpose of ruling out control participants who may possibly screen positive for BSD.

Design and Methodology

The present study incorporates quantitative methods of research. Quantitative research methods are “a means for testing objective theories by examining relationships among variables” (Creswell, 2009, p. 233). A theory is “a well-substantiated explanation of some aspect of the natural world that can incorporate facts, laws, inferences, and tested hypotheses” (National Academy of Sciences, 1998, p.5). Griffin (1997, pp. 34-38) offers five qualities for judging theories, surveys, and experiments. Theory (1) “explains an event or behavior...synthesizes the data, focuses our attention on what is crucial, and helps us ignore that which makes little difference...[theory]...explains why” (pp.34-35); (2) helps to predict the future; (3) seeks the easiest and most expeditious solutions to problems; (4) carries testable hypotheses, and; (5) aims at practical utility for the masses. In testing theories and investigating relationships among variables, quantitative research typically gathers numbered data through predetermined tools of measurement that allow for statistical analysis.

Surveys are popular instruments of quantitative research that can be used to test
theories and verify connections between variables. Surveys are comprised of questions or statements related to investigators’ research purposes. As methods of quantitative investigation, surveys have many benefits (Babbie, 1990). These benefits include:

- **Flexibility.** Surveys can contain whatever combination of questions or statements investigators see fit.

- **Precision.** Surveys ask focused questions while ensuring that participants will answer in identical manners, e.g., all participants use the same Likert-type scale.

- **Statistical validity and reliability.** PRPSA, SCAM, SMS, and GBM are already pretested.

- **Anonymity.** Participants can complete surveys without their answer being directly attributed to them.

- **Efficiency.** Surveys allow researchers to quickly assess large numbers of participants.

- **Congruence with other research on BSD and CA (Goodwin and Jamison, 2007; McCroskey, 1977).**

The current study contains two groups of adult students: those who have BSD and those who do not have BSD. Each group completes nearly identical sets of instructional communication surveys related to CA. PRPSA measures participants’ overall public speaking CA and is used to explore RQ1. SCAM is similar in appearance to PRPSA, but can be manipulated to assess the situational causes of participants’ CA. SCAM is used to
investigate RQ2. RQ3 is investigated via SMS and RQ4 by way of GBM. Both groups of participants also complete the MDQ for the purpose of ruling out control participants who screen positive for BSD.

Participants for the study are recruited from two populations. About half of participants are drawn from Penn State University’s Research Participation Sign-Up System (RePaSS). RePaSS is an online recruitment platform used by Penn State faculty for conducting a variety of survey-based research projects. The system gathers participants from a number of common general education courses at the Penn State. The other half of participants are recruited through the email listserv at the International Bipolar Foundation (IBPF). The IBPF is a nonprofit organization helping people with BSD locate necessary resources and support the treatment of their illness. Signing up to be on the IBPF email listserv is free to the public. Membership provides recipients with monthly emails about research, treatments, and public events related to BSD. It is important to note that, while coming from different recruitment pools, all participants complete an essentially identical set of surveys. As is the case with dissertation research, this study required approval from Penn State’s Internal Review Board (IRB). Specifically, using RePaSS and the IBPF email listserv as methods of participant recruitment for the study required permission from Penn State’s IRB. This study received such approval. Furthermore, the IBPF provided approval for access to use its email listserv for the purpose of conducting the study.
Significance of the Study

When untreated BSD can be an upending psychopathology. For those it afflicts, BSD is a manageable illness that nevertheless requires vigilant monitoring. Avoidance of stress can help to impede the onset of manic and major depressive episodes. As many students, both with and without BSD, can attest, stress can arise often in higher education contexts. The rush of completing single class meetings, entire courses, and full semesters can test the mental capacity of students as well as their abilities to endure emotional and physical exertion. Such hurdles are challenging enough for students who are free of mental disorders, let alone those with BSD.

The current study is significant because it seeks to understand a potential stressor for students with BSD, the public speaking activities taking place while they are completing classes, courses, and semesters. While no investigation can offer a total solution to the complex nature of BSD, knowledge gained from the current study will offer students with the psychopathology assistance in overcoming at least one hurdle in their academic endeavors. Specifically, findings from the current study will uncover the types of in-class communication that most frequently create apprehension in students with BSD. This new knowledge will allow therapists, collegiate disability services coordinators, and faculty to customize systematic desensitization programs, the most popular treatment for CA (discussed in Chapter 2), when helping students with BSD. Most importantly, the study offers foresight to students with BSD before and during their enrollment within higher education institutions.
Moreover, BSD is not the only existing psychopathology. A quick glance at The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM–5; American Psychiatric Association, 2013) reveals a slew of other mental disorders carrying their own sets of symptoms and effects, e.g., somatoform and factitious disorders or personality disorders. The public speaking experiences of students with any of these diagnoses could also be worthy of exploration. Therefore, a secondary goal of the current study is the genesis of a new method of investigating, understanding, and helping students with any number of mental disorders as they look to complete public speaking tasks during their enrollments in higher education.

Definition of Terms

The following study requires definition of two categories of terms: (1) those related to communication, and (2) those related to BSD.

Communication Terms

*speech communication*: the sending and receiving of verbal and nonverbal messages between two or more people in a face-to-face context.

*communication apprehension (CA)*: “an individual’s level of fear or anxiety associated with either real or anticipated communication with a person or persons.” (McCroskey, 1977, p. 78)

*public speaking*: a type of speech communication in which one person stands in front of his or her seated audience of at least twenty people and delivers verbal and nonverbal messages for the purpose of sharing information and creating meaning.
public speaking anxiety: the type of CA a person experiences when he or she is delivering an address to a public audience.

**BSD Terms**

**Bipolar Disorder I (BDI):** a mental disorder that includes a manic episode that may be preceded or followed by a hypomanic and/or major depressive episode. (5th ed.; DSM–5; American Psychiatric Association, 2013)

**Bipolar Disorder II (BDII):** a mental disorder that includes a hypomanic episode and a major depressive episode. (5th ed.; DSM–5; American Psychiatric Association, 2013)

**Bipolar Disorder Otherwise Specified (BD-OS):** a mental disorders in which BSD symptoms of manic episodes, hypomanic episodes, and/or major depressive episodes are present but do not meet the criteria for full diagnosis of BDI or BDII. (5th ed.; DSM–5; American Psychiatric Association, 2013)

euthymia: a healthy mood state in which an individual experiences the ups and downs of everyday life but is mostly content.

**hypomanic episode:** similar in nature to a manic episode except that symptoms must (1) only last at least four days, (2) not cause severe impairment to social and occupational functioning, (3) be uncharacteristic of a nonsymptomatic state, and (4) not be the result of medication side effects, ingestion of illegal drugs, or another illness. (5th ed.; DSM–5; American Psychiatric Association, 2013, pp. 124-125)

**major depressive disorder/episode:** “Five (or more) of the following symptoms
have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest in pleasure.” The remaining symptoms include (3) significant weight loss when not dieting or weight gain, (4) insomnia or hypersomnia, (5) psychomotor agitation or retardation, (6) fatigue, (7) feelings of worthlessness or excessive guilt, (8) diminished ability to think, concentrate, or be decisive, and (8) recurrent thoughts of death or suicide. The symptoms must occur nearly every day during the 2-week (or more) long episode. Symptoms must be severe enough as to interfere with social, occupational, or personally important activities. The symptoms must not be the result of medication side effects, ingestion of illegal drugs, or another illness. (5th ed.; DSM–5; American Psychiatric Association, 2013, pp. 160-161; 125-126)

*manic episode*: “A distinct period of abnormally and persistently elevated, expansive, or irritable mood and abnormally and persistently increased goal-directed activity or energy, lasting at least 1 week and present most of the day, nearly every day (or any duration if hospitalization is necessary).” During the episode three (four if mood is only irritable) of the following symptoms must be present in a significant and noticeable way: (1) inflated self-esteem or grandiosity, (2) decreased need for sleep, (3) more talkative than usual or pressure to keep talking, (4) flight of ideas, (5) distractibility, (6) increase in goal-directed activity, and (7) excessive involvement in pleasurable activities that have a high potential for painful consequences. The symptoms must be severe enough as to cause marked impairment in social or occupational functioning or severe
enough to cause hospitalization. The symptoms must not be the result of medication side effects, ingestion of illegal drugs, or another illness. (5th ed.; DSM–5; American Psychiatric Association, 2013, p. 124)

*mental disorder:* “a syndrome characterized by clinically significant disturbance in an individual’s cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning. Mental disorders are usually associated with significant distress in social, occupational, or other important activities. An expectable or culturally approved response to a common stressor or loss, such as the death of a loved one, is not a mental disorder. Socially deviant behavior (e.g., political, religious, or sexual) and conflicts that are primarily between the individual and society are not mental disorders unless the deviance or conflict results from a dysfunction in the individual, as described above” (5th ed.; DSM–5; American Psychiatric Association, 2013, p. 20); for the purpose of the current study, the terms *mental disorder* and *psychopathology* are used synonymously.

*remission:* the state after a BSD manic or major depressive episode in which an individual’s manic and/or depressed symptoms have subsided.

**Clarification of Research Assumptions**

The following assumptions are embedded in the current research study:

1. BSD is a psychopathology affecting the everyday lives of those it afflicts.

2. Even when in remission, people with BSD are affected by their having the psychopathology.

4. BSD is a spectrum disorder that involves patients having some unique combination and degree of manic and/or depressive symptoms.

5. People with BSD and people without BSD are equally able to complete instructional communication measures of CA such as PRPSA, SCAM, SMS, and GBM. They are also able to complete the MDQ.

6. Participants in the study are not under the influence of illegal drugs or alcohol at the time of their completing the study’s surveys.

7. CA of public speaking can be accurately studied through PRPSA, SCAM, SMS, and GBM.

8. The MDQ can be used to effectively rule out a person’s having BSD.

9. Public speaking is a fundamental activity in higher education.

10. While completing surveys participants are in a euthymic mood state, i.e., they are not enduring a full manic or major depressive state during completion of the study’s surveys.

**Explanation of Limitations**

The primary limitation of this study comes from its being quantitative in nature. As discussed further in Chapter 2, quantitative surveys such as the PRPSA and SCAM allow researchers to accurately uncover and describe the causes and levels of an
individual’s unique CA. These findings allow for customization of proven educational systematic desensitization programs (also covered in Chapter 2) that can be undertaken by nervous speakers to alleviate their CA. However, the current study does not address accessibility and impeded enrollment in higher education by students with BSD (and all other disabilities). Impeded enrollment is a critical issue because findings and suggestions made by the current study obviously cannot be applied to adults with BSD who are unable to participate in higher education because of their illness. Indeed, follow up qualitative research will be necessary to further understand why many would-be students with BSD do not enroll in college and subsequent public speaking courses.

Two other potential limitations exist with this study due to the population under investigation. First, there exists a chance, however slight, that participants in the study may have been misdiagnosed with BSD by their medical providers (Vöhringer, & Perlis, 2016; Lish, 1994). Second, the moods of BSD participants may be attributable to a common comorbid pathology, e.g., substance abuse (Sagman & Tohen, 2009). In such cases, participants’ unique responses might appear related to their having BSD when the two are, in fact, not correlated. Although this discrepancy could take place, the nature of quantitative research, with large pools of participants, helps to ensure that no single participant’s answers are weighed so heavily as to upend or radically influence statistical findings. For the sake of expeditiousness, participants are assumed to be accurately diagnosed and not experiencing any current mood fluctuation due to a comorbid pathology, e.g., being under the influence of alcohol and/or illegal/unprescribed
medications when completing PRPSA, SCAM, SMS, or GBM.

**Chapter Summary**

This chapter provides an overview of the current study. The chapter begins with a background of CA. The chapter then offers a description of BSD and how the illness influences the education of those with the psychopathology. Further background for this study is provided by exploring its rationale and fit within the field of adult education as an inspection of both disability and emotion. This background is followed by sections describing the study’s overall goals and quantitative methods of analysis. The chapter concludes with a description of the study’s terms, research assumptions, and limitations governing the study’s overall findings.
Chapter 2

Review of Literature

The following chapter contains four sections and provides a review of literature that bridges previous research on the role of emotions in adult education, bipolar spectrum disorder (BSD), and communication apprehension (CA). This review of literature offers further background for the study’s research questions and purpose. Namely, do adult students with BSD experience higher levels of public speaking anxiety than adult students who do not have BSD and, if so, is there a difference between what triggers such anxiety in the two populations? Also, is there a difference between how adult students with and without BSD view educational programs that intend to lower CA? The first section, Theoretical Framework, preludes the rest of the chapter’s review of emotions and disabilities in adult education. The second section of the chapter discusses emotions in adult education and higher learning; it pays particular attention to the relationship between the two because CA involves emotions that can potentially interfere with a student’s learning and overall academic achievement. The third section of this chapter examines disabilities as a point of investigation by the field of adult education. This third section also describes BSD as a disability. The chapter’s final section explores constructs of BSD in relationship to CA.

Theoretical Framework

Despite never being simultaneously investigated by way of a single study, the field of adult education nevertheless offers theoretical frameworks that provide structure for
exploring and understanding the complex relationship between BSD and public speaking CA in students. Theoretical frameworks informing the current study fall into two categories. First, Illeris’s (2002) triadic model provides a broad framework for understanding how cognition, emotion, and society intersect to describe the vast concept of adult learning. Second, a host of supplementary yet equally important frameworks build off of Illeris’s model in a manner that further informs how BSD and CA are specifically investigated in the current study. These later frameworks focus on emotions and disabilities.

**Illeris’s Triadic Model of Learning**

Illeris (2002; 2003) describes learning as an activity in which an adult navigates five types of stimuli. These five types of stimuli involve an adult receiving information in different ways. In turn, these five stimuli influence and help to define three larger dimensions of learning for an adult. The first type of learning stimuli is perception, “where the surrounding world comes to the individual as an unmediated sense impression” (Illeris, 2002, p. 20). In other words, learning can occur when an adult uses any of his or her five senses to witness the surrounding environment. The second form of learning stimuli is transmission, an activity in which another person or persons provides the learner with new information. A college lecture, one in which a professor addresses his or her students, is a common form of transmission learning seen in higher education. The third stimuli is experience. While experience may contain transmission, this stimuli aims to “limit the use of the word so that experience presupposes a particular activity, i.e.,
that the learner is not simply receiving, but also acts in order to benefit from the interaction” (2002, p. 20). Imitation, the fourth type of stimuli, happens when a learner models his or her behaviors after another person, typically one with a notable degree of expertise and experience. The final stimuli, activity, involves an adult engaging in goal-oriented activities within a group of other people, often fellow learners.

At times, an adult learning experience will focus mostly on one type of stimuli. For example, a professor delivering a lecture to his or her students is relying largely on transmission stimuli. However, an overall learning experience can simultaneously contain all five types of stimuli. For instance, a higher education public speaking course could begin with perception; the student would enter class and perceive his or her environment, seeing the layout of the room, listening for external noises such as buzzing lighting, and feeling the physical comfort or discomfort offered by desks and chairs. From there, the student could move to transmission, receiving lectures from a professor concerning skills of effective public oration. In such a course the student would experience public speaking by standing in front of his or her classmates and actually delivering speeches. This experience could also involve imitation if the student models his or her speeches after ones displayed during class. The professor could also incorporate an activity stimuli in which students work together to create a joint speech or group presentation.

According to Illeris (2002, 2003) learning is not simply the reception of stimuli by an individual. Instead, learning involves these five types of stimuli molding three
dynamic, interdependent dimensions of an adult. The first dimension of learning, cognition, involves “knowledge and motor learning, both of which are controlled by the central nervous system” (Illeris, 2002, p. 18). Long the focus of psychologists studying learning, cognition essentially centers on the retention of information and performance of tasks by an adult student (Merriam, Caffarella, & Baumgartner 2007). As is often the case in higher education contexts, cognition can be quantitatively assessed and described, e.g., through course exams and student GPA. Cognition remains the end goal of many educators. These educators may ask themselves and be most concerned with a guiding question such as, “Did the student learn the course material and can he or she apply it as necessary?” In the case of a higher education public speaking course, cognition could be assessed by way of graded speaking assignments and exams. However, under Illeris’s model, learning also holds two other dimensions.

The emotional dimension of learning is “psychological energy, transmitted by feelings, emotions, attitudes and motivations which both mobilize and, at the same time, are conditions that may be influenced and developed through learning” (Illeris, 2002, p. 18). Adult students in higher education settings can be expected to have their cognitive goals, e.g., successfully learning and applying course material, affected by their emotions and vice versa. For example, when an adult student performs well on cognitive tasks in a public speaking course, he or she will often understandably have a corresponding positive emotional experience. On the other hand, when an adult student does not perform well cognitively in a public speaking class, it is equally understandable that he or she may have
a negative emotional outcome. Conversely, an adult student who is emotionally strained when entering a public speaking class may see his or her cognitive efforts fall short of desired outcomes. At the same time, an adult student enjoying positive emotions would not inherently suffer in reaching cognitive goals because of that state. Such a relationship between emotion and cognition is, of course, not sole domain of the current study or public speaking courses. Emotions could affect adult students in any class.

Much of the relationship between the cognitive and emotional learning dimensions is influenced by Illeris’s third and final element, society. Illeris defines the societal dimension of learning as “external interaction, such as participation, communication, and cooperation. It serves as the personal integration in communities and society and thereby builds up the sociality of the learner” (2004, p. 83). In terms of a higher education public speaking course, the ideal outcome for a student of himself or herself and by the professor could be broadened societal awareness. This expanded social dimension might center on the student being able to successfully transfer new public speaking skills into his or her job. Societal expansion could also culminate in a deeper appreciation for the historical and current significance of civic discourse as a promoter of social change and justice. Understandably, a student may not fully utilize or even grasp the societal dimension of a public speaking course until well after his or her enrollment. Such would be the case of a student who months or even years later uses the knowledge he or she learned in a socially relevant manner, e.g., designing and delivering a speech as a part of an interview for a new job.
In summary, Illeris (2002, 2004) explains learning as an activity involving five types of stimuli and three interwoven dimensions. This triadic model offers a broad conceptualization of adult learning that begins to lay the groundwork for understanding the complex nature of and potential relationship between BSD and CA in students. Osborn (2004) describes Illeris’s model as one that synthesizes microcomponents of learning and teaching into a single macro theory. As demonstrated in the remainder of this chapter, both BSD and CA are elements that, when present in an adult student, can affect his or her perceptions of stimuli and ability on cognitive tasks. Furthermore, both phenomena, but especially BSD, involve emotional disruption in adult students. Lastly, the societal dimension is paramount in the learning of adult students with BSD and CA. As a disability, BSD is, in many ways, a socially defined psychopathology that can impede a person’s inclusion in higher education, a social experience. High levels of CA can cause an adult to remove himself or herself from social interactions including the classroom. Therefore, building from Illeris’s initial triadic model of adult learning, the current study is further informed by past adult education research on emotions and disabilities.

**Emotions and Disabilities as Theoretical Frameworks in Adult Education**

The current study examines the role BSD possibly plays in the public speaking CA of adult learners in higher education contexts. Both of these variables, BSD and CA, involve emotional struggle playing out in a social arena that can negatively affect an adult’s cognitions. Furthermore, these emotional struggles can be so severe as to warrant
being described as disabilities (especially in the case of BSD). Therefore, the study’s overall theoretical framework is also derived from two foci of past adult education research: emotions and disabilities.

Emotions can have both positive and negative effects on student learning. Because it can be such a strong emotional experience, CA may seem like an uncontrollable, almost randomly happening element of learning for those it afflicts. Even so, extreme emotions related to CA are able to be lucidly described, measured, and treated. For the purpose of the current study, CA disturbance is described in terms of Sutton and Wheatley’s (2003) five components of emotions, McCroskey and Beatty’s (2000) concept of communibiology, and Dirkx (2008), Kasworm (2008), and Isserlis’s (2008) triad of in-class causes of emotional changes in adult learners. The measurability of CA emotions is examined through McCroskey (1970), Richmond (1973), Christophel (1990), and McCroskey and Richmond’s (1996) combined efforts on psychometric scales related to the social phobia. Treatment of CA is explained through Buss’s (1980) and Daly and Hailey’s (1980) conceptualization of situational causes of emotional change as well extensive research on systematic desensitization, most notably by McCroskey (1970) and colleagues.

BSD is marked by swings in emotions so severe that it is considered a disability. As with CA, people with BSD can be perplexed by the excessive nature of their emotions. Even so, as a disability, people with BSD should receive special attention from the field of adult education. In the current study, BSD is framed as a medical condition
existing in a world permeated by a vast culture of ableism (Campbell, 2001). Despite the seeming omnipresence of ableism, adult education manages to apply a technical rational approach in helping people with BSD and other disabilities (Rocco, 2011). This technical rational approach is highlighted by Brookfield’s (2011) prescribed methods of symptom alleviation as well as teaching strategies for adult learners with disabilities offered by Hong et al. (2007), Wehmeyer (2001), Greenwood, Delaquadri, and Hall (1984), and Rocco and Fornes (2010).

**Emotions in Adult Education and Higher Learning**

At the root of CA is an unusual disruption in the emotions a person feels about speaking with others. Indeed, adults’ emotions play considerable roles in their learning (Brookfield, 1986). Kring et al. (2010, p. G) define emotion as “The expression, experience, and physiology that guide responses to problems and challenges in the environment.” However, for adult students with high CA, expression, experience, and physiology of anxiety are extreme and can interfere with learning. Adult education literature on the issue of emotion focuses on at least four issues relevant to the study of CA: (1) conceptualizations of emotion, (2) causes of emotional changes in adult higher education students, (3) value assessments of emotions in adult education, and (4) emotional intelligence of adult learners.

**Conceptualizations of Emotion**

Emotions are made up of five interdependent components: appraisal, physiological changes, affect expressions, action tendencies, and subjective experiences
Beyond this study, Sutton and Wheatley’s conceptualization is used and cited in research on emotions related to educator-student relationships (Jiang et al., 2016), different teaching methods (Timoštšuk, Kikas, & Normak, 2016), course content (Borrachero et al., 2014), professional development (Scott & Sutton, 2014), and classroom aggression (Jaleel & Verghis, 2017). This section begins by further defining Sutton and Wheatley’s five components of emotions. The section then explains how these five components of emotions are related to CA.

**Defining the five components of emotions.**

At the outset of experiences causing potential emotional changes, adults travel through appraisal, “some transaction in terms of its significance or relevance for the individual’s motives, goals, or concerns” (Sutton & Wheatley, 2003, p. 329). Significance is appraised in three ways. First, adults become emotionally involved in experiences that are relevant to their personal goals. Second, adults engage in experiences garnering positive emotional outcomes. Finally, adults appraise emotional changes in terms of positive and negative effects upon their relationships with others. When experiences are deemed significant, adults are willing to travel further into Sutton and Wheatley’s next four phases. However, when experiences are judged to be less significant, adults are likely to remove themselves from further involvement. This final component of emotion, appraisal, helps explain the conflict experienced by an adult learner with high CA; he or she can feel participation in public speaking (as a part of completing a class) is highly significant yet also believe that feelings of stress outweigh the importance of completing
these types of assignments.

Upon entrance into emotionally charged experiences, adults undergo physiological changes in their bodies. For example, when engaging in happy emotional experiences adults’ bodies will usually produce endorphins. During stressful or dangerous moments, adults’ bodies will typically produce the hormone cortisol. Physiological changes in adults’ bodies lead to alterations in affect expressions. Affect expressions are outward displays of emotion. For instance, adults undergoing positive physiological changes may laugh, smile, and become more talkative. However, adults experiencing negative emotions and physiological changes may cry, frown, or become verbally aggressive.

Action tendencies involve the ways adults typically behave when encountering repeatedly similar emotional experiences. For example, most adults enjoy humor. When encountering someone who makes them laugh, adults will find significance in that person’s presence. While in the presence of this humorous person, adults will enjoy positive physiological changes in their bodies, e.g., increases in endorphin levels. These adults will also almost assuredly display happy affect expressions, e.g., laughing and smiling. Because the emotional outcomes of these interactions are so enjoyable adults will tend to behave in ways that ensure further encounters with the humorous person.

Although action tendencies are often predictable (after all, who doesn’t enjoy being around someone who makes them laugh?), emotional experiences are always subjective. What is humorous to one group of adults may be perceived as impolite and crude by another set of adults. Experiences that are stressful and agonizing to some
people can be seen as routine by others. In short, differences in appraisal and physiology can lead to radically different action tendencies by adults. CA is a type of emotional experience that leads to a variation of subjective action tendencies in adults. Moreover, BSD is a psychopathology delineated by extreme mood states such as mania and major depressive episodes. For this reason, the current study looks to investigate the relationship between these two types of emotional unbalance in students.

The five components of emotions in relation to communication apprehension.

CA is an emotional experience causing affected adults to struggle with speaking in front of audiences. Adults with high CA travel through Sutton and Wheatley’s five-point pathway of emotions differently than do adults with moderate and low CA. Beatty and McCroskey explain differences in CA emotions by way of communibiology, a field stressing “neurobiological foundations of human communication behavior” (Heisel, McCroskey, & Richmond, 1999). Communibiology is grounded in Gray’s (1981) biological theory of temperament and Eysenck and Eysenck’s (1985) theory of personality. While the field of communibiology grows from research started in the 1980s, it continues to be a framework used in studying and writing about a variety of communication phenomena beyond CA including aggressive speech (Pascual-Ferrá, 2016), humor (Ramsey, 2016), listening (Fletcher, 2016), foreign language acquisition (Rimkeeratikul, 2016), and and familial relationships (Horstman et al., 2016).

Furthermore, Gray’s theory of temperament continues to inform a host of research on topics such as depression (Sherman et al., 2016), sleeping habits (Bullock et al., 2017),
suicide prevention (Gandhi et al., 2016), and rates of physical activity (Wilson & Dishman, 2015). Eysenck and Eysenck’s conceptualization of personality continues to inform research on topics such as impulsivity (Zuckerman & Glicksohn, 2016), organizational communication (Smibert & Fleming, 2017), and addiction (Kaur, 2016).

**Emotion, appraisal, and communication apprehension.**

Adults with high CA appraise emotions related to public speaking differently than adults with moderate and low CA. Gray (1991) proposes that emotions and behaviors are influenced by the Behavioral Activation System (BAS) and the Behavioral Inhibition System (BIS). The BAS houses people’s responsiveness to rewards and willingness to approach new situations. The BAS “includes the basal ganglia, the neocortical areas that connect to it, the dopaminergic fibers that ascend from the midbrain, and the thalamic nuclei” (Beatty, McCroskey, & Heisel, 1998, p. 210). BIS is the center of people’s motivation to avoid negative emotional experiences. The BIS is a “set of neurological circuits linking the structures related to the hippocampus, the subiculum, and septum” (1998, p. 206). While every human has a BAS and BIS, the systems function differently from person to person.

Some adults appraise emotional changes related to public speaking in a positive manner. Adults in this group are driven to find connections between their personal goals and public speaking. They view public speaking as an activity that garners positive emotional outcomes and can have beneficial influence on their relationships with others. According to Gray’s model, adults appraising public speaking in positive ways have more
active BAS; they are predisposed to see rewards in public speaking. Adults in this group also have less sensitive BIS; they are less driven to avoid negative emotions such as embarrassment that can accompany public speaking.

Other adults appraise public speaking as a task divergent from their goals, desired emotional outcomes, and personal relationships. Adults in this apprehensive group have less active BAS; they do not view public speaking as a rewarding experience. They also have more sensitive BIS; avoiding negative emotional experiences such as embarrassment takes precedent over engaging in public speaking. In order for apprehensive adults to improve their appraisal of public speaking they must perceive increased rewards and lowered potential or degrees of negative emotional outcomes. The problem for adults with high CA is apparent. At times, adults with high CA must engage in public speaking when their appraisal is telling them to stop and disengage from the task. This feeling of being forced into public speaking will almost assuredly create noticeable physiological changes in speakers with high CA.

Emotion, physiological change, and communication apprehension.

When speaking in public, adults with high CA experience physiological changes that are more intense than adults with moderate or low CA. These physiological changes are seen in two areas: limbic system functioning and structures of the brain related to attention.

Limbic system functioning and communication apprehension.

The limbic system is at the center of the human brain. Composed of the
hippocampus, olfactory cortex, cingulate, subcallosal gyri, hypothalamus, septum, amygdala, epithalamus, anterior thalamic nuclei, and basal ganglia, the limbic system influences an array of human behaviors and bodily functionings (Ropper & Samuels, 2005). Heart rate, attention, long-term memory, and response to reward and fear are all impacted by portions of the limbic system. Of primary importance in the activation of CA, “[T]he limbic system has all of the connections that are necessary to bidirectionally mix [sic] the cognitive aspects of emotions (i.e., via neocortical connections) with the more autonomic, physiological, or motor aspects of emotion (i.e. hypothalamic and brainstem connections)” (Steinmetz, 1994, pp. 28-29). Differences in limbic system sensitivities are seen as early as childhood (Kagan, Reznick, & Sidman, 1988; Kagan & Sidman, 1991). Variations in limbic system arousal are due to individual differences in the brain’s “sensitivity of neurons’ postsynaptic receptors or sensitivity in their synaptic transmission, the amount of neurotransmitters being released, (and) the reactivity of the neural structures (including receptors) to different kinds of stimuli” (Strelau, 1994, p. 135). In other words, some people are born with brain structures predisposing them to having high CA.

Increases in heart rate are affected by the limbic system. The heart rate of virtually all public speakers will increase to some degree regardless of their level of self-reported CA (Beatty, McCroskey & Heisel, 1998). However, Beidel, Turner, and Dancu (1985) find that increases in heart rate, i.e., limbic system functioning, are significantly higher in speakers with high self-reported CA. These findings are
corroborated by Booth-Butterfield (1987). Following a similar method of investigation, Beatty and Behnke (1991) find that people with high levels of self-reported CA endure significantly increased heart rates during low-pressure communication situations. At the same time, adults with low self-reported CA experience minimal increases in heart rate during low-pressure communication situations. Myers (1976) concludes that simply visualizing themselves speaking in public can increase heart rates of highly apprehensive adults. In conjunction with increased heart rate, the tympanic temperature of adults with high CA is significantly higher before and during their public speaking (Behnke, Beatty, and Dabbs, 1982).

Structures of the brain related to attention and communication apprehension.

Structures of the brain related to attention are linked to speakers’ levels of CA. Specifically, the anterior attention network, that is comprised of the anterior cingulate, amygdala, cortex, midprefrontal cortex, and cingulate gyrus, controls selective attention (Posner, 1990; Posner & Peterson, 1990; Posner & Presti, 1987; Vogt, Finch, & Olsen, 1992). Individual differences in style of attention, as guided by the anterior attention network, are evident in infancy (Nelson, 1994). People prone to anxiety selectively attend to the negative aspects of situations (Mathews, 1990). Moreover, anxious individuals find it difficult to move their attention away from the negative features of communication (MacLeod & Mathews, 1988). Because “the neural structures that are likely to play important roles in determining emotions of temperament are also involved in learning and memory processing” (Steinmetz, 1994, p. 35), anxious individuals
experience CA, in part, because of the way their brains remember past experience. Speakers whose brains focus on the negative aspects of communication view new speaking opportunities as not worth the risk compared to the perceived threat. This reasoning is why apprehensive communicators have higher expectations of failure (Beatty, 1988), being disliked by their audiences (Smith & Sarason, 1975), being judged harshly by strangers (Booth-Butterfield, 1988), looking incompetent (Daly et al., 1989), and being inferior to their audience members (Beatty, 1988).

Recall of information is connected to the emotions people have about communication. Davis (1992) finds that experiences occurring at times of high anxiety are recalled with more detail than those happening with low anxiety. Therefore, because apprehensive adults incur greater numbers of high anxiety communication experiences, they also have a larger, more vivid array of bad experiences to connect with public speaking. With these gluts of bad experiences in place, adults with high CA expect their attempts at speaking to fail. Gray (1991) ties this projection of failure to the septohippocampal system, a part of the human brain that allows people to perpetually judge events going on around them. An overly sensitive septohippocampal system essentially trumps what is really going on in apprehensive communicators’ environments. Partly due to their septohippocampal systems, speakers with high CA misjudge the level of apprehension that should be reasonably attached to public speaking situations. Adults with high CA actually begin feeling anxious about speaking events earlier than their non-apprehensive counterparts (Beatty, Behnke, & McCallum, 1978). Physiological
changes affected by limbic system functioning and structures of the brain related to memory culminate in affect expression changes.

**Emotion, affect expression change, and communication apprehension.**

When speaking in public, adults with low and moderate CA display less negative affect expression changes than adults with high CA. These negative affect changes are so distinct as to be consistently measurable. Behavioral Assessment of Speech Anxiety (BASA) measures and describes anxious speakers’ performances. BASA uses a 10-point rating scale on 18 variables related to public speaking anxiety. During its application, observers look at four behaviors denoting CA. These four behaviors are rigidity, inhibition, disfluency, and agitation (Mulac & Sherman, 1974). Rigidity is the degree speakers comfortably and naturally alter gestures, facial expressions, and posture in ways that complement their words. Inhibition is marked by a lack of positive engagement and emotion as indicated by monotone speaking, avoidance of eye contact, and deficits of affect displays. Disfluency is the measure of how often speakers stumble over their words; it includes filled pauses, the “uh”s and “um”s that are a hallmark of apprehensive speaking. Disfluency also includes moments when speakers lose their place, backtrack, or speak in manners that make listening difficult for audiences, e.g., rate of speech, enunciation, and volume. Agitation is the depth of negative emotions projected by speakers. Agitation is evident in terseness of voice and angry or annoyed facial expressions (Mulac & Sherman, 1974).

Observers using BASA are able to consistently describe speakers’ outward CA
(alpha = .95). Speakers with high CA display greater rigidity than adults with low CA. They appear tense and physically uncomfortable in comparison to their unapprehensive counterparts. Speakers with high CA are also more inhibited. They tend to speak in monotone voices while avoiding eye contact. Speakers with elevated CA also engage in more frequent disfluencies. They are more likely to stumble over their words and lose their places during speeches. Finally, speakers with high CA are more likely to appear agitated when standing in front of audiences. As speakers with high CA produce consistent affect expression changes, their action tendencies and subjective interpretations concerning public speaking also become hindered.

Emotion, action tendencies, subjective experiences, and communication apprehension.

Adults with high CA form action tendencies and subjective interpretations of public speaking that are different from adults with low and moderate CA. These action tendencies and subjective experiences can be so intense that they make up parts of apprehensive adults personalities. Eysenck and Eysenck (1985) suggest that personality can be described using three primary constructs: extroversion, neuroticism, and psychoticism. Extroverts are outgoing, assertive, straightforward, gregarious, and sociable. Introverts are quiet, reserved, and less interested in socialization. Neuroticism is the measurement of people’s negative emotions. Neurotic people may frequently feel depressed, anxious, angry, or guilty. Psychoticism is noted by patterns of aggressiveness in people. Psychotic people experience frequent contention and unrest in their social
interactions.

Degrees of extroversion, neuroticism, and psychoticism exist on continuums. For instance, some people are highly extroverted and minimally neurotic and psychotic. Other people are introverted, neurotic, and psychotic. Many adults fall somewhere in the middle of these two poles, with moderate degrees of extroversion, neuroticism, and psychoticism. Furthermore, adults’ extroversion, neuroticism, and psychoticism, while generally consistent, are not completely static. For example, extroverted adults can still become introverted in some situations, such as public speaking. Empirical research suggests that 80% of these personality constructs are attributable to genetic inheritance while environment contributes to the formation of the other 20% (Eysenck & Eysenck, 1985).

Working from Eysenck and Eysenck’s model of temperament, Beatty, McCroskey, and Heisel (1998) posit CA is a personality trait combining introversion and neuroticism. The most apprehensive communicators keep to themselves, feel negative emotions when required to speak, and avoid speaking whenever possible. Numerous studies uncover correlations between CA, introversion, and neuroticism. Eysenck believes that introversion is defined by nine traits: sociability, liveliness, activeness, assertiveness, sensation-seeking, carefree, dominance, surgency, and adventureness. Negative correlations are seen between CA and surgency (-.52), adventurousness (-.54), dominance (-.33) (McCroskey, Daly, & Sorensen 1976), sociability (-.59) (Daly, 1978), and assertiveness (-.70) (McCroskey et al., 1985). Eysenck also proposes nine traits of
neuroticism: anxiousness, depression, guilt, low self-esteem, tension, shyness, irrationality, moodiness, and excessive emotions. Correlations are found between CA and anxiousness (.50, 1976), emotional maturity (-.33, 1976), self-esteem (-.52) (McCroskey et al., 1977), tension (Daly, 1978), and irrationality (.82) (Beatty, 1988). In sum, CA is a complex phenomenon that can be attributed to a wide array of personality traits.

Causes of Emotional Changes in Adult Higher Education Students

Emotional changes of adult students in higher education are influenced by three factors. These factors include: (1) in-class causes of emotional changes, (2) the hopes that adults have for their formal educations, and (3) effects of lacking academic preparedness. This section explores these three factors while concluding with a discussion of how emotional change from CA is measured.

In-class causes of emotional change.

Dirkx (2008) recognizes three in-class causes of emotional change for adult higher education students. First, emotions are influenced by adult students’ interpersonal relationships. For example, adult students’ may form energizing bonds or senses of camaraderie with faculty and other students. At the same time, “some learners might find the behaviors of faculty and students annoying in some way, and the behaviors gradually wear on them over time. Their feelings may then surprisingly erupt in powerful ways within the learning group, such as verbal attack on the individual or indirectly on the teacher” (pp. 9-10). Second, formal evaluations can cause emotional stirrings in adult learners. Dirkx explains, “Learning tasks and anticipation of being evaluated often
precipitate emotional reactions among learners. They may feel anxious about doing well on a test, fear failure, or perceive themselves as unable to meet expectations. At times, the structure of the learning experience itself can foster various emotional reactions among students” (p. 10). While receiving high marks on required assignments can foster positive emotions in adult students, lower assessments or criticisms can create the opposite effect. Lastly, the actual content of learning can have positive or negative repercussions upon the emotions of adult students. Adult students may approach learning experiences related to attainment of fun skills with more positive affect than if they are attending classes about depressing topics. This is a serious consideration for those teaching in higher education because “examples included in the curriculum might bring to life for some learners painful or joyful experiences. A teacher may precipitate affect-laden memories of earlier instructors or mentors or of one’s parents” (p. 10).

**The hopes that adult students have for their formal educations.**

Kasworm (2008) suggests the pursuit of higher education by adults is laden with different moments of hope. These moments of hope present adults with opportunities to experience positive and negative emotions. The first act of hope by adult students occurs at their time of entry into higher education. Kasworm explains that while “these individuals typically have a sense of mission and purpose and often a long-term plan for their collegiate pursuits, they experience doubts and insecurity. They may face challenges negotiating institutional procedures, the time commitments and demands of the coursework, and the ego demands of classroom assessment” (p. 28). Beyond navigation
of their institutions, Kasworm proposes that a second issue plays a more disconcerting role in emotions adults feel upon entry into higher education. Adults “often seek college entry through a life crisis, such as a divorce or a separation, work issues, or some form of significant individual need, such as seeking a career with financial stability...[and]...display emotional chaos as they develop a student identity” (p. 28).

From lacking support or resources, adult students can enter higher education at a time when they are not on stable footholds. For these adults, higher learning can center on adaptation and survival as much as it does on educational content.

Kasworm recognizes adult students’ second act of hope as wanting continued engagement in the higher education setting. In some ways, adult students have an advantage over their younger counterparts. Researchers note that “Older students have a clearer sense of their objectives for going to college, they know how to navigate the educational bureaucracy, and they are generally not as shy about asking for help or demanding service. Older students are less easily discouraged or thrown off course, even though they often have more outside pressure and obligations than do younger students” (Calcagnoa et al., 2006, pp. 23-24). Furthermore, “Older people relative to their younger counterparts describe their futures as limited and recognize that they do not have ‘all the time in the world’ left to pursue their goals” (Carstensen, Isaacowitz, & Charles, 1999, p. 168). This leaves adult students in a position of simultaneous “emotional resilience and emotional vulnerability” (p. 30); they are driven to succeed academically yet placed under the stress of balancing institutional, professional, and family lives.
Kasworm, Polson, and Fishback (2002) propose that classrooms connecting the adult students’ academic and personal lives is key to their emotional homeostasis. Faculty members are seen as having an important role in the validation of adults and their classroom experiences (Graham and Donaldson, 1999; Kasworm, Polson, & Fishback, 2002).

Kasworm (2008) describes adult learners’ third hope as “engagement in learning new knowledge, as well as new perspectives and potentially new beliefs” (p. 30). Within this third hope is a potential challenge for adult learners; they are expected to “learn discipline content and skill yet engage in learning through their past and current adult roles, not typically through the discipline perspective” (p. 30). Adult learners navigate diametric pairs of epistemologies by way of five knowledge voices (Kasworm, 2003). These knowledge voices allow adult students to make meaning of their places in higher education. Knowledge voices describe adult students’ basic values about professors, classroom activities, evaluation strategies, and higher education communities.

The entry voice of adult learners marks their initial contacts with higher education. Adult students functioning from the entry voice revere academic knowledge, professors, and receiving positive feedback on clearly evaluated methods of assessment. The second knowledge voice comes from the outside of the academy. Adult students adhering to this voice search for academic validation from sources such as employers and family; they are seeking connections between schoolwork and their lives away from school. The third knowledge voice, the cynic, is critical of higher education. When
functioning from this knowledge voice, adults question the worth of higher education. Cynics find class participation nonvoluntary, desire isolation during activities, view professors as the sole maintainer of classroom politeness, and question the relevance of learning communities and assessment.

The straddling voice represents a change in adult students’ perceptions of higher education. This voice marks students’ moving away from being cynical and instead finding value in both academic and non-academic knowledge. Adult students working from the straddling voice see benefits in their non-academic lives as deriving from academic enrollment, and vice versa. The final knowledge voice is that of inclusion. Adult students reaching the voice of inclusion gain a truly deep appreciation for their academic fields. Inclusive adult students develop multiple worldviews, engage faculty as mentors, explore theory and research, and become concerned with their fields’ future continuance.

The final act of hope for adult students concerns their “gaining a place, a position, a voice, and a related sense of valued self in the cultural worlds of higher education” (Kasworm, 2008, p. 32). Adult students arrive to the doorsteps of higher education with sets of life experiences that are typically broader and deeper than their traditional student counterparts. Despite their being different, adult students can gain senses of value and belonging from others around them. Whether talking with younger students in classes, navigating institutional bureaucracies, or meeting with professors, adult students are bombarded with acceptance cues. These acceptance cues can understandably trigger
positive emotions. However, when these cues do not convey acceptance, value, or belonging, adult students may experience negative emotions.

**Lacking academic preparedness.**

Adult students can arrive into formal education with a lack of academic preparedness. This lack of preparation is often attributable to histories of violence or personal upheaval (Isserlis, 2008). These past life experiences can lead adult students to unhealthy coping strategies, including “an all or nothing approach to learning and relationships, a lack of presence, living in crisis mode, issues with trust and boundaries and silences and disclosures” (Morrish, Horsman, & Hofer, 2002, p. 15). In order to help students with emotional disruptions, researchers focus attention on uncovering reasons for attrition, causes of retention, and methods of managing both from the outset of their enrollments (Comings, 2007; Malicky et al., 1997). While such inquiries serve a noble purpose, Isserlis (2008, p. 22) contends that “these processes, along with requisite support and professional development, can aid practitioners in finding ways to engage learners at their points of readiness. But they run the risk of becoming little more than lists of component elements to be checked off, indicating that a student has been through some intake and goal-setting process.” Therefore, Isserlis (2008, p. 22) suggests that educators must go beyond “officially sanctioned or measurable” programs that “often fail to recognize smaller and more meaningful goals.” Beyond recognizing achieved incremental goals, adult educators must help students “who have experienced systemic violence, including poverty, racism, and a range of disabilities leading to multiple
incidents of failure at school...[and]...may need assistance in finding a middle ground, identifying and negotiating small steps to achieving goals, and, especially, understanding that one or even several errors along the way do not mean that nothing can be learned or that the learner is stupid” (p. 23).

Strengths-based approaches to the emotional constructs of adult learning must be mindfully crafted. Isserlis suggests that tutoring and assignments should be fashioned in ways that do not mandate revelations from students about personally painful issues. Furthermore, adult educators should avoid medicalizing students’ emotional undulations, e.g., telling him or her to return to class when feeling better. Such statements present adult students with cues insinuating that they need to simply “get over it,” a potentially unfeasible act adults carrying emotional scars from traumatic experiences. At the same time, adult educators should help students define what is realistically possible given their current emotional states.

**Measuring emotional change in communication apprehension.**

When speaking in front of their fellow classmates and instructors, adult students will often experience emotional changes. These changes in emotion may arise from the nature of graded speech assignments. For example, students may feel anxious because their speeches are required and closely graded by instructors. Students may hope for success on graded speeches but feel academically unprepared to successfully meet the task head on. These emotional changes are potentially so strong as to be quantifiably measurable.
Throughout its history, the study of CA takes on three notable methods of investigation: observer rating, physiological measurement of brain and limbic system functioning, and self-reported indexes. Although each of these methods attempts to describe CA, they actually measure different facets of the social phobia. Observer rating has trained experts assess speakers on the number of instances they display discomfort, e.g., using BASA or counting the number of times speakers stumble over their words and say “um” or “uh.” The primary shortcoming of observer rating is that it only describes what nervous speakers look like; it does not ask speakers why they are nervous or how anxious they feel. Physiological measurement of limbic system functioning involves trained experts monitoring the heart rate of public speakers. While heart rate increases are commonly associated with anxiety, limbic system monitoring, like observer rating, fails to ask speakers about the causes of their anxiety. Limbic system monitoring also requires extensive use of expensive medical devices that take a lot of time to set up. Therefore, self-reported scales are the most frequently incorporated means of assessing CA in formal research.

The Beck Anxiety Inventory (BAI) is perhaps the most well-known, often utilized self-report scale for measuring anxiety (Beck & Steer, 1993). The BAI is a multiple choice survey that asks participants to rank themselves in 21 areas. Each of the 21 questions denotes a common symptom of anxiety, such as having feelings of dread, numbness, or trouble breathing. All 21 questions are answered using the same four descriptors: not at all, mildly, moderately, and severely. Those taking BAI will score
between 0 and 63, with higher scores indicating increased levels of anxiety. BAI does not rely on observation of participant behaviors by trained professionals. Although it may be interpreted and explained to participants as a part of treatment for their anxiety, BAI can be completed individually.

Scales can measure trait and state CA. Some of these scales are singular in nature and not intended to have their directions altered in any way, e.g., Personal Report of Public Speaking Anxiety (PRPSA) (McCroskey, 1970). Others, such as the Situational Communication Apprehension Measure (SCAM) (Richmond, 1978), Student Motivation Scale (SMS) (Rubin, Palmgreen, & Sypher, 2004; Christophel, 1990; Richmond, 1990), and Generalized Belief Measure (GBM) (McCroskey & Richmond, 1996), allow investigators to alter wording of the device to reflect a specific context. It is worth noting that a wide array of other apprehension measures exist. Personal Report of Communication Apprehension (PRCA) (McCroskey, 1982; McCroskey, Beatty, Kearney, & Plax, 1985; Richmond & McCroskey, 1985), Personal Report of Intercultural Communication Apprehension (Neuliup & McCroskey, 1997), Singing Apprehension (Andersen, Andersen, & Garrison, 1978), Touch Apprehension (Richmond & McCroskey, 2004), and Teacher Apprehension (Richmond, Wrench, & Gorham, 2001), while not directly relevant to the current study, suggest a robust and interesting gathering of investigated phenomena.

For the most part, the structure of these scales are similar to one another. Each self-report device uses a Likert-type scale, focus of statements, and definition of CA.
Each makes use of statements about participants’ communication behaviors, feelings, and/or perceptions. Participants read statements then rate how they feel each applies to or describes their CA. After participants grade themselves on each statement they enter recorded scores into a mathematical formula. This formula provides participants with a personal score for that particular self-report scale. Depending on their score on a given scale, participants will be judged as having a high, medium, or low amount of CA. All of these scales are designed and intended to be completed by participants without great assistance from researchers. None of the scales use open-ended questions and all have demonstrated statistical reliability and dependability. Due to their fluid nature, SCAM, SMS, and GBM must have validity and reliability tested for each rendering of the device. Even so, past application of these devices meet with statistical solidity. A detailed explanation of SCAM and PRPSA, the two self-rate devices used in the current study, is offered in the methodology chapter.

It is important to note, historical information on CA making up the background of the current study may seem dated. Indeed, because CA is such a hindrance to effective public speaking, much effort and many years have been spent on its investigation. In many ways, CA is the problem instructors of public speaking classes deal with when helping their students. Some of the psychometric devices used in the current study are decades old. Furthermore, the methods used for effectively treating CA are also long known. The dates assigned to the origins of CA’s study should not be interpreted as a dead end of academic inquiry. In fact, the the self-report devices used in the current
study have a long, rich, and currently active role in CA research.

While researchers of the topic have a standing grasp on how to describe the concepts of CA, they continue to apply devices such as the PRPSA, SCAM, SMS, and GBM in new and ever expanding ways. For example, the PRPSA is used in recent studies related to general education reform (Hunter, Westwick, & Haleta, 2014), distance learning (Altemose, 2006; Bailey, 2015), learner patterns of text organization (Zink, 2000), and English as a foreign language instruction (Hsu, 2012). SCAM is recently used as the basis for a new assessment model of student readiness for online learning (Miller, 2014) while SMS is seen extensively in investigation of gender differences in learning (McCroskey, Richmond, & Bennett, 2006). GBM is seen widely in organizational communication research (McCroskey, McCroskey, & Richmond. 2005; McCroskey et al., 2004; Richmond & McCroskey, 2000; Teven, McCroskey, & Richmond, 2006). In short, while the study of CA is old, its methods of inquiry continue to be applied in current research.

**Value Assessments of Emotions in Adult Education**

While emotions of students can change due to a number of elements within their learning contexts, the values of such fluctuations are viewed differently by adult educators. This section looks at two issues. First, the section explains the three value perspectives the field of adult education places on the roles of emotions in learning. The section then describes how students’ values about public speaking affect their CA.

*Adult education’s three values of emotions.*
To some adult educators, emotions act as a hindrance to learning. Under this viewpoint, due to “the widespread influence of the enlightenment and the growth of scientific ways of knowing, emotions have for many years been regarded as largely undesirable within teaching and learning settings, that is, as obstacles to reason and the development of knowledge. Many educators still regard their manifestation within the learning process as a distinctly negative development, and they seek ways to avoid or mitigate their expression” (Dirkx, 2008, p. 11). Extreme changes in affective state, whether positive or negative, can signal a hurdle to learning. For instance, adults who are very sad, angry, or bubbling over with enthusiasm may see their learning curtailed due to the distractions caused by these emotions.

However, other adult educators do not view changes in emotions as inherently cumbersome to learning. This is not to suggest that these adult educators fully embrace the role emotional changes play during learning. Instead, emotional expressions offer intermittent relief from potential stressors related to learning. At best, emotional outpourings during learning, whether positive or negative for adults, signal an opportunity for involved parties to relieve internalized stress (Dirkx & Spurgin, 1992). This relief allows for subsequent learning to resume without disruption. For example, when educators know their students are under duress about an upcoming assignment they may make jokes or engage in light conversations to help ease the mood. Once these moments of emotional purging take place, members of the class can return to their learning tasks with clearer, more relaxed mindsets.
More recently, the field of adult education looks at emotions as an element of learning that should neither be avoided nor minimized. Instead, emotions are conceived as having “considerable effect on the way we think, on motivation and on beliefs, attitudes and values” (Jarvis, 2006, p. 102). At the root of this approach is a dichotomous discussion about the fundamental nature of emotions. First, emotions are understood to be physiological responses to environmental stimuli. That is, when adults encounter stressors (positive or negative) their bodies, affect displays, and cognitions undergo observable and knowable changes (Jarvis, 2006). While these physiological and cognitive responses may be involuntary, adults are not destined to endure lives where external stimuli wreak ongoing havoc (Watson & Rayner, 1920). Instead, contemporary “cognitive theorists … allow that emotional behavior remains an essentially physiological response to external stimuli but is often mediated by processes of judgment and assessment or appraisal” (Dirkx, 2008).

Second, emotions are socially constructed phenomena, “always experienced, understood, and named via social and cultural processes” (Lupton, 1998, p. 15). Adults will experience certain emotions because they have learned to do so from previous interactions with other people. These emotions will also be interpreted based upon adults’ previous experiences and interactions. While these two approaches are often studied separately, the field of adult education carries “an understanding of emotion as a neuropsychological response to an external or internal stimulus, occurring within and rendered meaningful through a particular sociocultural context and discourse” (Dirkx,
Student values and communication apprehension.

The values students hold about public speaking will influence their corresponding CA. These values are socially and personally constructed. While each individual will maintain his or her own set of unique values, overall, these values derive from two socially constructed factors. These two factors are the speakers’ relationship with their audiences and their topics.

Indeed, public speakers may hold certain values about their relationships with audience members and topics of address. These values can in turn lead speakers to have high, medium, or low levels of CA. Buss (1980) suggests that public speaking situations carry seven characteristics that can potentially lead to CA. Each of these characteristics relates to the speaker’s relationship with either the audience or the topic. These seven situational characteristics are: novelty, unfamiliarity, formality, subordinate status, conspicuousness, dissimilarity, and intensity of attention. Daly and Hailey (1980) add two more characteristics of public speaking to Buss’s original list of seven: degree of evaluation and prior history.

Buss’s seven situational characteristics of communication apprehension.

Novel communication is a type of address that is new to speakers. A sense of newness causes speakers to feel CA because they have never previously encountered a particular form of public speaking. For instance, speakers may feel CA from novelty when giving a toast at a wedding or delivering a persuasive presentation, if they have
never completed these types of address. Conversely, speakers having knowledge about a
given form of public speaking will experience less CA from novelty.

Unfamiliarity can lead to CA in two ways. First, speakers can feel CA from
unfamiliarity when they do not know or have a personal connection with members of
their audiences. In other words, when they are speaking to audiences made up of
strangers. Second, speakers can experience CA from unfamiliarity when they know little
or nothing about their topics of address. For example, CA from unfamiliarity with topic
of address can occur when speakers do not have time to research information on what
they would like to say to their audiences. A single speaker can simultaneously experience
CA from unfamiliarity with his or her audience and topic of address. Or, he or she may
only feel CA from unfamiliarity with audience members or unfamiliarity with his or her
topic.

Formality of communication concerns the number of and expected adherence to
public speaking rules. Public speaking rules include issues such as speaker adherence to
grammar, topic selection, length of speaking time, visual aid use, depth of academic
research, use of formal references, and specific organizational patterns, Some public
speaking is informal and has few loosely attached rules. Informal public speaking could
include speakers telling friends or coworkers about lighthearted topics such as what they
did over the weekend. At other times, public speaking is highly formal. For example,
when instructors mandate that speeches in their classes meet a long list of specific
criteria, e.g., time, number of references, topic, organization, form of outline, and use of
visual aids, students may feel more anxious than if allowed to speak casually with a less stringent set of rules.

Having subordinate status to audiences involves speakers being of lower ranking or power. Subordinate status can arise from a title or position of lower status that is formally or informally placed upon speakers. For example, students may experience this type of CA simply by feeling subordinate to their instructors.

Conspicuous communication involves speakers being clearly and readily visible to audiences. At times, nervous speakers will turn lights down in rooms, stand behind computers, and read from transcripts as their audiences look primarily at series of projected images on screens. With the increasing use of presentation software such as PowerPoint, this type of inconspicuous address is actually the norm for many speakers. However, when speakers stand alone in front of audiences, with lights up and no distracting visual aids around, they are speaking in a conspicuous context.

Dissimilarity is the degree speakers feel they are unlike their audiences. Speakers can be familiar with their audiences yet feel CA from dissimilarity. For example, a sense of dissimilarity can arise from speakers feeling they are unlike their audiences in terms of age, gender, financial background, political leanings, or religious beliefs. Students with BSD who are speaking about their having the illness to audiences of people who do not have the psychopathology may experience CA from a sense of dissimilarity.

Finally, intensity of attention is the depth audiences focus their minds upon speakers’ words and nonverbal actions. At times, audiences will not pay particularly close
attention to every detail of speakers’ words and actions. In such cases, CA from intensity of attention can be low. However, CA from intensity of attention rises when speakers perceive audiences as closely watching and remembering their every utterance and movement.

Daly and Hailey’s two situational characteristics of communication apprehension.

The first characteristic, degree of evaluation, concerns judgments of speakers by their audiences. In some cases, speakers’ audiences do not judge them very harshly, or, such judgments do not carry significant repercussions. For this type of situation, in which degrees of evaluation are low, audiences’ positions as critics do not foster apprehension in speakers. At other times, audiences, or single audience members, hold the position of strict and decisive evaluator. In these cases, the intensity of judgment placed upon speakers is overt and potentially harsh. Furthermore, these judgments carry consequence, e.g., grades on classroom speaking assignments given by instructors, that can deeply affect speakers. CA from degree of evaluation is understandably common in college public speaking courses.

The second characteristic, prior history, deals with previous successes or failures speakers have with public address. Speakers succeeding at their past public speaking endeavors are expected to experience lower CA during their addresses than speakers who have not performed well at the task. For example, students receiving positive grades and feedback on speech assignments from instructors are more likely to feel comfortable with
public speaking than are students who receive poor grades and feedback.

**Emotional Intelligence of Adult Learners and Communication Apprehension**

The fundamental goal of research into CA is the creation of new knowledge that can be applied in ways to help people overcome their anxiety. Such is the purpose of the current study. The following two subsections offer a definition of emotional intelligence and explanation of how education is used to help adults with high CA.

**Emotional intelligence defined.**

Goleman (1995, p. 24) states that “emotional intelligence can be as powerful and at times more powerful than IQ.” Salovey and Mayers suggest that emotional intelligence involves four activities: “perceiving emotions, using emotions to facilitate thought, understanding emotions, and managing emotions” (Mayer & Salovey, 1997, as cited by Salovey & Pizzarro, 2003, p. 263). Adults’ emotional intelligence in these areas are measurable through psychometric devices. For example, the client administered Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) measures an adults’ emotional intelligence in four areas: perceiving emotions, using emotions, understanding emotions, and managing emotions (Mayer, Salovey, & Caruso, 2002, 2003). While research indicates that the MSCEIT could benefit from adding more items and subscales, its applicability is supported. The total scale is found to be a reliable device (Palmer et al., 2005) and advocated as the best test of its kind currently available (McEnrue & Groves, 2006). While emotional intelligence is a concept that will see further study, it is suggested that adult educators tread carefully in their application of devices such as the
MSCEIT. As Merriam, Caffarella, and Baumgartner (2007) note, “this concept of intelligence has little empirical evidence to support it as a separate construct of intelligence. Therefore we should not consider emotional intelligence as a given fact, nor design programs that teach others how to develop or use a certain ‘type’ of emotional intelligence” (p. 383).

Two issues related to emotional intelligence are relevant to the current study. First, although the MSCEIT is not used in the study, its presence in the literature indicates that psychometric devices can be used as a reliable means of investigating the emotions of adult learners. Second, the current study may oppose the opinion of Merriam, Caffarella, and Baumgartner (2007). Public speaking classes teach nervous individuals to encounter their CA in thoroughly systematic manners. For example, during systematic desensitization programs, which are discussed in the next subsection, adults learn to quell their CA in a step-by-step outcomes-driven educational sequence that is assessed using quantifiable measures.

**Systematic desensitization and communication apprehension.**

As an emotional experience, CA is manageable. In fact, even extreme CA can be overcome through a number of methods. Adult educators can guide their students through systematic desensitization, a set of learning activities that have been shown to decrease CA. Systematic desensitization is a non-clinical technique of therapy that is used to treat an assortment of anxieties and phobias, including CA (Wolpe, 1990). Although it can be delivered in six forms (group, real-life, automated, self-directed,
contact, and self-control), all systematic desensitization involves three similar steps
(Thyer & Wodarski, 1998; London, 2008). In the first stage, students learn methods of
physical relaxation, e.g., slowed, calm breathing and muscle relaxation. In the second
stage, students and educators collaborate to form lists of progressively more stressful
public speaking tasks. These lists are largely defined by students and can include
variables from Buss’ seven and Daly and Hailey’s two situational characteristics of CA.
In the final stage, students utilize their relaxation skills and deliver actual speeches that
match what is described in their personal lists of progressively more difficult types of
address. The overall goal of systematic desensitization is for students to become
incrementally more comfortable while speaking in situations that contribute to their
unique style of CA. Upon completion of systematic desensitization, students should be
able to maintain a general degree of calmness while in contact with audiences of any size
and speaking for any amount of time.

Systematic desensitization is proficient at reducing CA. Its results “have been
relatively consistent over an extremely wide range of therapists, clients, and problems,
usually producing positive results” (McCroskey, Ralph, & Barrick, 1970, p. 32).
Research in the use of systematic desensitization as a means of lowering CA follows a set
method of study: 1) the investigator(s) administers a self-report psychometric device,
usually the PRCA or PRPSA, to a pool of participants; 2) the investigator(s) applies
treatment in the form of systematic desensitization; and, 3) the investigator(s)
re-administers the psychometric device and looks for statistically significant differences
between treatment and control groups. Nichols (1969) is the first to devise a change index (CI) that is used to judge the effectiveness of systematic desensitization programs. To create this CI “the observed mean change was divided by the distance from the pretest mean to the lowest score possible on the measure” (Berger et al., 1984, p. 46). The best way to understand this index is as follows: Scores over .40 indicate that a significant positive change in speaker apprehension has happened as the result of a treatment; scores around .10 indicate minimal change in speaker apprehension; and, scores around .2 and .3 suggest a moderate change in speaker apprehension.

Initial attempts at CA systematic desensitization are undertaken in clinical environments. Nichols (1969) provides 19 participants with a one-week intensive systematic desensitization. Mean change among participants is 22.1 with a CI of .417. McCroskey and Richmond (1996) garner similar results in a clinically administered systematic desensitization of ten adults. With an age range of 16 to 65, participants of the treatment see a mean change of 28.8 and CI of .481. At the conclusion of both of these studies all but one participant is significantly below the cut-off point for high CA.

In studying students in an introductory speech communication course, Paul (1966) finds that systematic desensitization works better at relieving anxiety than doing psychodynamic therapy. He later concludes that recipients of systematic desensitization are able to maintain its benefits for years following initial application (Paul, 1968). Furthermore, this initial line of research suggests that not only does systematic desensitization work in reducing anxiety, but it does so in a very efficient manner.
Kondas (1967) finds that systematic desensitization delivered in a group format not only succeeds at lowering CA, but can actually work better at attaining this goal than one-on-one sessions. Furthermore, studies demonstrate that systematic desensitization can be successful when applied by what Neuman (1968) refers to as sub-professionals, i.e., people who do not have the full training of a Ph.D. in psychology or counseling.

Kahan and Baker (1968) find that, unlike other modes of therapy, systematic desensitization can be effective with infrequent meetings between students and educators. Furio (1982) indicates that successful systematic desensitization can be completed in as little as three weeks with a mere six hours of contact time. Berger (1984) takes systematic desensitization a step further, finding that groups of students can alleviate CA simply by relaxing and picturing themselves traveling through their hierarchy of triggers (CI=.29). Choi and Honeycutt (2015) support these findings. Carkhuff (1968) summarizes the pragmatic efficiency of systematic desensitization: “A review of (lay training and treatment) programs indicates a) that laypersons can be trained to function at minimally facilitative levels of conditions related to constructive client change in relatively short periods of time … [and] … b) that lay counselors can affect significant constructive change in clients. An inference that we might draw is that whatever allows one individual to help another is not the sole and exclusive province of professional helpers” (p. 117).

Although systematic desensitization is long established as a reliable method of lowering CA, more nuanced research continues to evolve on the treatment. For example,
CA levels are recently investigated in terms of students’ countries of origin (Zimmerman, 1995), cultural backgrounds (Yook, 1999), genders (Behnke & Sawyer, 2000), family histories (Kelly et al., 2002), use of self-directed assessment (Hinton & Kramer, 1998), level of preparation (Carrell & Menzel, 1997), anterior cortex functioning (Beatty et al., 2011), learning styles (Dwyer, 1998), timing of apprehension levels throughout speeches (Behnke & Sawyer, 1999), timing of received feedback (King, Young, & Behnke, 2000), relationships with instructors (Chesebro & McCroskey, 2001), and speech assignment types (Witt & Behnke, 2006). In short, researchers continue to unearth new ways of understanding CA and fine-tuning systematic desensitization by looking at specific cross sections of the general population. However, to date, none of these research cross sections specifically aim to include adult students having the disability BSD.

**Adult Education and Disabilities**

The current study takes places in a formal learning context. Fair access to and participation in formal learning for all people, regardless of their backgrounds, is a driving ideal of adult education; formal learning “is sanctioned by an institution such as a college or by a business that leads to credit or some form of certification or diploma” (Ginsberg & Wlodkowski, 2010, p. 26). However, issues of class, race, and gender often do inhibit students’ participation in formal learning at institutions of higher education. Indeed, only 8% of adults in the United States from low income backgrounds setting out to earn a bachelor’s degree are able to do so within six years; 92% do not succeed (Cook & King, 2004). Funds for professional development, such as employee enrollment in formal
education programs, are more often than not funneled toward the highest paid employees, leaving those making less, sometimes far less, to pay for their educations (Watkins & Marsick, 2009). Because African-Americans and Hispanics make up such a disproportionate segment of the population living in poverty within the United States, participation in higher education by these groups is markedly low (U.S. Department of Labor, 2003). Women, while earning more bachelor’s degrees than men in the United States, are far less likely to earn doctorate degrees in science, technology, engineering and mathematic (STEM) fields (National Science Foundation, [NSF] 2004). A final segment of the adult population, those with disabilities, is a group whose experiences in gaining degrees and certifications through formal education are worthy of study (Albrecht, Seelman, & Bury, 2001; Monaghan, 1998).

Access to formal education can also be exceptionally difficult for students with disabilities. Nearly every step of the way an adult student with a disability may encounter obstacles impeding his or her completion of courses and graduation. Students with disabilities often times feel uncomfortable and unsure about disclosing their statuses to administration and faculty (Daly-Cano, Vaccaro, & Newman, 2015; Beyer, Moore, & Totino, 2016; Lyman et al., 2016). When students with disabilities come forward they may not know how to best communicate their unique academic needs (White et al., 2014; Summers et al., 2014). Some faculty hold negative opinions about students with disabilities (Levey, 2014; Gonzalez & Elliott, 2014). Finally, disabilities studies is an ever expanding field and, despite great efforts, educators continue to uncover newer,
better practices for helping students with disabilities in a variety of learning scenarios
(Schoffstall et al., 2016; Flagg-Williams, Joan, & Bokhorst-Heng, 2016; Schley & Stinson,
2016; Spenceley & Wheeler, 2016; Kelley, Prohn, & Westling, 2016; Richardson, 2016;
Gregg et al., 2016).

Disabilities are complex phenomena involving impairments. These impairments
limit individuals’ inclusion in daily routines that the non-disabled usually take for granted.
Epidemiologically speaking, disabilities are actually very common (Colker, 2005). Nearly
one in seven Americans has a disability (Munger & Mertens, 2011), while less than 15%
of Americans with disabilities are born that way (Shapiro, 1993). But what does it mean
for adults to be disabled, to live lives where their bodies and/or minds are impaired in
manners that make functioning within society tenuous if not wholly stifled? More
importantly, within the scope of this study, how do adult educators conceptualize
disabilities for the purpose of helping students with BSD?

The following sections aim to answer these questions. The first section begins
with a detailed description of Richard (alias), a medical student who has BSD. His telling
story offers clear reason for continued investigation of students’ disabilities, specifically
BSD. Following Richard’s biography, the section explores ableism, “discrimination on
the grounds that being able bodied is the normal and superior human condition”
(McLean, 2011, p. 13), and its attachment to adult education and students like Richard.
From there, the section describes adult education’s commitment to a technical/rational
method of studying disabilities, an approach stressing alleviation of symptoms and
Richard

It is reasonable for those who do not have BSD or intimately know someone who is afflicted with the illness to question or be confused by its status as a disability. After all, everyone lives through a spectrum of emotions. Who doesn’t get excited at the possibility of a vacation? Who doesn’t feel depressed at divorce or the loss of a loved one? Federman and Thomson (2010) offer a description of how stress can affect adult students with BSD differently than healthy individuals. It is a true account given by “Richard,” a second-year medical student and sufferer of BSD. It is an interesting passage because Richard lucidly describes the entire process of BSD mood changes via his own experience. He begins:

I don’t think anyone would say being a second-year med student is a fun thing to do. The amount of work is overwhelming. Most of the time it consumes your life. I remember in college I was involved in a lot of other activities, but not these days. I go to class. I go to the library and study. I hang out with friends, usually in study groups. Typically, a few of us will have dinner together, and then I’m home again, studying until bedtime. Granted, I find occasional breaks, but not often. (Federman & Thomson, 2010, p. 17)

Richard acknowledges that his chosen profession is stressful and that his amount and quality of rest time has changed. He then goes on to describe his first encounter with
a hypomanic episode, a less severe, briefer state than manic episodes. Hypomanic episodes are at times associated with enhanced creativity, cognition, drive, and gregariousness. It is also an indication of an oncoming major depressive or manic episode.

During the last few months of my first year in med school I noticed that I would have these periods where, out of nowhere, all the work became easy, and this wasn’t because my professors were letting up. The experience wouldn’t last long—maybe a few days. But when those periods would occur, I felt like my mind was flying. I could absorb the material easily, working into the early morning hours. Frankly, it was like I had taken amphetamines without any of the negative side effects. (Federman & Thomson, 2010, p. 17-18)

His hypomanic episode does not endure. Richard then experiences a deep, extended depressive state and seriously contemplates suicide. He attributes this dark time to a lack of support within his college of medicine. He explains that his major depressive episode comes on as quickly and unexpectedly as it dissipates. After this depressive low, he rebounds and experiences a brief euthymic state. However, euthymia eventually dissolves into a full blown manic episode. During his manic episode, Richard claims to have invented a revolutionary new artificial heart on his own time. He also claims he has devised a plan for funding the entire project, something that would take many years and millions of dollars to do. Upon sharing his idea with a cardiac resident, Richard explains:
“He looked at me like I was nuts. What’s worse is that I couldn’t comprehend why he didn’t see the brilliance of my design. Well, in retrospect, it probably wasn’t all that brilliant...maybe not even realistic. I know I’m smart, but I also know that I’m not about to invent the next artificial heart!” (Federman & Thomson, 2010, p. 18).

Richard’s story is a telling example of how the ups and downs of BSD can be interwoven with the pursuit of academic goals. He is a case of a promising young medical student whose emotions raise concern at his institution only when his BSD appears to make him forget basic protocol of medical research and what is scientifically possible. Even worse, his change in mood state nearly kills Richard. Richard is but one of the millions who are affected by the disabling nature of BSD, a disorder where emotional highs are too high and depressions can feel inescapable.

Even while enrolled in a college of medicine, Richard does not receive the support required of a student with his disability. This lack of support can arise for many reasons. Understandably busy professors and colleagues may not have time to learn about Richard in more than superficial ways. Richard may have never learned to communicate his needs to the necessary people in his college of medicine. An overriding if unstated belief that academic prowess and mental disabilities such as BSD are necessarily divergent from one another may place taller, sturdier systemic walls between Richard and the help he needs. In any case, Richard is living and working in an institution of education that falls under the common challenge of ableism.
Ableism and the Adult Learner

Although the field of adult education historically studies disabilities from a technical/rational perspective, this does not mean that it ignores other approaches. Indeed, the technical/rational approach tends to look for ways that education can inform and alleviate challenges arising from having disabilities. The technical/rational lens also uncovers how educators can help adult students with disabilities overcome immediate classroom hurdles. At the same time, the issue of ableism has been at the forefront of adult education in the U.S. The term ableism refers to “a network of beliefs, processes and practices that produce a kind of self and body...that is projected as the perfect, species-typical and therefore essential and fully human” (Campbell, 2001, p. 44).

Ableism is an omnipresent yet not often overtly stated philosophy about the socialization of individuals with disabilities. Ableism assumes that people without disabilities are “normal” while simultaneously characterizing those with disabilities as “abnormal.”

The following section covers four topics related to ableism and adult education. It begins by summarizing the rights provided through federal law to U.S. citizens with disabilities. From there, the section explains the daunting reality facing adult students with disabilities despite the existence of certain federal laws and a bountiful technical/rational research community. The section then discusses how the U.S.’s labeling of people with disabilities can promote inclusion or reinforce ableism. The section concludes with a description of how the field of adult education can help to tackle ableism.
Legal rights of U.S. citizens with disabilities.

Disabled students in the U.S. enjoy a safety net of support from at least two sources. Section 504 of the Rehabilitation Act of 1973 “stipulates that no qualified person with a disability may be denied participation in, be denied benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance” (Thomas, 2000, p. 249). The Americans with Disabilities Act of 1990 (ADA) takes this protection a step further by offering those with disabilities alleviation from discrimination in employment while guaranteeing fair access to educational institutions. Initial legal cases related to the ADA often fell in favor of the defendant, meaning the ADA did not work as hoped upon its genesis. Therefore, in 2008 amendments were added to the ADA, greatly expanding protection for those with disabilities.

At least five effects can be seen from the ADA’s 2008 amendment (Bowman, 2008). First, the amendment instructs institutions to embrace a broad definition of what it means to be disabled, to err on the side of caution when a person’s disabled status is questioned or unclear. Second, corrective treatments for disabilities do not negate their presence. For example, although many students with BSD have medication regimens that successfully quell their manic episodes and MDD, institutions may not deem this population as being free of the disability. The disability is still present, just in remission. Third, the concept of major life activities is broadened to include non-work related tasks such as sleeping and eating. Fourth, institutions have less say regarding the disability statuses of students. Instead, students with disabilities must show that their school only
perceive the presence of a disability. Finally, episodic disabilities such as BSD receive greater protection; “in remission” is no longer synonymous with “cured.” In total, citizens of the U.S. who have disabilities are protected by ever progressing pieces of legislation.

The reality of being an adult student with a disability in the United States.

Clearly, the U.S. has a set of federal laws in place that seek to protect and support adult students as they pursue college degrees. Furthermore, a network of technical/rational research fuels better understandings and constant improvement of treatments for disabilities. For example, in the case of BSD, a cognitive disability (Brodwin, Parker, & DeLaGarza, 1996, p. 199), new medications are routinely tested in hopes of finding ways of alleviating manic and depressive symptoms in people not having success with other forms of pharmacotherapy. These new medicines help alleviate problems interfering with students who have BSD as they complete their degrees. For adult learners with certain physical disabilities, new prostheses with intricately working mechanical parts replace older cumbersome versions. These mechanisms improve transportation for physically disabled students to, from, and around campuses. Genetics research offers promising treatments for future generations of people with sight disabilities. Yet the harsh reality for adults with disabilities is that their completion of college degrees is, proportionately speaking, an unlikelihood (Fabian & Liesener, 2005). While the U.S. has seen a more than 30% increase in higher education enrollment by disabled students over the last two decades, greater than 50% of such students will not
reach their educational goals (National Council on Disability, 2003). Why is this?

**U.S. culture of labeling disabilities.**

Despite the valiant efforts of a protective U.S. legal system and culture of assistive research, being disabled concerns more than simply obtaining guaranteed accommodations and having new treatment devices made available. The schism between U.S. disability law and reality is not new. Before the 1960s, disabilities were largely conceived of as medical conditions requiring diagnosis and treatment (Mitchell & Snyder, 1997; Taylor, 1999). However, the Vietnam War-era saw veterans returning home en masse with post-traumatic stress disorder (PTSD). At this point in history, the study of disabilities takes on new lenses; it becomes more complex. Interaction, or lack thereof, between disabled people and society as a whole is now seen as a considerable factor in overall socialization. This new lens continues to influence disabilities research and treatment up through present day U.S. military involvement overseas. Hence, the World Health Organization (WHO) now mentions social barriers as an inherent problem for the disabled. Disabled people are now thought of as a group represented by "membership within and outside the community. Disabled is centered and nondisabled is placed in the peripheral position in order to look at the world from inside out, to expose the perspective and expertise that is silenced" (Linton, 1998, p. 13).

More so, labels of groups by society play a particularly important role in the existing gap between supportive law, research, and those with disabilities being placed on the periphery of regular activities within a community. Labels that define can be both
tools of improvement and ostracizing modes of oppression. They allow humans to quickly and conveniently organize one another into groups for the purpose of expeditious interaction. Labeling members of a group provides them with recognition that can aid in their receiving assistance. In fact, the very practice of diagnosing adults with BSD is a sort of labeling that carries with it certain benefits. When adults first visit doctors or disabilities service departments at higher education institutions, their new labels of having BSD allow health professionals to collaborate on the resources they likely need. However, when adults are perceived solely through this single label, society fails to recognize their full life stories. Labels, once helpful tools, can become mechanisms of hegemonic pressure. For example, adults with BSD should be labeled as exactly that, people with BSD, not as bipolar people. The latter, which is a common expression, carries with it the connotation that BSD is the defining label associated with a particular adult; the illness literally precedes and supersedes the person.

Ableist labeling is not always so overt as an individual with BSD being called a “bipolar person” and not a “person with BSD.” Labeling, a form of communication, can also arise from society sending messages to disabled adults through the absence of constructs allowing for their seamless inclusion. For instance, something as simple as a missing entrance ramp into a building carries ableist messages. When adults moving by way of wheelchairs encounter inaccessible entrances to buildings they receive a message of indifference. This message literally indicates, “You cannot get in here and we do not care to help.” At the same time, when working ramps are easily accessible, the degree of
adults’ disabilities are minimized. Richard also experiences a form of nonverbally communicated labeling. Richard’s colleagues barely acknowledge his downward emotional spiral and the institution seems to lack adequate means for his treatment. It is not only variations in adults making them disabled. Negligent society also creates disability (Hahn, 1988).

The term “disability” is a powerful moniker. In its application, those with disabilities are recognized as a unique group within society. This recognition provides the population with a degree of social power. It allows members to gather under one heading in the pursuit of better lives. The label also serves a political end; it semantically draws a line between those who are “able” and those who are not. When adults are labeled in this manner, they are placed in a system holding disability as “a form of social oppression residing outside the person” (Priestly, 2001, p. xvii). Labels proffer the non-disabled as “protectors, guides, leaders, role models, and intermediates for disabled individuals” (Hahn, 1986, p. 130). The authoritarianism embedded in words such as “disabled” can be detrimental and opens questions about the appropriate nomenclature for the population. Moreover, careless application of labels can rob individuals of the ability to self-identify as being more than their disability. Naming terminology of disabilities has evolved over the years and will most likely continue to be a dichotomous issue. In one way, these labels help to segment the disabled population and allow its members to pursue social improvement as an empowered group. At other times, these phrases serve as a stark reminder that disabled people are often seen as outsiders who must be cared for and
Within the mental health treatment community there exists an almost mantric expression, “You are not your diagnosis.” This saying reminds adults with BSD that the symptoms making up their diagnoses are not the conclusive summation of their existences. Unfortunately, this message has yet to be fully heeded by much of the world. While the evolving etymology of the term “disabilities” offers hope to this population, the realities of its members remain dubious. Those with disabilities still experience unequal citizenship due to their being “assumed to be helpless, dependent, asexual, economically unproductive, physically limited, emotionally immature, and acceptable only when they are unobtrusive” (Hahn, 1986, p. 30). The pressure created by these assumptive labels can create conflicting self-identity in disabled adults. Because of their socially assigned identities, coming largely from the non-disabled population, members of the disabled minority population may have trouble “knowing their real selves, their real needs, and their real capabilities” (Charlton, 1998, p. 27). At worst, adults with disabilities endure a type of informal segregation through placement in establishments that remove them from society under the guise of medical treatment, e.g., nursing homes and outdated asylums. (Albrecht, 1992) Even worse, adults with disabilities do not seek help because they fear that formal and informal segregation from social interactions that the non-disabled take for granted, e.g., fair employment and enrollment in education.

**How adult education can help tackle ableism.**

The field of adult education can play an important role in the leveling of ableism.
Clark (2006) explains that, “As a field, we have an array of adult education theories and studies focusing on diverse populations (Lawler, 2003; Merriam & Caffarella, 1999), but we have yet to explore and/or develop a theoretical framework that helps explain in depth the “difference” that disabled learners bring to the learning context” (p. 310).

Rocco and Delgado (2011) support this claim by stating, “As of 2011, the adult education work around disability issues has just barely broken ground on important issues, ranging from the individual person to the social context” (p. 5). Rocco and Delgado (2011) further suggest that adult education research needs to move beyond its tendency to investigate single impairments and the role each plays within other commonly investigated learning experiences from the field, e.g., transformative learning undertaken by people with HIV/AIDS (Courtenay, Merriam, & Reeves, 1998), adult basic education and learning disabilities (Jordan, 1996; Ross-Gordon, 1989), and cardiac health and self-directed learning (Wise, Yun, & Shaw, 2000). This does not mean that the field of adult education lacks a place within the overall disabilities research community. Instead, adult education scholars have found numerous ways to spark unique conversations about disabilities, or, as Titchkosky puts it, to bring forth “cultural narratives that already surround disabled people” (2000, p. 213). These narratives, like those of Richard, Brookfield, and Redfield Jamison, expose ongoing technical/rational treatments as well as newer attempts to redefine disabilities as socially constructed phenomena.

Indeed, members of the disability studies research community have “fought hard to get disability included in the race-class-gender triad” (Davis, 2001, p. 535) even if
“inclusion happens only in the disability studies literature, not in the adult education literature” (Rocco & Delgado, 2011, p. 9). While literature on race, class, and gender offers a potential critical framework for future exploration of disability by the field, a cautionary point is worth noting. Researchers need to remember that despite its social construction and ability to be studied critically, adults with disabilities often need help in some way, shape, or form. Unlike groups historically oppressed because of race, class, or gender, adults with disabilities have a singular, if not multiple, medical problem that requires attentive and direct treatment. A critical approach to disability needs to tread lightly on its judgment of the technical/rational approach. For example, Munger and Mertens (2011) make a broad and sweeping assessment of the technical/rational approach to studying disabilities.

“Medical and scientific research frequently has perpetuated the cycle of oppression by reinforcing the notion of disability as individual deviance rather than sociopolitical issue. Much of this research has been highly medicalized, with doctors and other professionals assuming to know what disabled people want and need and frequently neglecting to ask disabled people their opinions at all. Indeed, throughout history, disabled individuals have been forced to serve as guinea pigs for medical experimentation that has no known or expected benefits for them.”

The field cannot veer completely away from its technical/rational tradition in favor of only a critical approach. Such a drastic move would contradict itself by telling
disabled adults how their statuses should be researched.

Therefore, the current study is not framed in critical theory. Nor does the study aim to directly understand the roles power and oppression play in the lives of those with disabilities. However, it offers a potential link between the technical/rational approach and that of the evolving assessment of disabilities as socially constructed phenomena.

Unimpeded contact between disabled adults and society is an important component in the fight against ableism (McLean, 2011). Such contact needs to move past a state where affected adults are superficially “just there” (Linton, 1998) and toward one of full societal envelopment. Contact needs to be as simple as abled adults befriending those with disabilities. McLean (2011) explains, “Getting to know someone with a disability can precipitate a move from indifference and ignorance to a better appreciation of the effects of disability. For contact to be a catalyst for the internal process of struggle, able-bodied people need to be capable of being affected by others’ experience and disability” (p. 17).

These introductions and eventual friendships can lead to perspective transformation in those who unknowingly perpetuate ableism (Rusch, 2003).

Communication is a fundamental part of contact and friendship between any groups of people. No study could ever account for every aspect of every type of communication taken on by adults with BSD. However, the present study examines CA, perhaps the biggest hurdle to introductions being made between abled and disabled people. While looking at a finite context, i.e. higher education classrooms, and a specific type of communication, i.e., public speaking, the current study manages to build an initial
path between technical/rational and socially constructed, critical understandings of the
disability BSD.

**Technical/Rational Approach to Disabilities**

Rocco (2011) suggests that the field of adult education historically operates from
a technical/rational rational approach. Such an approach views disabilities as medical
diagnoses in people that must be fixed or remedied (Tate & Pledger, 2003). Rocco and
Fornes (2010) recognize five types of disabilities that can impede an adults’ formal
educations:

1. Developmental disabilities originate before the age of 18, are expected to last
throughout adulthood, and include conditions such as mental retardation and
cerebral palsy (Wright, 1980).

2. Cognitive disabilities affect the “ability to think, understand, learn about, and
be aware of the environment through the senses” (Wright, 1980, p. 96). Aside
from mental retardation, autism, and traumatic brain injuries, learning disabilities
also fall into this category.

3. Mental disabilities are “psychological or behavioral patterns that occur and
cause distress that is not expected as part of normal development or culture”
(Rocco & Fornes, 2010, p. 380). Along with BSD, mental disabilities include
disorders such as schizophrenia, obsessive compulsive disorder, panic disorder,
post traumatic stress disorder, emotional dysfunction, and substance abuse (Rocco
(4) Physical disabilities impede adults’ mobilities and use of limbs.

(5) Sensory disabilities impede any of the five senses. They can include legally defined classifications of a sensory disability or complete loss of the sense, e.g., legal blindness or total blindness.

At least two points are worth noting about this classification system of disabilities. First, adults’ disabilities may fall into more than one category. For instance, mental retardation typically originates during development but also creates a cognitive disability. Second, disabilities often exist on a spectrum of severity. For example, adults with BSD may suffer from hypomanic episodes or manic episodes and dysthymia or major depressive disorder (MDD).

Education plays a critical role in how adults deal with having disabilities. The following sections examine two issues central to education and the technical/rational approach. These issues are (1) alleviation of symptoms and (2) teaching strategies for adults with disabilities in higher education.

**Alleviation of symptoms.**

The technical/rational approach is a pragmatic attempt to alleviate challenges created by the presence of developmental, cognitive, mental, physical, and sensory disabilities. In terms of adult education, this perspective focuses on adults “learning to cope with the disability...[and]...learning skills to mitigate the impact of the disability” (Rocco, 2011, p. 99). In writing about his own MDD, a psychopathology closely related to BSD, Brookfield suggests four learning tasks are requisite for people living with mental
disabilities. First, mentally disabled adults must learn to overcome shame. Brookfield (2011) proposes that at points in time he, like many people with mental disabilities, is trapped in various paradigmatic assumptions, “a framing, structuring assumption that we hold. It is so close to us, so much a part of who we are and how we view the world, that when someone points it out to us, we usually deny that it’s an assumption and instead claim, “That’s the way the world is” (p. 37). One such paradigmatic assumption concerns the etiology of mental disabilities like MDD and BSD. Brookfield reports initially believing that his MDD is the result of a personal inability to engage in and deal with life’s challenges, not a chemical imbalance in his brain. In retrospect, Brookfield blames his deep assimilation with European rationality and a lack of public conversation for his not being able to recognize the presence and causes of depressive symptoms.

Second, the mentally disabled need to pass through ideological detoxification. For Brookfield this involves recognizing and overcoming an ideology of patriarchy. Although being well-known for his critical work against oppressive ideologies, Brookfield (2005) falls prey to a way of thinking that places him above the irrationality of emotions simply because he is a man. He describes his line of thinking at this time in his life as, “I’m a man, I’m supposed to be ruled by reason. I should be able to keep my feelings under control.” (p. 39). He mentions that his submission to a patriarchal ideology once made him believe that he did not know a single man who takes medication for MDD and that such treatments are more or less reserved for women. Brookfield professes that “I still feel there’s an unseemly lack of manliness, or grit, in my suffering from and disclosing
about my depression” (p. 39). Echoing his previous comments on shame and a general lack of public conversation about mental disabilities, it is statistically unlikely, if not impossible, that at any point in his adult life Brookfield does not know at least one man who is medicated for MDD. What he is unaware of is who these men are because, as patriarchal ideology dictates, such conversations stay hidden.

Third, mentally disabled adults are helped by learning to normalize their illnesses, “to view it as something that is as unremarkable as possible” (Brookfield, 2011, p. 39). Brookfield contends that because open conversation is missing on the topic, one adult might believe his or her disability is so rare that he or she is the only person who must deal with it. Instead of perceiving disabilities as unfortunate problems to be endured in a vacuous space, disabled adults learn that their conditions are not out of the ordinary. At the same time, adults with mental disabilities must respect the nature of their statuses and the fact that ignorance of the condition can lead to catastrophic effects. When normalizing their conditions, disabled adults benefit from learning to take life one day at a time, sometimes hour-by-hour, and appreciate the graduated and spectral nature of mental disabilities. Brookfield describes his own experience “[W]hen I am depressed, I define a great day as being one where I am not feeling suicidal” (p. 39).

Fourth, mentally disabled adults must learn to calibrate their treatment. Commitment to pharmacotherapy and some style of talk therapy are standard elements of treatment for mental disabilities such as BSD (Goodwin & Jamison, 2007). This does not suggest that adherence to medication and attendance of therapy sessions is an
immediately or permanently effective deliverance from BSD mood swings. Brookfield (2011, p. 40) suggests that mentally disabled adults must be open to ongoing reflection and learning about the illnesses and their fluctuating symptoms. As he describes it, “[A]fter several years of psychological torture, I finally found a cocktail of drugs that keeps me intact. Doing this involved a lot of technical, trial-and-error sorts of learning. I had to learn to calibrate the right mix of medication, cognitive behavioral therapy, exercise, meditation, avoidance, and homeopathic remedies to find the combination that was uniquely suited to reducing my depression” (p. 40).

While Brookfield vividly relates his autoethnography, the story he tells is not that unusual. If anything, the study of mental disabilities would be greatly helped if more people would write on their personal experiences with such clarity. Regardless of mental disability type, those who fall under this category must overcome shame, journey through ideological detoxification, normalize despair, and learn to calibrate treatment. Although each person’s journey will have its unique bright moments and occasional failures, succeeding at these learning tasks is incredibly important for disabled people. However, a few comments made by Brookfield suggest a gap can be further explored by the field of adult education. He suggests that “changes in perspective…developing emotional security...[and]... ideological detoxification” (p. 37) are not technical in nature. While such a claim can be made, it could be equally asserted that these transformations can only take place for many mentally disabled people after they become fluent in the technical aspects of their conditions.
Teaching strategies for adults with disabilities in higher education.

The technical/rational approach holds that adults with disabilities may benefit from adjustments to their methods of participating in higher education. Rocco and Fornes (2010) suggest that adult educators can aid disabled students in higher education through four actions. First, adult educators should consider the physical environment of learning. Because external stimuli can affect learners with disabilities in more drastic ways than non-disabled students, a properly constructed setting can be crucial to their success. Hong et al. (2007) suggest that these adjustments can be numerous and not always apparent to the non-disabled population. Alterations in lighting, temperature, bathroom access, and reduction of white and external noises, while appreciated by non-disabled learners, can mark the difference between inclusion and exclusion for the students with disabilities.

Second, fostering self-determination in students with disabilities allows them to take ownership of their educations. Self-determination increases the probability that institutions will retain disabled students (Fornes, Rocco, & Rosenberg, 2008). Wehmeyer (2001) suggests that self-determination in disabled learners can be advanced on several fronts. A sense of autonomy must be offered to students with disabilities. This autonomy includes activities such as being allowed to enroll in courses how and when they want and not having academic schedules composed at the discretion of higher education administrations. Students with disabilities should also enjoy self-regulation of their behaviors; control should not be taken away. For example, students, not institutions, should decide when their disabilities limit full inclusion in educational activities. Finally,
disabled students should have a sense of empowerment and self-realization. This empowerment includes feeling protected within higher education systems and being allowed to set their own academic goals, regardless of disability.

Third, adult educators should incorporate teaching strategies to keep students with disabilities engaged in learning. Students are more likely to stay engaged in courses garnering a sense of academic prosperity (Greenwood, Delaquadri, & Hall, 1984). Therefore, adult educators can best promote engagement by offering courses through multiple flexible pathways that ensure academic achievement by students with disabilities. For example, educators can post extensive course content online so that students with disabilities can return to it after initial in-class delivery. Guided notes and note taking assistants can help disabled students better record what they are learning in class (Barbeta & Skaruppa, 1995). Educators can also fashion syllabi to explain course objectives and institutional rules in ways that cover concerns held by disabled students (Ohio State University Office for Disability Services, 2000). Multiple forms of assessment can be incorporated so disabled students can meet course requirements while obtaining good marks (Carlson, 1980).

At the root of the three previously mentioned strategies is transparent and comfortable communication, Rocco and Fornes’s (2010) final prescribed action for adult educators to consider when working with disabled students. Disabled students must feel comfortable when requesting special classroom needs. In maintaining a sense of autonomy, students with disabilities must communicate their plans and goals. When
designing individualized learning strategies, students with disabilities and their instructors must communicate collaboratively in order to reach desirable ends. At the same time, communication with disabled adults can be difficult. Understandably, adults with disabilities may view their conditions as private, personal matters. They may fear discrimination from others learning of their statuses (Rocco, 2001). Mental disabilities such as BSD do not fully appear until adulthood (Jordan, 1996). In such cases, adults with the illness may be trying to communicate needs at a point in time when they are still learning about the disability. Rocco and Fornes (2010) propose that swift yet private meetings with disabled students, at the beginning of the school year or immediately following their diagnoses, are the best practice for working through any arising needs.

**Communication Apprehension in Relation to Bipolar Spectrum Disorder**

As a disability, BSD is yet to be examined through CA psychometric research devices. Even so, literature indicates that individuals with BSD may experience CA in ways that are not congruent with the rest of the general population. These studies are focused on measures of environment and genetic variances.

**Environment, Communication Apprehension, and Bipolar Spectrum Disorder**

As previously mentioned, several variables in a given environment can affect people’s CA. Furthermore, the effects of mood alterations upon the socialization of people with BSD are well established. Manic and major depressive episodes influence how people with BSD communicate with others. What may come as a surprise is the impairment of communication-based socialization activities that people with BSD
experience even during spans of remission. Cooke et al. (1996) find that adults with remitted BSD function socially at levels lower than that of adults with a host of other medical ailments. Romans and McPherson (1992) conclude that adults with BSD in remission typically have fewer social contacts than the overall population. Blairy et al. (2004) and Coryell et al. (1993) suggest that, even when in remission, adults with BSD will struggle with a broad spectrum of socialization practices: marital communication, work communication, family communication, and leisure activities. In terms of remission and impaired socialization, adults with BSD are similar in deficit to those with schizophrenia (Dickerson et al., 2001). Goodwin and Jamison (2007, p. 340) describe this phenomena as such: “Overall, therefore, it appears that bipolar spectrum disorder is associated with a variety of general indicators of social impairment. Even when the individual is not in an affective episode, those interpersonal difficulties appear to persist.”

**Genetic Variances, Communication Apprehension, and Bipolar Spectrum Disorder**

A potential link exists between CA, BSD, neuroticism, and extroversion/introversion. Increased neuroticism is common during mood fluxes of adults with BSD (Clark et al., 1994). Several studies find that adults with remitted BSD maintain a hyperthymic temperament that can influence their CA (Hantouche et al., 1998; Benazzi & Akiskal, 2005; Cassano et al., 1992; Perugi et al., 1998). Perhaps most importantly to the current study, patients in remission are shown to have levels of neuroticism higher than that of the overall population (Hirschfeld et al., 1986; Solomon et al., 1996). While excessive gregariousness can be a common feature of hypomanic and
manic episodes, studies indicate that levels of extroversion (Popescu et al., 1985) and introversion (Hirschfeld, 1985; Hirschfeld et al., 1986) in euthymic patients are not even with the population of adults who do not have BSD. Furthermore, adults with remitted BSD are shown to have greater attraction to novel situations than those without the disorder (Cronin & Zuckerman, 1992; Young et al., 1995; Nowakowska et al., 2005). Goodwin and Jamison (2007) report findings from an 11-point semantic differential study of personality assessment by euthymic, hypomanic, and depressed adults with BSD. The findings from this study are interesting. Adults with BSD perceive their levels of seriousness/humorous and cautiousness/rashness as being nearly similar in their euthymic and depressed states. These adults also judge personal degrees of fairness/unfairness, sensitivity/insensitivity, enthusiasm/boredom, exciting/boring, competence/incompetence, gentleness/wildness, and confidence/insecurity as being alike in euthymic and hypomanic states. In summary, there exists somewhat of a paradox in the potential literature linking BSD and CA. Adults with the disorder are likely to be more neurotic (susceptible to CA) than average yet also more extroverted (having lower CA) than normal.

Study of brain structures in persons with BSD for the direct purpose of understanding CA has yet to take place. Therefore, any similarities between the brain structures of people with BSD and those associated with CA would be speculative. Even so, it is worth noting congruences exist between these two sets. The physical brain structure of adults with BSD are often different from that of healthy adults. Meta-analyses find that the lateral ventricle, cortical sulcal, and third ventricle of the
BSD brain are often enlarged. Volume decreases exist in the frontal, prefrontal, cerebellar, hippocampal, and global cerebral regions (Goodwin & Jamison, 2007). Not only are regions of the brain different in size for adults with BSD, their functioning can also be impeded. Functional neuroimaging studies suggest that activation in the brains of people with BSD is irregular (Goodwin & Jamison, 2007). For example, activation of the dorsolateral prefrontal lobe and amygdala in adults with BSD is hypersensitive (Yurgelun-Todd et al., 2000) while that of the temporal and right insular cortex remains attenuated (George et al., 1997). Unfortunately, “medication effects are unlikely to account for the bulk of the deficits seen during symptomatic and remitted states. There appears to be a core pattern of cognitive deficit that is manifested across the phases of the illness” (Goodwin and Jamison, 2007, p. 310). In other words, despite the copious benefits provided by medications to adults with BSD, a sort of constant blanketed mental deficit exists due to brain abnormalities.

**Chapter Summary**

The preceding review of literature offers a background to the current study. It is intended to connect three fields of previous research (emotions in adult education, BSD, and CA) and explain why further collaborative investigation is needed. Along with a theoretical framework, the review of literature begins with an introduction to the role emotion plays in the learning of adults. From there, the chapter examines BSD as a disability within higher education. In concludes with a discussion of CA as a factor which influences a public speaker’s efforts.
Chapter 3

Methodology

The purpose of the quantitative study is to investigate the role bipolar spectrum disorder (BSD) plays in the public speaking communication apprehension (CA) of adult students who have been diagnosed with the illness. The current chapter describes the methodology of the study. It begins with a list of the study’s four hypotheses and means of participant recruitment. From there, the chapter provides full descriptions of the Personal Report of Public Speaking Anxiety (PRPSA) (McCroskey, 1970), Situational Communication Apprehension Measure (SCAM) (Richmond, 1978), Student Motivation Scale (SMS) (Rubin, Palmgreen, & Sypher, 2004; Christophel, 1990; Richmond, 1990), Generalized Belief Measure (GBM) (McCroskey & Richmond, 1996), and Mood Disorders Questionnaire (MDQ) (Hirschfeld et al., 2000). PRPSA, SCAM, SMS, GBM, and MDQ are self-reported surveys used by the researcher to test the study’s four hypotheses. The chapter concludes with a discussion of data analysis and potential threats to validity.

Hypotheses

The current study is driven by four hypotheses reflecting its research questions as stated in Chapter 1. These four hypotheses are:

H1: Adult students with BSD experience an overall level of public speaking CA that is significantly higher than students who do not have BSD.
H2: Adult students with BSD experience public speaking CA for reasons that are different from students who do not have BSD.

H3: Adult students without BSD will hold a more positive perception than adult students with BSD in terms of the potential benefits of educational programs that lower public speaking CA.

H4: Adult students with BSD believe that having BSD contributes to their public speaking CA.

**Participant Recruitment**

The study includes two sets of participants. The first set of participants is made up of undergraduate students at Penn State University (University Park). The second set of participants contains members of the International Bipolar Foundation (IBPF). The study combines these populations for one very important reason. BSD is not a common illness. Recruitment at Penn State is expected to only provide a handful of responses from participants with positive BSD screens, hardly enough to allow for significant comparison of scores between adults having and not having BSD. This is not to say, however, that Penn State participants are not worth including in the study. Indeed, these students act as a control group, mostly providing survey answers from people who do not have BSD. On the other hand, because the IBPF largely serves people having BSD, its organization provides survey results from participants almost exclusively having BSD. Inclusion of both types of participants is absolutely necessary for statistical comparisons to be made between adults having and not having BSD.
While participants come from Penn State and the IBPF, their recruitment is very similar. All graduating undergraduate students at Penn State University are required to complete *Effective Speech* (CAS100), a course on public speaking. This course is a part of Penn State’s general education. As a part of their overall grade in *Effective Speech*, Penn State (University Park) students participate in faculty and graduate student research. Participation in research accounts for 2% of a student’s overall grades in *Effective Speech*. The 2% research participation assignment is standard in all sections of *Effective Speech*. A student not wishing to participate in research is able to make up the 2% of their overall grade by completing a secondary assignment in *Effective Speech*, often some type of essay composition. Research participation frequently involves a student completing different types of online surveys. During a given semester, a students in *Effective Speech* can choose which of approximately a dozen survey sets he or she wished to complete. The 2% activity is completed through Penn State’s RePaSS system (Research Participation Sign-Up System), a software program that allows Penn State to recruit, deliver, and track student participation in these studies. Throughout the semester in which a student is enrolled in *Effective Speech*, he or she receives email reminders to log on to RePaSS and participate in research, e.g., complete research surveys. RePaSS provides a potential participant with an internet link to a corresponding Sona Systems Qualtrics survey. The actual sets of surveys for the current study are delivered to and completed by students using Qualtrics, an encrypted online survey software. Qualtrics does not require a participants to register, “sign up,” or personally identify himself or
herself in a way that connects survey answers to RePaSS. In other words, RePaSS allows the researcher to know who has completed a survey without knowing what his or her answers might have been.

The current study also involves participants recruited from the IBPF email listserv. While these participants complete identical surveys through the same Qualtrics site as those at Penn State, their recruitment is slightly different. After receiving permission from IBPF administrators, an organizational email listserv is used to contact members through personally provided email addresses. The email message informs possible participants as to the nature of the study. The email also provides a link to the online Qualtrics surveys. By clicking on the email link, these participants can access and complete the surveys by way of Qualtrics. IBPF participants are instructed they will not be contacted by the researcher upon completion of their surveys.

**Instruments of Measurement for Each Hypothesis**

The following section describes the assessment devices used in the study. It also explains the rationale behind the use these measures.

**Hypothesis 1: Personal Report of Public Speaking Anxiety (PRPSA).**

The PRPSA (Appendix A) assesses CA only related to public speaking, not dyadic or group communication (McCroskey, 1970). The device is a 34-statement index that the participant completes using a 5-point Likert-type scale. Completion of the PRPSA takes approximately five minutes. Scores range from 34 to 170 ($\bar{x} = 114.6$, $SD = 17.2$). Scores above 131 indicate high public speaking anxiety, below 98 indicates low public
speaking anxiety, and 98 to 131 indicates a moderate degree of public speaking anxiety. Factor analysis indicates that each item assesses a unique item related to public speaking CA. Internal reliability of the PRPSA is high (.94) as is its test-retest reliability (.84) (McCroskey, 1970). Participant scores on the PRPSA are shown to be significantly correlated with other measurements of CA (Personal Report of Communication Apprehension, .41; Test Anxiety Inventory, .36) (McCroskey, 1970).

**Hypothesis 2: Situational Communication Apprehension Measure (SCAM).**

Despite being similar in appearance to the PRPSA, the SCAM (Appendix B) is different in terms of construction. The PRPSA measures the overall level of public speaking CA a participant may or may not have and is not altered by a researcher. The SCAM is specifically designed so that a researcher can alter its directions for the purpose of having a participant consider his or her CA in a specific situation. While flexibility is SCAM’s greatest benefit, that same flexibility holds inherent weaknesses: there are no preset means, ranges, or standard deviations for this very reason. Therefore, when a researcher is using the SCAM he or she must establish these values, typically through its distribution to a more generalized group of participants. Hence, persons without BSD are included in the current study. Despite the SCAM’s lack of preset means, ranges, and standard deviations, it has been shown to be reliable in other studies (.85 to .90) (Richmond, 1978).

The SCAM is delivered to each participant nine times. Each version of the SCAM has its directions altered as to have the participant consider public speaking specifically in
a situation reflecting one of the previously described environmental factors that influence CA (i.e., novelty, unfamiliarity, formality, subordinate status, conspicuousness, dissimilarity, intensity of attention, evaluation, and prior history). For example, directions for the “unfamiliarity” SCAM are “Please complete the following questionnaire about how you would feel if you were speaking to an audience that was made up entirely of people you did not know…” Appendix B provides a verbatim list of the directions for each of these nine versions of the SCAM. It is important to note that research using the SCAM usually has a participant describe how he or she felt during communication in which he or she has already participated. However, some, if not many, participants in this study may have never engaged in public speaking—especially those who have elevated CA. Nevertheless, other communication research measures have the participant consider feelings about communication that he or she has not yet completed (Hendrick, 1990). Furthermore, both groups of participants, those with and without BSD, are presented with the exact same sets of the SCAM.

**Hypothesis 3: Student Motivation Scale (SMS).**

In order to measure the perceived value a participant places on education aimed at lowering public speaking CA (i.e., public speaking classes rhetoritherapy, and assertiveness training, etc.), the current study makes use of the SMS (Appendix C). The SMS is a 10-item, 7-point semantic differential device that quantifies situational levels of motivation in a student. Participant scores can range from 10 to 70, with higher scores indicating greater motivation. Two important clarifications must be made about the SMS.
First, it is not a measure of a student’s overall motivation toward education and learning. Nor is the SMS intended to be a measure of a student’s intelligence. Instead, as can be seen with its alterable directions, the SMS is specifically designed to investigate student motivation about a specific type of learning or educational experience. In the case of the current study, the directions are worded as to have the subject consider his or her motivation in a learning experience that would help to lower public speaking CA.

Second, its creators cast a clear line between a motivated and a compliant learner. A motivated learner sees value in a given educational activity. He or she will focus attention and energy on an educational endeavor because there is some type of perceived gain to be taken from what is learned. A student can be motivated in one course and unmotivated in another. A compliant learner is one who completes educational tasks because of pressure from some other person. In a higher education context such pressure would typically come from a course instructor. As Richmond describes it, “motivated behavior will occur regardless of the presence of others, whereas the compliant behavior will only occur in the presence (physical and/or psychological) of the compliance-seeking person” (1990, p. 182).

Because the SMS has its directions and overall purpose situationally defined by the individual researcher for the unique goals of his or her study, there exist no mean scores or standard deviations related specifically to H3. However, as an entire scale, the SMS represents the cumulative work of at least three separate studies. Three different combinations of items on the scale test reliable at alpha levels well above .90 (Rubin,
Furthermore, construct validity of the SMS is established. Participant SMS scores correlate positively ($r > .50$) with memory of course material (Beatty et al., 1980), completion of written assignments (Beatty & Payne, 1985), and length of in-class speeches (Beatty et al., 1986). In short, but not by surprise, the student who scores high on the SMS in relation to a given class will likely remember, write upon, and speak about course content more thoroughly than the student who scores low on the SMS.

**Hypothesis 4: Generalized Belief Measure (GBM).**

Hypothesis 4 is tested using the GBM (Appendix D). The GBM is only delivered to the participant with BSD because the current version specifically inquires about his or her perception of having the illness. The GBM is a 5-item, 7-point semantic differential device that can be altered to measure a participant’s belief on any topic. A participant’s score can range from 5 to 35. In the current study, scores closer to 35 indicate a stronger belief by the participant that having BSD contributes to his or her public speaking CA. Because the GBM is study-specific, no mean scores or standard deviations exist for its use in the investigating H4. Even so, past studies using the GBM establish high alpha reliability ($> .90$) (McCroskey & Richmond, 1996).

**Rationale for use of the PRPSA, SCAM, SMS, and GBM.**

As mentioned in Chapter 2, the study of CA can take on three quantitative methods of investigation: observer rating, physiological measurement of brain and limbic system functioning, and self-reported indexes. Although these three methods attempt to
describe a participant’s CA, each actually measures different facets of the social phobia. Observer rating measures the ways a participant appears and sounds to others during apprehensive communication. Physiological measurement of brain and limbic system functioning measures changes in a participant’s body when he or she experiences anxiety. Self-reported indexes assess how a participant feels when he or she is placed into an anxiety inducing form of communication. All three of these methods show varying levels of accuracy and effectiveness in measuring and describing the anxiety that accompanies a participant when he or she is put into the position of communicator. Ultimately, the method of analysis used by a researcher would depend upon research goals and the way in that he or she conceptualizes CA.

Historically, CA research rests most frequently on the use of self-reported scales. As the preferred method of analysis in the field, scales from the CA research community, such as the PRPSA, SCAM, SMS, and GBM, carry with them a number of considerable benefits. First, the four measures allow the participant to describe his or her public speaking CA and thoughts about having BSD. Unlike observer rating and physiological measurements of heart rate and the brain, the PRPSA and SCAM provide the participant with an opportunity to pinpoint what prompts his or her anxiety. The PRPSA and SCAM do more than simply describe what a participant looks like when he or she is speaking or how his or her limbic system functions when experiencing CA. The SMS and GBM are more objective measures of motivation and belief than, hypothetically, asking an instructor what he or she thinks of a particular student’s motivation or feelings about
having BSD.

Second, each device forces the participant to consider the value he or she places on education related to public speaking CA or having BSD. PRPSA, SCAM, SMS, and GBM ensure that each participant will understand these items in a similar manner. This is due to each participant receiving identical instructions and being assessed on a standard range of scores. Seeing Likert-type scales allows the participant to quickly conceive of CA and feelings about education and BSD as existing on a spectrum and not simply as “yes” or “no” answers. Without this prompting via consistent language, it is possible that participants could perceive of CA in ways that are incongruous with one another.

Finally, from a pragmatic research point-of-view, self-reported scales of CA, such as the PRPSA, SCAM, SMS, and GBM, are inexpensive to use and require less commitment by way of time when compared to other forms of CA assessment such as limbic system tracking. All are free to use, do not have a copyright, and, therefore, do not require the researcher to obtain approval from its creator. None of the four measures require training for observation, setting up instrumentation for tracking heart rate, or expensive technology to generate images of a participant’s brain. Each measure only requires that the participant be able to read the language in which it is delivered and the researcher be able to complete basic addition and subtraction with the use of a calculator.

**Mood Disorder Questionnaire (MDQ).**

The self-reported MDQ (Appendix E) assesses whether or not a participant has BSD. The MDQ contains five sets of questions. For the current study, in order for a
participant to screen positive for BSD he or she must answer (1) “yes” to seven or more
items on Question #1, (2) “yes” to Question #2, (3) “Moderate Problem” or “Serious
Problem” to Question #3, and “yes” to Question #5. In order to be screened as
nonpositive for BSD, a participant must answer (1) “no” to seven or more items on
Question #1, or “no” to Question #2, or "No problem” or “Moderate problem” to
Question #3, AND “no” to question #5. As discussed in Chapter 4, some participants do
not fit cleanly into one of these categories and are, therefore, not included in final
analysis. It is important to note that a positive screen on the MDQ is not equal to a
formal diagnosis of BSD; only a trained clinician can offer a formal BSD diagnosis.
Indeed, the MDQ is not a reliable device for uncovering whether or not a person has
BSD. However, the MDQ is a strong indicator of people who do not have BSD. Over
90% of people who do not have BSD will screen nonpositive on the scale. The MDQ is
also a reliable device for reaffirming a previous BSD diagnosis; more than 70% of people
with a formal BSD diagnosis will screen positive on the MDQ. (Hirschfeld et al., 2000)

Data Analysis

SPSS is a software program that allows the researcher to enter large amounts of
numerical data into a spreadsheet format for the purpose of quick and accurate statistical
analysis. It is used at length in the current study. Each participant represents his or her
own case in the overall SPSS data set. A participant’s total PRPSA, SCAM, SMS, and
GBM scores are calculated by the researcher and entered into his or her unique SPSS
case. In order to test H1, H2, and H3, the researcher compares participants without BSD
to those with BSD on like items. This is completed by way of a series of Mann-Whitney U tests ($p < .05$). For example, significant differences in overall public speaking CA are measured through comparison of mean differences in PRPSA scores of the two participant groups. H4 is assessed by way of basic descriptive statistics.

**Threats to Validity**

As with any survey-driven research, threats to internal and external validity exist for the current study. Internally, issues of selection and participant communication can initially be seen as hurdles. In terms of selection, it is reasonable to question the influence of academic intelligence on the CA of each group. For instance, many participants without BSD are currently enrolled in college. This enrollment, in theory, denotes a degree of academic merit and motivation. The participant without BSD may or may not be currently enrolled in college. Does this make the unenrolled participant with BSD less inclined toward academic success? Perhaps. However, academic enrollment is not necessarily important because, as discussed in Chapter 2, intelligence (in this instance as measured through higher education enrollment), does not equate with lower or higher CA. A participant may have a low, medium, or high level of CA regardless of his or her current enrollment in higher education. Hence academically competitive institutions such as Penn State maintain multiple sections of general education public speaking courses designed and reserved for students with high CA.

It is possible that participants may communicate with one another about the content of the surveys and each other’s answers. Although such conversations could
possibly influence participant responses, it is expected that instances would be few and have minimal effect upon the outcome of the study. Even so, the researcher takes several precautions to limit this behavior. Each participant is provided with clear directions as to how the surveys should be completed so as to quell conversations between individuals who may be confused about how surveys are to be completed. Furthermore, each participant is told to contact the researcher if he or she has any inquiries about completion of the survey.

The study carries a potential threat to its external validity. Specifically, the generalizability of its findings could be called into question. With a high enough number of participants, the hypotheses will be tested in a manner that holds statistical cogency. However, the current study does not account for a variable that could potentially influence the application of its findings into the adult education classroom. Namely, instructors of public speaking courses contribute greatly to classroom environment and student engagement. For instance, the study’s findings may indicate that students without BSD are more motivated than students with BSD to pursue education related to public speaking. However, what happens in the case of students who do not have BSD but are enrolled in a public speaking class with a less empathetic instructor and henceforth lose motivation? These students may fit the statistical norm as defined by the current study, but endure a very different experience when actually in the classroom. This question indicates further investigation could be undertaken on this issue at a later time.

**Chapter Summary**
This chapter describes the methodology used in the current study. It opens with a statement of the study’s four hypotheses. From there, the chapter describes how participants are recruited from Penn State’s RePasSS system and IBPF’s email listserv. The third and largest portion of the chapter provides rationale for using the PRPSA, SCAM, SMS, GBM, and MDQ to test all four hypotheses. The chapter concludes with a description of data analysis using SPSS and potential threats to validity.
Chapter 4

Results

This chapter contains four sections detailing statistical findings of the study. The first section reiterates the study’s purpose and guiding research questions. The second section begins with a descriptive summary of the number of participants drawn from Penn State’s Research Participation Sign-Up System (RePaSS) and the International Bipolar Foundation (IBPF). Moreover, this first second section explains why some survey responses did not fit the parameters laid out for participants and, therefore, are not included in the study’s final statistical analysis. The third section clarifies the ranges and means of participant scores. This third section also discusses the rationale behind statistical methods used in testing the study’s hypotheses. The final section describes which null hypotheses of the study are retained and rejected.

Purpose of the Study and Research Questions

Bipolar spectrum disorder (BSD) is a psychopathology that, when present in an adult, will cause extreme mood changes known as manic and depressive episodes. Manic mood episodes are highlighted by symptoms such as elevated self-esteem, feelings of grandiosity, decreased amounts of sleep, fast paced speech, racing thoughts, distractibility, and excessive involvement in high risk behaviors. Depressive episodes involve a loss of interest in pleasurable activities, weight fluctuation, sleep disturbances, psychomotor agitation, and persistent feelings of worthlessness. As a spectrum disorder, types of BSD are distinguished by the duration and severity of manic symptoms in an
adult having the illness. Moreover, an adult with BSD does not perpetually experience manic and/or depressive mood states. Instead, an adult having BSD will frequently maintain a euthymic mood state for long periods of time, i.e., not show symptoms of mania or depression. Even during euthymic states, an adult with BSD may demonstrate impairments such as above average levels of neuroticism (Hirschfeld et al., 1986; Solomon et al., 1996) and introversion (Hirschfeld, 1985; Hirschfeld et al., 1986).

This study examines how adult learners with BSD feel about public speaking, a common activity in higher education classes. Specifically, the study focuses on levels of public speaking communication apprehension (CA) in adults with BSD. Public speaking CA, while a common phobia for all people, can have a negative effect on how well an adult presents his or her ideas to audiences of instructors and classmates. Therefore, this study is guided by four research questions (RQ):

RQ1: Does the adult student with BSD experience a level of public speaking CA higher than that of students who do not have BSD?

RQ2: Does the adult student with BSD experience public speaking CA for reasons that are different from those of students who do not have BSD?

RQ3: Does the adult student without BSD hold a more positive perception than the adult student with BSD of educational programs that lower public speaking CA?

RQ4: Does the adult student with BSD attribute his or her level of public speaking CA to having the illness?
Descriptive Statistics of Participants

Participants in the study are recruited from Penn State RePaSS and the IBPF email listserv. The overall goal of using participants from both Penn State RePass and IBPF is to locate people having and not having bipolar spectrum disorder (BSD). From Penn State RePaSS, 334 participants logged into and initially began answering the survey questions. From the IBPF email listserv, 21,988 people received the invitation-to-participate email. Of these 21,988 individuals, 2,751 opened the invitation-to-participate email. Of these 2,751 individuals, 360 clicked on the study link in the email and, at very least, began completing the surveys. Therefore, approximately 13% of people from the IBPF email listserv who opened the invitation-to-participate email at a minimum started the surveys.

While participants from both Penn State RePaSS and IBPF complete an identical set of surveys, some cases from both groups are eliminated from final statistical analysis for a variety of reasons. For example, some participants from both Penn State RePaSS (27) and IBPF (234) failed to fully complete the set of surveys. In a few cases (3) participants are believed to have not actually read the surveys, e.g., answering “1” on every single Likert-type item. Five participants are eliminated from analysis due to their being under the age of 18. While these underage participants technically finished the survey, in doing so they only answered one question about not being at least 18.

All participants included in final statistical analyses must meet specific criteria to be clearly categorized as having or not having BSD. In order to be considered as having
BSD, a participant must (1) screen positive on the Mood Disorder Questionnaire (MDQ) and (2) have been previously told by a health professional that he or she has BSD, i.e., has received a formal diagnosis. To be categorized as not having BSD, a participant must (1) screen nonpositive on the MDQ and (2) have never been told by a health professional that he or she has BSD. For this reason, many cases (335) are eliminated from final statistical analysis because the participant does not clearly meet the study’s standards for having or not having BSD, i.e., he or she has a positive MDQ screen but has never been told they have BSD by a health professional or has a nonpositive MDQ screen but has been told by a health professional he or she has BSD. The following table (Table 4.1) details the number of participants Penn State RePaSS and IBPF.
Table 4.1

*Reasons Participants are Left Out of Final Analysis*

<table>
<thead>
<tr>
<th>Reason for Exclusion</th>
<th>Penn State RePaSS</th>
<th>International Bipolar Disorder Foundation (IBPF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of people who started the surveys</td>
<td>334</td>
<td>360</td>
</tr>
<tr>
<td>...did not fully complete the surveys</td>
<td>27</td>
<td>234</td>
</tr>
<tr>
<td>...appeared to not read the surveys</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>...was underage</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>...had a positive MDQ screen but not a formal diagnosis</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>...had a formal diagnosis but not a positive MDQ screen</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Total eliminated from this group of participants</td>
<td>57</td>
<td>255</td>
</tr>
<tr>
<td>Total from this group used for final statistical analysis</td>
<td>277</td>
<td>105</td>
</tr>
</tbody>
</table>
In total, the study yields 382 participants whose answers are included in the final statistical analysis. Of these 382 participants, 285 meet the study’s standards for not having BSD while 97 reach its standards for having BSD. In sum, the study tests its hypotheses by comparing 285 participants not having BSD with 97 participants having BSD.

**Means, Ranges, and Levene’s Test for Equality of Variances**

As Table 4.2 shows, the range of scores on many surveys is fairly consistent between participants having nonpositive and positive screens for BSD. However, in three cases the maximum score seen in participants with a positive screen is distinctly lower than those with a nonpositive screen. Hypothesis 1 (H1), concerning a participant’s overall level of public speaking communication apprehension (CA), shows that scores on the Personal Report of Public Speaking Apprehension (PRPSA) range from 43 to 168 for participants screening nonpositive for BSD and 45 to 169 for those holding a positive screen. The ten versions of the Situational Communication Apprehension Measure (SCAM) meant to assess a participant’s CA in specific instances (Hypothesis 2) produce a somewhat similar outcome. In seven cases (novelty, unfamiliarity with audience, formality, subordinate status, conspicuousness, dissimilarity, and intensity of attention), the range of scores on the SCAM is between a minimum of 20 to 22 with a maximum in the high 120s to mid 130s for participants with both nonpositive and positive screens for BSD. In other words, the range of SCAM scores between both sets of participants on these seven items is comparable. Nonetheless, in three cases, the maximum SCAM score
for participants with a positive BSD screen is notably lower than those with a nonpositive screen (unfamiliarity with topic, degree of evaluation, and prior history). In the most extreme of these three cases, prior history, the maximum score attained by participants with a positive BSD screen is only 93 while it is 140 for participants with nonpositive screens. Hypothesis 3 (H3), gauging participants’ motivation to engage in education related to reducing public speaking CA, shows an identical range of scores between both sets of participants (Range= 10 to 70). Hypothesis 4 (H4), uses the Generalized Belief Measure (GBM) to measure how participants with a positive BSD screen feel having the illness affects their public speaking CA. GBM scores range from 5 to 35.
Table 4.2

Ranges, Means, Standard Deviations, and Levene’s Test for Equality of Variances

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Does not have BSD</th>
<th>Has BSD</th>
<th>$F (p &lt; .05)$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis #1:</strong> PRPSA</td>
<td>Range = 43 to 168</td>
<td>Range = 45 to 169</td>
<td>$F = 23.47$</td>
</tr>
<tr>
<td>(Range = 34 to 170)</td>
<td>$\bar{x} = 107.06$</td>
<td>$\bar{x} = 114.90$</td>
<td>$p = .000$</td>
</tr>
<tr>
<td></td>
<td>$SD = 23.05$</td>
<td>$SD = 31.22$</td>
<td></td>
</tr>
<tr>
<td><strong>Hypothesis #2:</strong> SCAM</td>
<td>Range = 20 to 135</td>
<td>Range = 20 to 129</td>
<td>$F = 11.19$</td>
</tr>
<tr>
<td>(Range = 20 to 140)</td>
<td>$\bar{x} = 77.61$</td>
<td>$\bar{x} = 71.25$</td>
<td>$p = .001$</td>
</tr>
<tr>
<td></td>
<td>$SD = 19.52$</td>
<td>$SD = 25.09$</td>
<td></td>
</tr>
<tr>
<td><strong>Novelty</strong></td>
<td>Range = 22 to 134</td>
<td>Range = 20 to 133</td>
<td>$F = 13.59$</td>
</tr>
<tr>
<td></td>
<td>$\bar{x} = 76.64$</td>
<td>$\bar{x} = 72.44$</td>
<td>$p = .000$</td>
</tr>
<tr>
<td></td>
<td>$SD = 19.97$</td>
<td>$SD = 26.32$</td>
<td></td>
</tr>
<tr>
<td><strong>Unfamiliar with Audience</strong></td>
<td>Range = 20 to 134</td>
<td>Range = 20 to 110</td>
<td>$F = 6.83$</td>
</tr>
<tr>
<td></td>
<td>$\bar{x} = 60.49$</td>
<td>$\bar{x} = 51.31$</td>
<td>$p = .009$</td>
</tr>
<tr>
<td></td>
<td>$SD = 19.88$</td>
<td>$SD = 23.42$</td>
<td></td>
</tr>
<tr>
<td><strong>Formality</strong></td>
<td>Range = 20 to 130</td>
<td>Range = 20 to 127</td>
<td>$F = 19.30$</td>
</tr>
<tr>
<td></td>
<td>$\bar{x} = 71.94$</td>
<td>$\bar{x} = 62.88$</td>
<td>$p = .000$</td>
</tr>
<tr>
<td></td>
<td>$SD = 19.71$</td>
<td>$SD = 26.28$</td>
<td></td>
</tr>
<tr>
<td><strong>Subordinate Status</strong></td>
<td>Range = 20 to 133</td>
<td>Range = 20 to 128</td>
<td>$F = 12.78$</td>
</tr>
<tr>
<td></td>
<td>$\bar{x} = 68.86$</td>
<td>$\bar{x} = 61.25$</td>
<td>$p = .000$</td>
</tr>
<tr>
<td></td>
<td>$SD = 21.50$</td>
<td>$SD = 26.39$</td>
<td></td>
</tr>
<tr>
<td><strong>Conspicuousness</strong></td>
<td>Range = 20 to 133</td>
<td>Range = 20 to 134</td>
<td>$F = 34.86$</td>
</tr>
<tr>
<td></td>
<td>$\bar{x} = 75.48$</td>
<td>$\bar{x} = 66.55$</td>
<td>$p = .000$</td>
</tr>
<tr>
<td></td>
<td>$SD = 22.33$</td>
<td>$SD = 31.29$</td>
<td></td>
</tr>
<tr>
<td><strong>Dissimilarity</strong></td>
<td>Range = 20 to 128</td>
<td>Range = 20 to 123</td>
<td>$F = 44.46$</td>
</tr>
<tr>
<td></td>
<td>$\bar{x} = 74.96$</td>
<td>$\bar{x} = 70.38$</td>
<td>$p = .000$</td>
</tr>
<tr>
<td></td>
<td>$SD = 18.33$</td>
<td>$SD = 28.76$</td>
<td></td>
</tr>
<tr>
<td><strong>Intensity of Attention</strong></td>
<td>Range = 20 to 134</td>
<td>Range = 20 to 138</td>
<td>$F = 31.82$</td>
</tr>
<tr>
<td></td>
<td>$\bar{x} = 66.34$</td>
<td>$\bar{x} = 64.89$</td>
<td>$p = .000$</td>
</tr>
<tr>
<td></td>
<td>$SD = 21.33$</td>
<td>$SD = 31.62$</td>
<td></td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Range</td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>------------</td>
<td>-------</td>
<td>------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Degree of Evaluation</td>
<td>20 to 137</td>
<td>71.53</td>
<td>22.25</td>
</tr>
<tr>
<td>Prior History</td>
<td>20 to 140</td>
<td>59.57</td>
<td>20.08</td>
</tr>
<tr>
<td>Hypothesis #3: SMS</td>
<td>10 to 70</td>
<td>44.01</td>
<td>13.77</td>
</tr>
<tr>
<td>Hypothesis #4: GBM</td>
<td>5 to 35</td>
<td>24.45</td>
<td>10.29</td>
</tr>
</tbody>
</table>

Note: $\bar{x}$ = Mean; SD=Standard deviation; $F$ = Levene’s Test for Equality of Variances; $p$=Significance
An interesting tendency is seen between mean scores on all surveys. In terms of H1, on average, participants with a positive BSD screen ($\bar{x} = 114.90, SD = 31.22$) score more than seven points higher than those with a nonpositive screen ($\bar{x} = 107.06, SD = 23.05$) on the PRPSA. While both of these tallies fall close to previously established means for the PRPSA (McCroskey, 1970; $\bar{x} = 114.6; SD = 17.05$), it is worth initially noting that participants in this study with a positive BSD screen do in fact show a slightly higher level of generalized public speaking CA. However, when looking at H2, on every single version of the SCAM, mean scores of participants with a positive BSD screen are actually lower than those with a nonpositive screen. For example, on the prior history SCAM participants with a nonpositive BSD screen score ($\bar{x} = 59.57, SD = 20.08$) while those with a positive screen score $\bar{x} = 49.48$, a full ten points lower. In contrast to H1, SCAM means indicate that participants with a positive BSD screen might actually have less public speaking CA when they are asked about feelings of apprehension in the framing of a certain circumstance or situation. When looking at H3, participants with a positive BSD screen ($\bar{x} = 48.82, SD = 15.30$) also score higher on the Student Motivation Scale (SMS) than those with a nonpositive BSD screen ($\bar{x} = 44.01, SD = 13.77$). This seems to initially indicate that participants with a positive BSD screen are more motivated to participate in education that could lower their public speaking CA. While not used to compare the two groups of participants (because it is only given to participants with a positive screen), the mean for the GBM survey is 24.45 ($SD = 10.29$).
Table 4.2 also displays results from Levene’s Test for Equality of Variances. Levene’s Test provides data about the normality of distribution between mean averages taken from participants with and without positive screens for BSD. This test is critical to the study because it informs which analysis should be used to test, and ultimately retain or reject, null hypotheses. At least two events can lead to significant Levene scores, i.e., score distributions between two populations being unequal in variance: (1) unusually broad spreads of scores and (2) bimodal distributions. Looking at the spread of scores between both groups of participants it is easy to see that, in terms of standard deviation, a greater variation exists for participants with a positive BSD screen on all surveys. For example, on the dissimilarity SCAM there exists a more than 10 point difference in standard deviation ($SD=18.33$ for nonpositive screens, $SD=28.76$ for positive screens). Figure 4.1 provides a visual depiction of how large differences in standard deviations affect overall distributions of scores. Triangle A roughly outlines the majority of scores for participants with nonpositive screens on this version of the SCAM; these scores largely center on the middle of the distribution. Triangle B generally outlines the broader distribution of scores of participants with positive screens for BSD on the dissimilarity SCAM; these scores are more broadly spread out across the entire distribution.
Figure 4.1  How Differences in Standard Deviation Affect Overall Distributions of Scores
Furthermore, histograms (Appendix F) show scores from participants with positive BSD screens tend to create bimodal distributions while those from participants with nonpositive screens create a more common unimodal distribution. A bimodal distribution of scores occurs when a majority of participant scores gather around two separate areas of a distribution. A unimodal distribution occurs when a majority of scores appear on one area of a distribution. Figure 4.2 shows how formality SCAM scores from participants with positive BSD screens actually peak at two different points on the distribution.
Figure 4.2 Example of a Bimodal Distribution
Indeed, Levene’s Test indicates a significant difference ($p<.05$) exists between the distribution of scores for both sets of participants on all but one survey device (SMS; $p=\cdot.311$). Because of these statistically significant Levene’s results, the study’s hypotheses are tested using Mann-Whitney U analysis (Field, 2009). Histograms showing the distributions of scores on all surveys are listed in Appendix F.

**Testing for Significant Differences: Mann-Whitney U**

Table 4.3 displays results of Mann-Whitney U tests for the data set. Significance for this test is set at ($p<.05$) on all survey response pairings. H1, regarding participants’ overall level of public speaking CA, reveals a statistically significant difference between mean scores on the PRPSA for nonpositive BSD participants and their lower scoring counterparts who have a positive screen ($U= 11670.00$, $p= .022$). This significant difference in PRPSA scores means the null of H1 can be rejected. Responses on SCAM surveys, meant to test H2, garner interesting results from Mann-Whitney U analysis. Of the ten different situations described to participants by way of the SCAM, six (novelty, unfamiliarity with topic, formality, subordinate status, conspicuousness, and prior history) result in significant differences between participants with and without positive BSD screens. For example, the difference in scores on the formality SCAM is quite distinct ($U= 11104.00$, $p= .004$). On these six items, the null hypothesis can be rejected. At the same time, a significant difference in mean score is not seen on four sets of the SCAM (unfamiliarity with audience, dissimilarity, intensity of attention, and degree of evaluation). For instance, the difference in scores on the intensity of attention SCAM is
not distinguishable ($U = 13019.5, p = .393$). Therefore, the null hypothesis of these four must be retained. H3 dealing with motivation to engage in public speaking education, based on the SMS, also results in a significant statistical difference ($U = 10562.00, p = .001$) between participants with and without positive BSD screens. The null of H3 can also be rejected.
Table 4.3

*Differences in Means, Mann-Whitney U, and Retaining/Rejecting Null Hypotheses*

<table>
<thead>
<tr>
<th>Hypothesis #1: PRPSA</th>
<th>Difference in Mean Scores</th>
<th>Mann-Whitney U (p&lt;.05)</th>
<th>Retain or Reject Null Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range = 34 to 170</td>
<td><strong>7.84</strong></td>
<td>U = 11670.00</td>
<td>Reject</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = .022</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hypothesis #2: SCAM</th>
<th>Difference in Mean Scores</th>
<th>Mann-Whitney U (p&lt;.05)</th>
<th>Retain or Reject Null Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range = 20 to 140</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Novelty</td>
<td>*6.36</td>
<td>U = 11795.50</td>
<td>Reject</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = .031</td>
<td></td>
</tr>
<tr>
<td>Unfamiliar with Audience</td>
<td>*4.20</td>
<td>U = 12538.5</td>
<td>Retain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = .172</td>
<td></td>
</tr>
<tr>
<td>Unfamiliar with Topic</td>
<td>*9.18</td>
<td>U = 10443.00</td>
<td>Reject</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = .000</td>
<td></td>
</tr>
<tr>
<td>Formality</td>
<td>*9.06</td>
<td>U = 11104.00</td>
<td>Reject</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = .004</td>
<td></td>
</tr>
<tr>
<td>Subordinate Status</td>
<td>*7.61</td>
<td>U = 11601.00</td>
<td>Reject</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = .018</td>
<td></td>
</tr>
<tr>
<td>Conspicuousness</td>
<td>*8.93</td>
<td>U = 11527.5</td>
<td>Reject</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = .015</td>
<td></td>
</tr>
<tr>
<td>Dissimilarity</td>
<td>*4.58</td>
<td>U = 13222.00</td>
<td>Retain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = .522</td>
<td></td>
</tr>
<tr>
<td>Intensity of Attention</td>
<td>*1.45</td>
<td>U = 13019.5</td>
<td>Retain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = .393</td>
<td></td>
</tr>
<tr>
<td>Degree of Evaluation</td>
<td>*5.39</td>
<td>U = 12586.00</td>
<td>Retain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = .188</td>
<td></td>
</tr>
</tbody>
</table>
Prior History  *10.49  \( U = 10288.00 \)  Reject
\( p = .000 \)

Hypothesis #3: SMS  *4.81  \( U = 10562.00 \)  Reject
Range = 10 to 70  \( p = .001 \)

Hypothesis #4: GBM  Not applicable  Not applicable  Not applicable
Range = 5 to 35

Note: **= \( \bar{x} \) of participants with positive BSD screen > \( \bar{x} \) of participants with nonpositive BSD screen; *= \( \bar{x} \) of participants with nonpositive BSD screen > \( \bar{x} \) of participants with positive BSD screen;  \( U = \) Mann-Whitney U;  \( p = \) Significance
Chapter Summary

This chapter reports the statistical findings of the study. It begins with a detailed explanation of which participant responses are and are not used in testing the study’s research questions and hypotheses. Participant exclusion is based upon a number of criteria including participants not completing all the surveys or failing to clearly fall into the study’s criteria for a positive or nonpositive BSD screen. From there, the chapter provides results for Levene’s Test for Equality of Variances. This test indicates that a significant variance exists in the distribution of participant scores on all but one survey. Based on these results, the chapter ends by displaying results for a series of Mann-Whitney U analyses of mean scores and naming which null hypotheses can and cannot be rejected.
Chapter 5

Discussion

This chapter contains seven sections providing a discussion about results of the study. It begins with a restatement of the study’s purpose and research questions. The second section interprets results listed in the previous chapter in non-statistical terms and relation to the study’s research questions and hypotheses. The third section describes ways in which the study fits within and informs growing bodies of research on emotions in adult education. The fourth section outlines manners in which the study relates to previous research on the technical/rational approach to teaching students with disabilities and systematic desensitization. The fifth section lists several implications for practice that can be incorporated by educators working with students having bipolar spectrum disorder (BSD) and high public speaking communication apprehension (CA). The sixth section frames the study’s generalizability based on shared characteristics of participants. The chapter concludes by providing recommendations for future research on BSD and CA in adult learners.

Purpose of the Study and Research Questions

This study examines the relationship between public speaking communication apprehension (CA) and bipolar spectrum disorder (BSD) in adult learners having the illness. Public speaking is a common activity for adult learners to engage in while enrolled in higher education. This activity typically involves the learner standing in front of his or her instructor(s) and classmates for the purpose of delivering speeches on topics
related to course content, often times as a graded assessment. The Association of American Colleges and Universities suggests public speaking as a skill so necessary to formal learning that it should be included across general education curricula and throughout a student’s major courses. However, many students in higher education experience high levels of anxiety when posed with public speaking assignments. While public speaking CA is quite common, its presence can limit a student’s effectiveness at the task and overall comfort within a classroom. Moreover, students with certain disabilities, such as bipolar spectrum disorder (BSD), may be more susceptible to public speaking CA.

BSD is a psychopathology including a combination of manic and depressive symptoms. Manic symptoms include unhealthy feelings of grandeur, lack of sleep, participation in high risk behaviors, racing thoughts, and hastened speech. Depressive symptoms include fatigue, feelings of sorrow, weight fluctuation, and psychomotor impairment. Depending on the duration and severity of his or her symptoms, an adult having BSD can be diagnosed with BD1, BD2, or BD-OS (otherwise specified). Although BSD symptoms can be severe, they are not ever-present in those having the illness. Instead, adults with BSD will experience periods of euthymia, or relatively stable moods. Even so, a potential link exists between high public speaking CA and personality traits coinciding with BSD manic, depressive, and euthymic mood states, i.e., neuroticism (Hirschfeld et al., 1986; Solomon et al., 1996) and introversion (Hirschfeld, 1985;
Hirschfeld et al., 1986). Therefore, this study centers on four research questions concerning public speaking CA in adult learners with BSD:

RQ1: Does the adult student with BSD experience a level of public speaking CA higher than that of students who do not have BSD?

RQ2: Does the adult student with BSD experience public speaking CA for reasons that are different from those of students who do not have BSD?

RQ3 Does the adult student without BSD hold a more positive perception than the adult student with BSD of educational programs that lower public speaking CA?

RQ4: Does the adult student with BSD attribute his or her level of public speaking CA to having the illness?

**Interpreting Statistical Outcomes and Testing Hypotheses**

This section interprets statistical findings reported in Chapter 4 into non-statistical language. The section begins by detailing the vast number of individual answers (data points) provided by every included participant. From there, definitive statements are made about which research hypotheses can and cannot be accepted. The section concludes with recommendations for future research using the measurement tools utilized by the study.

**Vast Number of Data Points Created By the Study**

This study investigates the public speaking CA of adults with and without BSD. In order to assess its research questions and hypotheses, participant scores on a host of psychometric scales are compared to one another. These scales include the Personal
Report of Public Speaking Anxiety (PRPSA), ten versions of the Situational Communication Apprehension Measure (SCAM), Student Motivation Scale (SMS), and Generalized Belief Measure (GBM). Participants complete the PRPSA, ten versions of the SCAM, SMS, and GBM online through Qualtrics. Individual participant answers from Qualtrics are entered into an SPSS spreadsheet for analysis. In the generated spreadsheet, a data point is understood to be the numeric value placed into one SPSS data set cell for every individual answer on a given scale. For example, because it contains 34 Likert-type statements, the PRPSA creates 34 data points, or SPSS cells, per participant. Each cell on the generated SPSS data spreadsheet represents only one of the Likert-type statements taken from either the PRPSA, SCAM, SMS, or GBM. Participants without BSD each provide 244 data points (SPSS cells) of information. Participants with BSD each provide 249 such data points. This five data point difference is due to only participants with BSD completing the GBM. Table 5.1 details the vast number of individual data points (SPSS cells) gathered through the study. In total, 93,693 data points are gathered from all participants to describe average levels of overall public speaking CA (PRPSA), situational public speaking CA (ten versions of the SCAM), feelings about public speaking education (SMS), and belief that having BSD contributes to personal public speaking CA. It is important to note that this robust number, 93,693, does not include data points (SPSS cells) related to BSD screening by way of the Mood Disorder Questionnaire (MDQ).
Table 5.1

*Number of Communication Apprehension Data Points Generated by the Study*

<table>
<thead>
<tr>
<th>Name of Scale</th>
<th># of Items on Scale</th>
<th># of SPSS Data Points Created by the Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Report of Public Speaking Anxiety (N=382)</td>
<td>34 items</td>
<td>12,988 SPSS cells</td>
</tr>
<tr>
<td>Situational Communication Apprehension Measure (N=382)</td>
<td>20 items/version (x10)</td>
<td>200 items/participant</td>
</tr>
<tr>
<td>Student Motivation Scale (N=382)</td>
<td>10 items</td>
<td>3,820 SPSS cells</td>
</tr>
<tr>
<td>Generalized Belief Measure (N=97)</td>
<td>5 items</td>
<td>485 SPSS cells</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>93,693 SPSS cells</strong></td>
</tr>
</tbody>
</table>
This section interprets statistical outcomes of the study and describes in which cases hypotheses can and cannot be accepted. All but the fourth hypothesis (H4) is tested by comparing 97 sets of surveys from participants with a positive screen for BSD against 285 sets of surveys from participants with a nonpositive screen for BSD. As described in its section, H4 allows only for descriptive statistical analysis.

**Hypothesis #1 (H1): Overall Level of Public Speaking CA**

H1 proposes “Adult students with BSD experience an overall level of public speaking CA that is significantly higher than students who do not have BSD.” This hypothesis is tested by comparing participant scores on the Personal Report of Public Speaking Anxiety (PRPSA). Indeed, a statistically significant difference exists between PRPSA scores from these two sets of participants ($U = 11670.00, p = .022$). Participants with a nonpositive BSD screen ($\bar{x} = 107.06, SD = 23.05$) score 7.84 points lower on the PRPSA than participants with a positive screen ($\bar{x} = 114.90, SD = 31.22$). However, both of these means, 107.06 and 114.90 respectively, fall well within previously established norms on the PRPSA ($\bar{x} = 114.6, SD = 17.2$) (McCroskey, 1970). Participants in the study holding nonpositive BSD screens actually average PRPSA scores that are slightly below established norms for the survey. Therefore, while a difference exists in overall public speaking CA between participants with and without BSD, this part of the study indicates that such a variance is not high enough to clearly place the average participant with BSD into, or even close to, the “high” category (>131) for PRPSA scores. Overall levels of public speaking CA in participants with BSD are, in a word, normal. Based on
these findings, H1 can be statistically accepted, if done so with a degree of careful reservation and attention paid to the fact that the mean score from participants with BSD matches that of the survey’s developers. Moreover, results from H1 are quite interesting when compared to those from H2.

**Hypothesis #2 (H2): Levels of Public Speaking CA in Various Situations**

H2 proposes “Adult students with BSD experience public speaking CA for reasons that are different from students who do not have BSD.” This hypothesis is tested by applying ten versions of the Situational Communication Apprehension Measure (SCAM). Results from application of the ten versions of the SCAM are quite noteworthy. In all ten instances, participants with a positive BSD screen score lower on the SCAM than their nonpositive counterparts. Participants with positive BSD screens do not demonstrate levels of public speaking CA higher than their nonpositive counterparts in any of the described situations. In four cases the differences in SCAM means are not statistically significant (unfamiliarity with audience members, dissimilar from audience members, intensity of attention from audience members, and degree of evaluation). However, in six cases differences in SCAM means are statistically significant (novelty of speech type, unfamiliarity with topic, formality of speech, subordinate status, conspicuousness, and prior history). Based on these statistical findings, H2 cannot be accepted based.

Although H2 cannot be accepted, an interesting trend is seen between situations resulting in statistically significant results between the two pools of participants. Each of
the ten SCAM versions fall broadly into either one of two categories: (1) SCAMs asking
the participant how he or she feels in relation to audience members and (2) SCAMs
asking how he or she feels about elements of public speaking other than relations to
audience members. For example, the “Unfamiliarity with audience” SCAM clearly asks
the participant about feelings when talking to a room of strangers. On the other hand,
“Novelty of speech type” does not deal with feelings about audience members. Instead,
this SCAM focuses on feelings about delivering a new type of address; one with which
the participant has no previous experience. Table 5.2 details how each of the ten
versions of the SCAM are categorized.
Table 5.2

*Distribution of SCAM Scores*

<table>
<thead>
<tr>
<th>Audience-related versions of the SCAM</th>
<th>Non-audience versions of the SCAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unfamiliarity with audience</td>
<td>Novelty of speech type*</td>
</tr>
<tr>
<td>Dissimilar from audience</td>
<td>Unfamiliarity with speech topic*</td>
</tr>
<tr>
<td>Intensity of attention from audience</td>
<td>Formality of speech type*</td>
</tr>
<tr>
<td>Degree of evaluation by an audience</td>
<td>Conspicuousness*</td>
</tr>
<tr>
<td>Subordinate status*</td>
<td>Prior history*</td>
</tr>
</tbody>
</table>

*Note: * = tested significantly different using Mann-Whitney U*
Statistically significant differences are seen in all five versions of the SCAM focusing on issues related to public speaking other than perceived relationship with audience members. Conversely, only one SCAM (subordinate status) concerning participant relation to audience members nets a significant difference between participants with and without positive BSD screens. This result provides indication that, while both sets of participants feel similarly about audience members, those with BSD actually feel more comfortable in terms of delivering (1) new types of speeches (novelty), (2) speeches on foreign topics (unfamiliarity with topic), (3) speeches with many rules attached to them (formality), (4) speeches in which the speaker cannot use visual aids (conspicuousness), and (5) speeches in which the speaker has previously delivered a similar address that did not go well (prior history).

A potentially exciting inference can be drawn from the study’s application of the SCAM, even if none of H2 is accepted. Bearing in mind that H1 and H2 ask participants about feelings of public speaking CA, SCAM results are essentially the opposite of those provided by the PRPSA. Whereas the PRPSA finds overall levels of public speaking CA to be slightly higher in adults with BSD, the SCAM shows that participants having the illness report lower levels of anxiety when public speaking is explained to them in descriptive terms and specific scenarios. In other words, adults with BSD shift from being more nervous than the general population to less nervous than the general population based on how distinctly a communication task is described to them. An initial
suggestion for educators working with learners having BSD would be to describe learning assessments in a variety of ways and with great depth. This study indicates that doing so may not only lower apprehension in learners with BSD, but actually make them more comfortable than learners without the illness.

**Hypothesis #3 (H3): Perceptions of Education Meant to Alleviate CA**

H3 proposes “Adult students without BSD will hold a more positive perception than adult students with BSD in terms of the potential benefits of educational programs that lower public speaking CA.” This hypothesis is tested by comparing participant scores on the Student Motivation Scale (SMS). Participants with positive BSD screens actually show a significantly higher level of motivation when it comes to engagement in educational programs designed to lower public speaking CA. Therefore, H3 cannot be accepted.

Although H3 cannot be accepted, an interesting comparison can be made between it and H2. As it is used in this study, the SMS has participants consider their levels of motivation in very specific terms, i.e., education that can lower public speaking CA. The SMS is not worded in a broad way, e.g., “How do you feel about learning?” Like H2, having questions described in clear and certain contexts generates results in which adults with BSD show better feelings about public speaking CA than people not having the illness. This finding seems to further support the idea that a relationship exists between how vividly public speaking is described to adults with BSD and how they feel about it. Future research could investigate if adult students with BSD report lower levels of
motivation for learning when being asked more general questions, e.g., “How do you feel about taking college classes?”.

**Hypothesis #4 (H4): Belief That Having BSD Causes CA**

H4 proposes “Adult students with BSD believe that having BSD contributes to their public speaking CA.” It is important to note that H4 is not tested by comparing average scores between the study’s populations. Instead, H4 provides a statistical description of how participants with BSD feel having the disorder affects their public speaking CA. The mean GBM score for participants with BSD is 24.45. Given that the GBM carries five 7-point Likert-type statements and a possible score range of 5 to 35, the average rating for each item is 4.89. This means that, on average, participants with BSD have “no feeling” to a “fairly weak feeling” that having BSD affects their level of public speaking CA. While a correlation cannot be established using only one of the study populations, application of the GBM indicates that participants with BSD do not feel strongly that having the illness negatively influences their public speaking CA.

**How Findings Support Previous Research on Emotions in Adult Learning**

Beyond testing hypotheses, the study provides new insight about emotions in adult learners with BSD. The following three sections discuss the study in relation to previous research on emotions and learning from the field of adult education. As more fully detailed in the literature review of Chapter 2, these three areas of research are the (1) five stimuli and three dimensions of learning (Illeris, 2000), (2) five components of emotions (Sutton & Wheatley, 2003) in relation to communicobiology (McCroskey & Beatty, 2000),
as well as (3) in-class causes of emotional change in adult learners (Dirkx, 2008; Kasworm, 2008; Isserlis, 2008). Each of these three sections concludes with recommendations for future investigation of BSD, CA, and the described area of adult education research.

**Five Stimuli and Three Dimensions of Learning (Illeris, 2000) and the Mood States of Participants**

Studying a group of adults all having a mental disability such as BSD raises at least one question about inclusion: Are participants with BSD currently experiencing manic feelings, depressive symptoms, or euthymic mood states when completing the study’s lengthy set of surveys? Indeed, the presence of mania or depression could influence how a participant answers his or her surveys. Although this study assumes participants with BSD are euthymic, the only way to be sure these individuals are not currently experiencing mood episodes would be to have each of them undergo diagnoses by appropriate health professionals at the time of their completing the surveys. While this study attempts to accurately locate adults having BSD by way of a positive MDQ screen and affirmative responses about previous diagnoses, it does not specifically assess each participant’s current mood state, i.e., being manic, depressed, or euthymic, when filling out the study’s surveys. However, full completion of the surveys helps provide indication that participants are, in fact, euthymic at the time of their completing the surveys.

Analysis of participation by way of Illeris’s five stimuli and three dimensions of learning supports the notion that participants with BSD are likely experiencing level, euthymic
mood states and not full manic or major depressive episodes at the time they complete the surveys.

Recalling information from the review of literature in Chapter 2, Illeris (2002) suggests that learning involves five types of stimuli: perception, transmission, experience, imitation, and activity. More than one of these stimuli may occur for a learner at a specific moment in time and need not happen in a specific order. In turn, exposure to these five stimuli molds an adult’s three learning dimensions: cognition, emotion, and socialization. Tables 5.3 offers a review of Illeris’s five stimuli and three dimensions of learning.
Table 5.3

*Illeris’s Five Learning Stimuli of and Three Dimensions Learning*

<table>
<thead>
<tr>
<th>Five Types of Learning Stimuli</th>
<th>How This Type of Learning Stimulus Takes Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perception</td>
<td>Learner uses his or her five senses to witness the world in an unmediated way, i.e., learner simply looks at (listens to, feels, smells, and tastes) what is around him or her.</td>
</tr>
<tr>
<td>Transmission</td>
<td>Learner receives information from an outside source.</td>
</tr>
<tr>
<td>Experience</td>
<td>Learner participates in an activity in which transmission is not the primary means of learning.</td>
</tr>
<tr>
<td>Imitation</td>
<td>Learner models his or her actions after some other person or example.</td>
</tr>
<tr>
<td>Activity</td>
<td>Learner engages in goal-oriented activities within a group.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Three Dimensions of Learning</th>
<th>What the Learner Does During This Dimension of Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive</td>
<td>“knowledge and motor learning, both of which are controlled by the central nervous system” (Illeris, 2002, p. 18)</td>
</tr>
<tr>
<td>Emotional</td>
<td>“psychological energy, transmitted by feelings, emotions, attitudes and motivations which both mobilize and, at the same time, are conditions that may be influenced and developed through learning” (Illeris, 2002, p. 18)</td>
</tr>
<tr>
<td>Societal</td>
<td>“external interaction, such as participation, communication, and cooperation. It serves as the personal integration in communities and society and thereby builds up the sociality of the learner” (2004, p. 83)</td>
</tr>
</tbody>
</table>
Applying Illeris’s five stimuli, participation in the study by adults having and not having BSD can be conceptualized as learning. Whether recruited from Penn State’s Research Participation Sign-Up System (RePaSS) or the International Bipolar Foundation (IBPF), a participant navigates a series of learning stimuli similar to that of all other participants. In sequence, a participant turns on his or her computer, looks at a monitor, and opens an invitation email. This initial set of actions, although sounding somewhat elementary, acts as perception. Bear in mind that perception stimuli can be difficult for adults with other types of sensory disabilities. From there, if a participant wishes to join in the study, he or she reads the transmitted invitation email for further instructions. After reading the transmitted invitation email, the participant may choose to click on a link forwarding him or her to the online Qualtrics survey. As Qualtrics begins, an example shows how a participant can point and click on his or her answers for the surveys. A participant imitates this “point-and-click” action throughout completion of the surveys. While a participant’s performing these perception, transmission, and imitation tasks means that he or she technically demonstrates learning, doing so provides little analyzable data about adults having and not having BSD. However, as Illeris further points out, learning also involves more complex experiences and activities.

Another of Illeris’s stimuli, experience, offers insight into whether or not study participants with BSD are in the midst of euthymic mood states. Participation in the study is a fairly rigorous experience. A participant attentively reads over 240 statements,
considers his or her feelings on each, clicks on answers, and occasionally checks for missed survey items. Full completion of the surveys takes approximately 45 minutes. Completion of such a lengthy experience provides judgment into whether or not participants with BSD are manic, depressed, or euthymic. Completing such a lengthy, detailed experience could be difficult, if not impossible, for an adult in the middle of a manic or depressive state. Inability to complete the surveys could be attributed to manic or depressive cognitive deficits such as racing thoughts, high irritability, hindered concentration, and/or extreme fatigue. However, for an adult with BSD in a euthymic mood state, completing a set of surveys is likely not much more, if at all, taxing than it is for people without BSD.

Illeris also mentions learning involves goal-oriented activities taking place in groups. Learners can work together on activities and toward goals so that members of the group may all benefit in some way. In turn, involvement in group activities can influence an adult’s emotions and perceived purpose and position within society. Participants with BSD must realize their inclusion in the study creates a societal benefit concerning research about emotions and mood disorders; they are told as much in the invitation email. Examination of the study’s rates of attrition offers further explanation as to how participants with BSD demonstrate not just cognitive ability, but also larger societal awareness.

Rates of attrition are noted when a participant either fails to complete the surveys or clearly does not read questions, e.g., answering “1” to every single Likert-type
statement, indicating how frequently people with and without BSD decide to discontinue learning. Nearly 9% of participants drawn from RePaSS either fail to complete all of the surveys or answer survey questions in a manner indicating they did not actually read questions. In comparison, 65% of participants drawn from IBPF start but do not complete the surveys. It is important to keep in mind that nearly all of the study’s 97 participants with positive BSD screens are drawn from the IBPF; only two come from RePaSS. At first glance this difference may seem surprising; only 35% of participants with BSD completed the full activity of answering all of the surveys. However, a very meaningful difference in participant experience can explain these varying rates of attrition. Participants drawn from RePaSS, essentially all of those with nonpositive BSD screens, are told during their recruitment emails (and by professors in their classes) that participation is essentially required as a part of their current enrollment in CAS100, *Effective Speech*; they must complete the surveys in order to receive 2% of their overall grade in the class. Granted, participation in a university approved research study is rarely if ever wholly “required” and these students may opt out of RePaSS in favor of completing a different assignment. Even so, this groups of participants, who almost exclusively do not have positive BSD screens, are participating under a clear and certain type of pressure, i.e., “Either participate or lose 2% off your final grade in a class.”

On the other hand, participants drawn from IBPF, making up nearly 98% of all positive BSD screens in this study, enjoy an essentially pressureless invitation to participate. These participants are not told that failure to participate, i.e., join the activity,
will lead to some personally accrued punishment. Instead, IBPF participants are told completing the surveys provides them with the chance to win a $200 gift card to Amazon.com. Losing nothing by way of a grade in a class, IBPF participants assuredly feel much more freedom to click on the survey link, casually check out its first few questions, and, ultimately, decide they are not interested in the experience. Such a choice does not mean that participants with BSD are incapable of finishing the learning experience; they may simply not feel compelled to do so. Indeed, this is a case in which correlation and causation must not be confused for one another. Viewed through a more optimistic lens, 97 adults are able to complete this fairly rigorous learning experience. It is possible, if not likely, that at least a few participants with BSD are experiencing a mood fluctuation at the time they complete the surveys.

In summary, both sets of participants, those with and without BSD, demonstrate similar learning abilities in terms of perception, transmission, and imitation. Furthermore, while participants without BSD (mainly coming from RePaSS) possibly feel more pressure to complete the surveys, both groups work through an identical learning experience, i.e., finishing the surveys. However, because they are not as pressured to finish the surveys, participants with BSD (mostly from the IBPF) actually demonstrate a deeper type of learning than those without BSD. As previously noted, participants from RePaSS share two common characteristics: (1) they are pressured into completing the surveys and (2) barely any of them have a positive BSD screen. On the other hand, participants from IBPF share an opposite pair of characteristics; they (1) they are not
greatly pressured into completing the surveys and (2) almost all have BSD. In terms of
motivation, while the study informs IBPF participants about the drawing for a $200
Amazon gift card, it also mentions that the odds of winning are, in a word, slight.
Moreover, the IBPF participants are told that completion of the surveys will allow for
publishable research meant to benefit the BSD community. In other words, IBPF
participants know they are most likely completing the surveys for a societal purpose more
so than for a personal financial gain. This type of activity stimuli shows that IBPF
participants are willing to engage in learning dimensions beyond mere cognition (although
cognition is required for completion of the surveys). Instead, it can be argued that these
participants want to understand their emotions and contribute to new knowledge that can
potentially further include them in and benefit the BSD community as a whole. Their
learning pulls them into a community of research while also helping a larger community
of adults with BSD. It is important to bear in mind the study does not support the notion
that participants without BSD (almost exclusively from RePaSS) are incapable of societal
learning; they very well might be. Instead, because of pressure to participate, these
participants are likely not completing the surveys because they believe doing so helps
certain members of society.

In summary, all participants demonstrate similar perception, transmission,
imitation, experience, and activity capabilities by fully completing the surveys.
Furthermore, participants with and without BSD show similar levels of cognition in terms
of reading and following survey instructions. Due to the lack of pressure placed upon
them and only having a slight chance of receiving financial reward for finishing the surveys, participants with BSD also display a degree of societal engagement by helping out with research about emotions. While Illeris’s model must not be confused with an actual euthymic diagnosis, it helps explain the study’s research assumption that participants with BSD are in a relatively stable, non-manic, non-depressive state at the time of completion survey.

Future research on the topic of BSD and public speaking CA could purposely attempt to locate and survey participants during their euthymic, manic, and depressive mood states. Indeed, it would be interesting as well as medically beneficial to learn if and/or how adults with BSD are able to complete online learning tasks during manic and depressive mood states, i.e., How far can they progress through the stages of perception-transmission-experience-imitation-activity? Furthermore, this type of research could assess how adults with BSD feel about public speaking during all three types of moods, e.g., Do participants feel better or worse about public speaking when they are euthymic, manic, or depressed? Such research would almost assuredly be time consuming and complicated. First, it would require application of ongoing formal diagnoses for all participants, not interpretative indication of euthymia offered by way of Illeris’s model of learning. Versions of the PRPSA, SCAM, SMS, and GBM might have to be altered to compensate for manic and depressed participants. This type of study would also require tracking participants over long periods of time, waiting for them to enter all three mood states.
Five Components of Emotions of Adult Education in Unison With Communibiology

(Sutton & Wheatley, 2003; McCroskey & Beatty, 2000)

Chapter 2 presents the argument that Sutton and Wheatley’s (2003) five components of emotions in adult education mirror McCroskey and Beatty’s (2000) concept of communibiology. Sutton and Wheatley suggest that an adult learner navigates five components of emotion during learning: (1) appraisal of significance, (2) physiological changes, (3) affect expressions, (4) action tendencies, and (5) subjective experience. These components tend to follow one another chronologically. That is to say, a learner will appraise significance of a learning situation before entering and having his or her physiology and affect expressions changed; learners must have action tendencies before forming a subjective interpretation of an experience. Communibiology promotes the idea that speakers traverse a similar chronological pathway of emotions. Table 5.4 details how these separate bodies of work correspond with one another.
### Table 5.4

**Sutton and Wheatley’s Five Components of Emotions in Adult Education in Unison With McCroskey and Beatty’s Concept of Communibiology**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appraisal of significance:</strong> Is this learning activity worth emotional investment? How much emotional sacrifice is worth making? →</td>
<td>Does the speaker feel participation in public speaking is a worthwhile endeavor?</td>
</tr>
<tr>
<td><strong>Physiological changes:</strong> How does the learner’s body respond to emotion (heart rate, adrenalin flow, muscle tension)? →</td>
<td>Does the speaker feel physically (un)comfortable while speaking?</td>
</tr>
<tr>
<td><strong>Affect expressions:</strong> How does the learner express emotion both verbally (what he or she says) and nonverbally (how he or she appears during emotional changes, e.g., smiling or frowning)? →</td>
<td>Does the speaker outwardly look and sound (un)comfortable while speaking?</td>
</tr>
<tr>
<td><strong>Action tendencies:</strong> How does the learner habitually think and behave when undergoing a given emotional experience? →</td>
<td>How does the speaker tend to think and behave while delivering a speech?</td>
</tr>
<tr>
<td><strong>Subjective experiences:</strong> How does the learner interpret his or her emotional experiences? →</td>
<td>How does the speaker interpret his or her experiences once the speech has ended?</td>
</tr>
</tbody>
</table>
Results from the PRPSA indicate participants with BSD report a statistically normal level of overall public speaking CA ($\overline{x} = SD = 114.90, 31.22$); not surprisingly, participants without BSD also report levels of general public speaking CA ($\overline{x} = 107.06, SD = 23.05$), while slightly lower than those with BSD, on par with already established norms for the PRPSA McCroskey, 1970). More than simply providing a measurable level of overall speaking CA, the PRPSA also helps explain that learners with BSD navigate five components of emotions similarly to those without BSD. This explanation requires looking beyond a participant's cumulative PRPSA score and more closely at individual questions on the PRPSA.

The PRPSA contains 34 Likert-type statements. Each of these statements generally matches one of the five components of emotion described by Sutton and Wheatley as well as elements of communibiology from McCroskey and Beatty. Statements about appraisal center on how a participant feels about public speaking leading up to a speech. For example, statement #1 has the participant self-rate on the statement “While preparing for giving a speech, I feel tense and nervous.” Statements concerning perceived physiological changes ask the participant about physical alterations to their bodies during a speech. For instance, statement 20 inquires as whether or not “My heart beats very fast just as I start a speech.” Affect expression statements such as #10, “My hands tremble when I am giving a speech,” deal with how a participant verbally and nonverbally displays emotions during a speech. Statements about action tendencies like #3, “My thoughts become confused and jumbled when I am giving a
speech, ask the participant about how he or she tends to think and behave while giving a speech. The final type of statements, focused on subjective experience, ask a participant how he or she feels moving forward after a public speaking event. Statement #4, “Right after giving a speech I feel that I have had a pleasant experience,” provides an example of a subjective experience statement from the PRPSA. Table 5.5 explains how statements from the PRPSA are categorized.
Table 5.5

*Categorizations of PRPSA Items By Way of Sutton and Wheatley’s Components of Emotion*

<table>
<thead>
<tr>
<th>Sutton and Wheatley’s Component of Emotion</th>
<th>Statements from PRPSA Fitting Within the Component of Emotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraisal of significance</td>
<td>1. While preparing for giving a speech, I feel tense and nervous.</td>
</tr>
<tr>
<td></td>
<td>2. I feel tense when I see the words “speech” and “public speech” on a course outline when studying.</td>
</tr>
<tr>
<td></td>
<td>5. I get anxious when I think about a speech coming up.</td>
</tr>
<tr>
<td></td>
<td>7. Although I am nervous just before starting a speech, I soon settle down after starting and feel calm and comfortable.</td>
</tr>
<tr>
<td></td>
<td>8. I look forward to giving a speech.</td>
</tr>
<tr>
<td></td>
<td>9. When the instructor announces a speaking assignment in class, I can feel myself getting tense.</td>
</tr>
<tr>
<td></td>
<td>12. I enjoy preparing for a speech.</td>
</tr>
<tr>
<td></td>
<td>15. I face the prospect of giving a speech with confidence.</td>
</tr>
<tr>
<td></td>
<td>21. I experience considerable anxiety while sitting in the room just before my speech starts.</td>
</tr>
<tr>
<td></td>
<td>26. I feel comfortable and relaxed in the hour or so just before giving a speech.</td>
</tr>
<tr>
<td></td>
<td>28. I feel anxious when the teacher announces the date of a speaking assignment.</td>
</tr>
<tr>
<td></td>
<td>31. I have trouble falling asleep the night before a speech.</td>
</tr>
<tr>
<td></td>
<td>33. I feel anxious while waiting to give my speech.</td>
</tr>
<tr>
<td>Physiological Changes</td>
<td>16. I feel that I am in complete possession of myself while giving a speech.</td>
</tr>
<tr>
<td></td>
<td>20. My heart beats very fast just as I start a speech.</td>
</tr>
<tr>
<td></td>
<td>22. Certain parts of my body feel very tense and rigid while giving a speech.</td>
</tr>
<tr>
<td></td>
<td>24. While giving a speech, I know I can control my feelings of tension and stress.</td>
</tr>
<tr>
<td></td>
<td>25. I breathe faster just before starting a speech.</td>
</tr>
<tr>
<td></td>
<td>32. My heart beats very fast while I present a speech.</td>
</tr>
<tr>
<td>Affect expressions</td>
<td>10. My hands tremble when I am giving a speech.</td>
</tr>
<tr>
<td>Action tendencies</td>
<td>3. My thoughts become confused and jumbled when I am giving a speech.</td>
</tr>
</tbody>
</table>
11. I feel relaxed while giving a speech.
14. I get anxious if someone asks me something about my topic that I don’t know.
17. My mind is clear when giving a speech.
19. I perspire just before starting a speech.
23. Realizing that only a little time remains in a speech makes me very tense and anxious.
29. When I make a mistake while giving a speech, I find it hard to concentrate on the parts that follow.
30. During an important speech I experience a feeling of helplessness building up inside me.
34. While giving a speech, I get so nervous I forget facts I really know.

Subjective experiences

4. Right after giving a speech I feel that I have had a pleasant experience.
6. I have no fear of giving a speech.
13. I am in constant fear of forgetting what I prepared to say.
18. I do not dread giving a speech.
27. I do poorer on speeches because I am anxious.
This categorization model is not absolutely precise. A reasonable argument can be made that some PRPSA statements may fit better into another or more than one category. For example, statement #18, “I do not dread giving a speech,” seems to represent a subjective interpretation a participant may have about his or her past public speaking. However, a participant could interpret this question as a feeling he or she has before (significance appraisal) or during (action tendency) a speech. Even so, the distribution of PRPSA statements into categories based on Sutton and Wheatley's components of emotions is quite telling. The PRPSA is heavily loaded toward significance appraisal, i.e., how a person feels before public speaking. Thirteen PRPSA statements are dedicated to significance appraisal; what a person feels before a speech. Physiological changes (6 items), action tendencies (9 items), and subjective experience (5 items) are moderately represented on the PRPSA. Most notably, affect expression only accounts for a single statement on the PRPSA.

The fact that only one statement on the PRPSA asks about affect expressions, how a speaker feels he or she actually looks to an audience, is significant. Statement #10 asks about trembling hands. Of course any number of verbal and nonverbal behaviors can express anxiety, e.g., swaying back and forth, fidgeting or wringing hands, not making eye contact with audience members, and/or speaking at a fast or choppy pace. This quirk of the PRPSA raises the possibility of much future research related to the study. Perhaps most adults with BSD are not necessarily nervous about public speaking (as the study indicates) yet have hesitations and reservations about how others perceive the way they
look and sound. Unfortunately, affect expression is simply not covered in much detail by the PRPSA. Future Likert-type scale research could inquire of adults with BSD how they believe audiences judge their displays of affect. Taken a step further, researchers could actually record adults with BSD delivering speeches and assess not only affect expression, but also action tendencies.

**Causes of Emotional Changes in Adult Learners in Unison with Situational Causes of Communication Anxiety**

As detailed in Chapter 2, Dirkx (2008) and Kasworm (2008) each suggest that different events can trigger positive or negative emotions in an adult learner. Dirkx stresses (1) quality of interpersonal relationships, e.g., professor and student, (2) success on formal evaluations, and (3) course content as events precipitating emotional change. Kasworm mentions four hopes an adult learner has for higher education: (1) hope upon entry into higher education, (2) hope for continued success while enrolled in higher education, (3) hope for gaining new knowledge and skills, and (4) hope for gaining a sense of place and purpose within higher education.

Chapter 2 also describes Buss’s seven (1980) and Daly and Hailey’s two (1980) situational causes of public speaking CA. These nine situational causes of CA provide foundation for the study’s ten versions of the SCAM. Combining work of Buss, Daly, and Hailey to create ten new measures of situational public speaking CA is a testament to their research. Differing score means and ranges on the ten versions of the SCAM indicates that participants, whether having BSD or not, feel more or less anxiety in
different scenarios. If mean scores and ranges are nearly identical on the ten surveys, a question could be reasonably asked as to whether or not different situational causes of public speaking CA even exist.

Versions of the SCAM are not merely twenty item Likert-type scales. Instead, these scales provide insight into how adults with BSD not only feel about public speaking, a very common cause of anxiety for many people, but higher education as a whole. Keeping in mind that average scores by participants with BSD are slightly lower than participants with BSD on all versions of the SCAM, certain preliminary, if statistically unconfirmed, connections can be made between this survey (in its ten versions) and causes of emotional change in adult learners with BSD. First, Dirkx stresses quality of interpersonal relationships as a determining factor in how adult learners feel about their enrollment in higher education. At least five SCAM results indicate adult learners with BSD have similar feelings about interpersonal relationships in higher education as those not having BSD. Findings from the unfamiliarity with audience SCAM show that adults with BSD do not seem to mind encounters with new people, a trait which could be very helpful when they enter higher education and are surrounded by professors, students, and administrators they do not know. The dissimilar from audience and subordinate status versions of the SCAM build off of the unfamiliarity with audience SCAM, demonstrating that adults with BSD also do not seem to experience unusual anxiety when they perceive themselves to be different from people, possibly of a higher status in the academic world, during enrollment in higher education, i.e., professors, students, and administrators.
Taken a step further, *intensity of attention* and *conspicuousness* versions of the SCAM show two instances in which adult learners with BSD do not seem to mind people viewing their communication in an open and easily seen context.

In terms of formal evaluation, Dirkx's second cause of emotional change, the *degree of evaluation* SCAM indicates that adult learners with BSD do not feel abnormally high anxiety when facing graded assignments, a clear benefit for any student enrolled in higher education. Moreover, results from the *prior history* SCAM show that adult learners with BSD do not feel apprehensive about graded assignments when they have formerly not performed well on similar activities. The *formality* SCAM reveals that adult learners feel comfortable when assignments require their following specific rules and stated guidelines. Versions of the *unfamiliarity with topic* and *novelty* SCAM further indicate that adult learners with BSD do not experience great anxiety when encountering potentially new course content, Dirkx’s third and final cause of emotional change.

Taken in total, the study’s ten versions of the SCAM provide implication that adult learners with BSD do not feel great anxiety when it comes to interpersonal relationships, formal evaluations, and course content as related to higher education. In other words, as Kasworm may put it, there is hope for adult learners with BSD in these areas. However, it is critically important to keep in mind that adults with BSD (and many other disabilities) struggle to complete degrees at a rate equal to that of non-disabled students. Perhaps some other systemic problem within higher education contributes to these unusually high dropout rates. Or, maybe, enrollment in higher education triggers manic and/or
depressive symptoms in adult learners that do not necessarily correlate with anxiety about relationships, assessment, and course content. Since anxiety in these areas does not seem to be the issue, further research might locate and interview a number of adult learners with BSD to learn about why they ceased their pursuits in higher education.

**How Findings Support Previous Research on the Technical/Rational Approach to Disabilities and Systematic Desensitization**

BSD is a disability. As more broadly related in Chapter 2, people with disabilities must navigate daily through an ableist world, one which holds able bodied and able minded as the definition of normal (Campbell, 2001). While certain legal rights and educational programs are afforded to people with disabilities in the United States, the reality of their daily lives can be challenging to understand let alone live through. At the same time, it is appropriate to acknowledge when a scientific study indicates that a group of people with a certain mental disability experience something so common as the fear of public speaking just like everyone else.

Taken in total, the study indicates public speaking CA is no more of a problem for adult learners with BSD than those without BSD. Participants with BSD maintain a level of overall public speaking anxiety that is essentially identical to pre-established norms for the PRPSA (McCroskey, 1970). Compared to those without BSD, participants with BSD do not demonstrate above average levels of public speaking CA in any of the ten situations measured by the SCAM. Participants with BD show a level of motivation for learning about public speaking that is slightly better than those without BSD. Participants
with BSD express only a fairly weak feeling that having BSD impacts their public speaking CA.

Previous research on potential relationships between BSD and public speaking CA provides two fairly dichotomous schools of thought. One body of research suggests that even while experiencing balanced euthymic mood states, adults with BSD maintain levels of ongoing neuroticism above that of the general population (Hirschfeld et al., 1986; Solomon et al., 1996). Moreover, this set of investigations also indicates that, even when experiencing stable euthymic mood states, adults with BSD are more introverted than adults without BSD (Hirschfeld, 1985; Hirschfeld et al., 1986). This combination of neuroticism and introvertedness, as can be seen in people with BSD, is also found in people with high CA. In fact, Beatty, McCroskey, and Heisel (1998) describe CA as essentially a personality trait marked by high neuroticism and introvertedness. In other words, BSD seems to go hand in hand with elevated CA.

A second body of research suggests quite the opposite. Instead, adults with BSD in euthymic states are seen to be quite comfortable with communication. They are attracted to novel situations (Cronin & Zuckerman, 1992; Young et al., 1995; Nowakowska et al., 2005) and are more extroverted than introverted (Popescu et al., 1985). Furthermore, adults with BSD in euthymic states also carry higher feelings of personal excitement, enthusiasm, competence, and confidence than the general population (Goodwin & Jamison, 2007). Clearly all of these traits (i.e., attraction to novel situations, extroversion, feelings of excitement, enthusiasm, competence, and
especially confidence) align with the opposite of high levels of neuroticism and introversion. Viewed in its entirety, the current study supports this second body of research suggesting that average or even below average public speaking CA is normal for adults with BSD who are assumed to be currently enjoying euthymic mood states.

Implications for Practice

There are, of course, adult learners who have BSD and high public speaking CA. Such is simply the nature of statistical distributions of phobia across populations. Therefore, the question inevitably comes up, how can educators help adults with BSD and high public speaking CA overcome their feelings of reticence? The technical/rational approach to disabilities focuses on the central premise that, through work, disabilities must be diagnosed and treated. As Brookfield (2011) points out, part of working through a disability is learning to view it as a normal, unimpressive part of life, not as the summation of a one’s existence. Fortunately, there already exists an ample amount of research proving that systematic desensitization, incrementally tackling one’s fear of public speaking, absolutely works (McCroskey, Ralph, & Barrick, 1970; Berger et al., 1984; Furio, 1982). Because participants in the study with BSD appear so statistically “normal” in all measured categories of CA, it seems reasonable to prescribe systematic desensitization for cases in which an adult with BSD has elevated CA. Therefore, an initial implication for practice would simply be that instructors of public speaking classes should continue to work with students having BSD and high CA in the same manner they would with students not having BSD. That is to say, if a student has BSD and high public
speaking CA, his or her instructor should incorporate systematic desensitization as a
prescribed method for overcoming anxiety.

At the same time, educators must recognize that students with disabilities should
always be treated first and foremost as individuals, even if this study suggests public
speaking CA is not an inherent problem for learners with BSD. This is critically
important to keep in mind when working with students having BSD because stress, in the
form of public speaking CA or otherwise, can trigger manic and/or depressive symptoms.
While systematic desensitization is a reasonable first suggestion for helping learners with
BSD and high public speaking CA, educators can follow certain strategies to further
ensure members of this population do not experience overwhelming levels of stress
potentially causing them to withdraw from courses involving public speaking.

In particular, Rocco and Fornes (2010) state four specific teaching strategies work
best for adult learners with disabilities: (1) making reasonable adjustments for
participation, (2) providing the opportunity for self-determination, (3) promoting
engagement in varied learning activities, and (4) ensuring transparent, comfortable
communication. In terms of making reasonable adjustments for participation, educators
can allow a student with BSD and high public speaking CA to reschedule submission
dates if or when he or she experiences the onset of (hypo)manic and/or depressive
symptoms. Indeed, the practice of flexible scheduling could possibly save a manic or
depressed student from unnecessarily embarrassing himself or herself in front of other
students. Self-determination can take the form of a student with BSD and high CA
personally selecting the type of systematic desensitization (group, real-life, automated, self-directed, contact, and self-control; McCroskey et al., 1970) that works best for him or her. It is possible that adult learners with BSD favor one of the six styles of systematic desensitization over the rest. Of course instructors should never limit a student with BSD to his or her first choice of systematic desensitization.

With regard to promoting engagement in varied learning activities, instructors can incorporate graded assignments into class that are not based solely upon public speaking ability, e.g., essay assignments or multiple choice quizzes. Doing so allows a student with BSD and high CA to build confidence while succeeding at other forms of assessment that may be more in line with his or her preferences and abilities. Most importantly, educators should always communicate with students having BSD in a transparent and comfortable manner. This communication need not delve into the negative symptoms inherent in a student having BSD. A simple, brief, one-on-one acknowledgement to a student with BSD that he or she is successfully working through his or her higher education and illness can and will do wonders for his or her feeling of academic belonging. At the same time, educators must communicate compassion, concern, and, most importantly, directions to mental health treatment resources when a student with BSD displays evident manic and/or depressive symptoms.

Just as important as knowing what to do when working with this population, instructors engaged with learners who have BSD and high public speaking CA must also bear in mind certain actions they should not take. Isserlis (2008) provides four guidelines
for educators to follow when working with this unique population: (1) be ready for lack of academic preparedness, (2) recognize incremental accomplishments, (3) do not make education about the disability, and (4) work with students having disabilities to set and reach realistic goals. In terms of lacking academic preparedness, educators should never assume or tell a student with BSD that his or her illness causes high CA and/or poor public speaking performance. Indeed, many students of all ages and abilities struggle with public speaking. To assume, yet alone verbalize, such an inaccurately assumptive statement would not only be in disagreement with findings of this study, but also potentially disheartening to the learner with BSD.

Educators should not pressure a student with BSD to talk about his or her illness as a part of a public speaking assignment; they must not turn a public speaking class into forced disclosure of the illness. It is understandable that an instructor may believe having a student with BSD talk about his or her illness could be an memorable learning opportunity for others. Indeed, hearing a student with BSD talk about the illness could be wonderfully insightful to any audience member. However, this type of coercion could make a student with BSD feel as if his or her grade in a class is dependent upon revealing personal information. At the same time, if a student with BSD wants to deliver a speech about having the illness, an instructor may help him or her devise a strategy for communicating such information to the class.

Finally, educators should never limit the goals set by a student with BSD; they should never tell a student with the illness that academic standards will be lower for him
or her due to having the illness. While a student with BSD and high public speaking CA is potentially taking on two challenges, a mental disability and elevated anxiety, being told that learning expectations and standards are lower for him or her could understandably induce detrimental feelings inadequacy. Instead, educators should work with students having BSD and high public speaking CA to set and incrementally reach academic goals similar to those of all other students while also simultaneously understanding such a process may take more time and effort than normal. Table 5.6 outlines these suggestions for educators working with students having BSD and high CA.
Table 5.6

**Implications for Practice: “Do” and “Don’t”**

<table>
<thead>
<tr>
<th>Do…</th>
<th>Don’t…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow a student having BSD to reschedule public speaking assignments if he or she experiences manic and/or depressive symptoms.</td>
<td>Tell a student with BSD that having the illness causes high public speaking CA and/or poor speaking performance.</td>
</tr>
<tr>
<td>Work with a student having BSD and high public speaking CA to uncover which form of systematic desensitization works best for him or her.</td>
<td>Pressure a student with BSD to deliver speeches about having the illness.</td>
</tr>
<tr>
<td>Incorporate a variety of graded assignments other than public speaking.</td>
<td>Tell a student with BSD and high public speaking CA that learning standards will be lowered for him or her.</td>
</tr>
<tr>
<td>Communicate positive recognition of a student’s succeeding at higher education and managing his or her illness.</td>
<td>Demand a student with BSD and high public speaking CA to learn at the same pace as other students.</td>
</tr>
<tr>
<td>Communicate support and direction if a student demonstrates manic and/or depressive symptoms.</td>
<td>Attempt to diagnose and/or treat a student’s illness. There is a significant difference between helping a nervous student with public speaking systematic desensitization and treating symptoms of BSD.</td>
</tr>
<tr>
<td>Help a student with BSD talk about having the illness, but only if he or she wants to do so.</td>
<td></td>
</tr>
<tr>
<td>Provide an abundance of detail when describing learning assessments.</td>
<td></td>
</tr>
</tbody>
</table>
The study does not approach the question of how adults with high public speaking CA and BSD respond to actual enrollment in learning activities designed to lower anxiety. Instead, this cross-sectional study offers a snapshot of adults with BSD at one point in time. True, the study does indicate people with BSD have favorable levels of motivation to engage in such learning activities, i.e., public speaking courses. However, the study does not actually track such students as they enroll in, navigate, and complete courses on public speaking. Perhaps actual enrollment is more difficult for students with high CA and BSD because established methods of anxiety reduction do not work for them. Or, maybe, adults with high public speaking CA and BSD perform better in certain types of classrooms than others, e.g., online courses versus conventional in-person classrooms. Only future investigation by way of a case study could effectively make suggestions about things like reasonable adjustments (Rocco & Fornes, 2010) and recognizing incremental change (Isserlis, 2008) in adult learners with BSD as they overcome public speaking CA.

**Generalizability of the Study Based on Types of Participants Having BSD**

While the study indicates having BSD does not necessarily go hand-in-hand with higher levels of public speaking CA, it is worth noting included participants with BSD might share unique qualities making them unrepresentative of the entire population of adults having the illness. Specifically, participants in the study demonstrate active engagement in the IBPF. Furthermore, the study does not account for different types of BSD that could be present in participants having the illness. Both of these characteristics
could influence the generalizability of the study’s findings.

First, nearly all study participants with BSD are drawn from the IBPF email listserv. Receiving frequent emails from the IBPF is cost-free, i.e., members do not pay for this service. These emails contain a bevy of information about treatment support and new research on BSD. By joining IBPF, receiving the organization’s emails, and reading email content, this set of participants with BSD demonstrates a heightened level of interest in understanding and caring for their illness, if not greater than, at very least different from the people not belonging to the group. While investing time in understanding the illness on this level can clearly be helpful to an adult with BSD, such action is not necessarily the norm for this population. Indeed, many adults with BSD never take time to research their illness beyond what their medical provider tells them to do, e.g. take this medication and attend therapy. They do not join learning communities geared toward greater understanding of their illness. Perhaps adults with BSD who join organizations like the IBPF think about their illness on a deeper level or feel more invested in treatment and, therefore, are better able to rationalize symptoms like anxiety. Further research should investigate how membership in organizations like the IBPF helps adults with BSD cope with symptoms like increased anxiety.

Second, the study does not delineate between types of BSD. Indeed, the American Psychiatric Association separates BSD further into three subcategories (5th ed.; DSM–5; American Psychiatric Association, 2013): BDI, BDII, and BD-OS (Otherwise Specified). Each of these three types of BSD carries its own unique set of
symptoms. A diagnosis of BDI necessitates manic symptoms while BDII requires only hypomania as well as depressive symptoms. BD-OS diagnoses are given to adults demonstrating some combination of these symptoms but not clearly meeting criteria for a full manic or major depressive mood state. Chapter 2, Definition of Terms, provides a lengthier explanation of these three forms of BSD.

While application of the MDQ reliably finds 97 participants having BSD (by way of a positive screen as well as confirmation that the participant is already told by a health professional he or she has BSD), the question is not raised as to each person’s unique type of the illness. There exists a possibility that the studied population is heavily skewed toward one of the types of BSD. As it is applied in this study, the MDQ simply does not ask for this subcategorization to be made. Uncovering this information requires (1) asking participants an extra question along the lines of “Have you been diagnosed with BDI, BDII, or BD-OS?” and (2) participants reliably knowing and accurately reporting their type of BSD. It is important to note that some, if not many, participants with BSD may not know their exact type of BSD. It is also possible a similar number of participants with each type of BSD make up the study’s overall population, e.g., about one third of participants have BDI, one third have BDII, and one third have BD-OS. At the same time, each of the three group types (BDI, BDII, and BD-OS) could tend to a certain score. For example, perhaps adults with BDI score much lower on versions of the SCAM while those with BSDII score closer to the norm established by participants not having BSD. This limitation may account for the frequent bimodal distribution of scores on
Future investigation making this delineation would allow for statistical tests, likely one-way ANOVA or Kruskal-Wallis, to be run between four groups of participants (i.e., BDI, BDII, BD-OS, and nonpositive screens) instead of only two as seen in this study (positive and nonpositive screens).

Further Study Limitations and Recommendations for Future Research

Throughout this chapter, many recommendations for future research have been listed. For example, the study indicates that adults with BSD demonstrate a certain level of social learning when it comes to participating in research about their illness and public speaking CA. The question, then, is raised as to where, when, and how adults might be willing to speak in public about BSD. Furthermore, matching Sutton and Wheatley’s components of emotions to the PRPSA, a very popular measurement used in the study of public speaking CA, shows the possibility of more research on affect expressions needing to take place. Pairing eleven in-class causes of emotional change in adult learners with eleven versions of the SCAM raises an equal number of potential research questions while simultaneously providing a priori knowledge for future directional investigation. Discussion of the technical/rational approach to disabilities promotes systematic desensitization as a viable treatment for public speaking CA in adults with BSD. At the same time, further research can be undertaken to figure out which style of systematic desensitization, if any, works best for adults with BSD. While all of these questions provide direction for future research, there exists a running thematic, if slight, flaw in the study. Namely, the study investigates a single type of communication (public speaking),
single learning context (higher education), and single disability (BSD).

First, the study provides strong backing for the idea that public speaking CA is, on average, not a unique problem for adults with BSD. Indeed, public speaking is a fundamental part of adult participation in higher education classes; so much so that the Association of American Colleges and Universities names it as a skill that should be practiced across general education curricula and within a student’s major field of study (Association of American Colleges and Universities, 2015). However, communication by adult students in the context of higher education, and potential problems with CA, is not limited to just public speaking. At its core, communication occurs whenever two or more people share information with one another. As an adult is enrolled in higher education, he or she may find it necessary to work on group projects with other students, communicate one-on-one with faculty, or practice interview skills for future employment. CA can occur in any of these scenarios. This study does not touch on these smaller interpersonal communication contexts. Therefore, one avenue for future research could apply new versions of the SCAM to uncover whether or not these unique situations cause unusual levels of CA in adults with BSD.

Second, the study does not consider learning outside of formal higher education contexts. Of course adult learning is not relegated solely to formal higher education and the pursuit of college credit and degrees. Adults learn on the job, in their communities, and at home. However, even when in remission, adults with BSD also demonstrate a “variety of general indicators of social impairment” (Goodwin and Jamison, 2007, p.
Perhaps adults with BSD feel comfortable with public speaking in formal higher education scenarios but struggle during informal learning experiences. Again, this type of possible stressor could be measured through application of the SCAM. In such a scenario, understanding personal CA could help an adult with BSD learn how to better communicate with his or her partner and/or family members.

Lastly, the study only examines adult learners with BSD. While studying BSD and its effects on learners is a viable direction for future research, it is but only one type of mental disability. There are several other types of mental disabilities (e.g., schizophrenia, obsessive compulsive disorder, panic disorder, post traumatic stress disorder, emotional dysfunction, and substance abuse) and even whole categories of disabilities (i.e., cognitive, physical, and sensory). This array of other disabilities raises similar questions posed by the study. Namely, do adults with other disabilities have above average levels of overall public speaking CA? For adults with other disabilities, are there situations that correlate with higher levels of public speaking CA? How do adults with a disability other than BSD feel about learning activities that can lower public speaking CA? Do adults with disabilities other than BSD believe having a disability affects their public speaking CA? The study provides excellent data from the general population for establishing a baseline distribution of what is “normal” public speaking CA in terms of the PRPSA, ten versions of the SCAM, SMS, and GBM. An important next step would be to provide these same sets of surveys to adults with disabilities other than BSD. Perhaps there exists potential problems with CA in other segments from the vast population of
Chapter Summary

This chapter offers a discussion of the study. It begins by summarizing the large amount of created data with non-statistical language. From there, the chapter explains which hypotheses can and cannot be accepted. This section segues into descriptions of how the study offers further support for research about emotions and disabilities in adult education. The chapter concludes with implications for practice, an explanation of the study’s generalizability, and further limitations and directions for future research into public speaking CA and its relationship to BSD.
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Appendix A

Personal Report of Public Speaking Anxiety (PRPSA)

Directions: Below are 34 statements that people sometimes make about themselves. Please indicate whether or not you believe each statement applies to you by marking whether you:

1 = Strongly Disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly Agree

1. While preparing for giving a speech, I feel tense and nervous.
2. I feel tense when I see the words “speech” and “public speech” on a course outline when studying.
3. My thoughts become confused and jumbled when I am giving a speech.
4. Right after giving a speech I feel that I have had a pleasant experience.
5. I get anxious when I think about a speech coming up.
6. I have no fear of giving a speech.
7. Although I am nervous just before starting a speech, I soon settle down after starting and feel calm and comfortable.
8. I look forward to giving a speech.
9. When the instructor announces a speaking assignment in class, I can feel myself getting tense.
10. My hands tremble when I am giving a speech.
11. I feel relaxed while giving a speech.
12. I enjoy preparing for a speech.
13. I am in constant fear of forgetting what I prepared to say.
14. I get anxious if someone asks me something about my topic that I don’t know.
15. I face the prospect of giving a speech with confidence.
16. I feel that I am in complete possession of myself while giving a speech.
17. My mind is clear when giving a speech.
18. I do not dread giving a speech.
19. I perspire just before starting a speech.
20. My heart beats very fast just as I start a speech.
21. I experience considerable anxiety while sitting in the room just before my speech starts.
22. Certain parts of my body feel very tense and rigid while giving a speech.
23. Realizing that only a little time remains in a speech makes me very tense and anxious.
24. While giving a speech, I know I can control my feelings of tension and stress.
25. I breathe faster just before starting a speech.
26. I feel comfortable and relaxed in the hour or so just before giving a speech.
27. I do poorer on speeches because I am anxious.
28. I feel anxious when the teacher announces the date of a speaking assignment.
29. When I make a mistake while giving a speech, I find it hard to concentrate on the parts that follow.
30. During an important speech I experience a feeling of helplessness building up inside me.
31. I have trouble falling asleep the night before a speech.
32. My heart beats very fast while I present a speech.
33. I feel anxious while waiting to give my speech.
34. While giving a speech, I get so nervous I forget facts I really know.
Appendix B

Ten Versions of the Situational Communication Apprehension Measure (SCAM)

7 = extremely accurate for how you would feel
6 = moderately accurate
5 = somewhat accurate
4 = neither accurate nor inaccurate
3 = somewhat inaccurate
2 = moderately inaccurate
1 = extremely inaccurate

1. I would be apprehensive.
2. I would be disturbed.
3. I would feel peaceful.
4. I would be loose.
5. I would feel uneasy.
6. I would be self-assured.
7. I would be fearful.
8. I would be ruffled.
9. I would feel jumpy.
10. I would be composed.
11. I would be bothered.
12. I would feel satisfied.
13. I would feel safe.
14. I would be flustered.
15. I would be cheerful.
16. I would feel happy.
17. I would feel dejected.
18. I would be pleased.
19. I would feel good.
20. I would be unhappy.
1. NOVELTY OF SPEECH TYPE SCAM
   How would you feel about delivering a type of speech that you had never
delivered before? For example, delivering a toast at a wedding or a persuasive
presentation if you had never delivered these types of speeches.

2. UNFAMILIARITY WITH AUDIENCE SCAM
   How would you feel about delivering a speech to an audience of strangers?

3. UNFAMILIARITY WITH TOPIC SCAM
   How would you feel about delivering a speech on a topic you knew little or
nothing about?

4. FORMALITY SCAM
   How would you feel about delivering a speech that had a lot of rules attached to
it? For example, rules about how long you must speak, how you must dress, what
words you may use, what topic you can speak about, and what visual aids you
should use.

5. SUBORDINATE STATUS SCAM
   How would you feel about delivering a speech to an audience that is of a higher
status than you? For example, delivering a speech to an audience of executives if
you were a new hire into their business.

6. CONSPICUOUSNESS SCAM
   How would you feel about delivering a speech if you could not use any visual aids
such as Powerpoint, posters, and photographs AND you could not present the
speech as a member of a larger group? In other words, you must stand alone in
front of an audience, without visual aids or any other people, and deliver your
speech by yourself.

7. DISSIMILARITY SCAM
   How would you feel about delivering a speech to an audience of people who were
much different from you?

8. INTENSITY OF ATTENTION SCAM
   How would you feel about delivering a speech to an audience of people who were
paying close attention to your every word and movement?

9. DEGREE OF EVALUATION SCAM
   How would you feel about delivering a speech that was closely graded by a
professor and counted as part of your overall grade in that course?

10. PRIOR HISTORY NEGATIVE SCAM
    How would you feel about delivering a speech to a new audience if a different
previous audience had not liked your delivery of that same speech?
Appendix C

Student Motivation Scale (SMS)

Directions: Please circle the number toward either word which best represents your feelings about enrolling in a class that would help you lower your anxiety about public speaking.

1. Motivated  1  2  3  4  5  6  7  Unmotivated
2. Interested  1  2  3  4  5  6  7  Uninterested
3. Involved  1  2  3  4  5  6  7  Uninvolved
4. Not stimulated  1  2  3  4  5  6  7  Stimulated
5. Don’t want to study  1  2  3  4  5  6  7  Want to study
6. Inspired  1  2  3  4  5  6  7  Uninspired
7. Unchallenged  1  2  3  4  5  6  7  Challenged
8. Uninvigorated  1  2  3  4  5  6  7  Invigorated
9. Unenthused  1  2  3  4  5  6  7  Enthused
10. Excited  1  2  3  4  5  6  7  Not excited
Appendix D

Generalized Belief Measure (GBM)

Directions: On the scales below, please indicate the degree to which you believe the following statement:

"Having bipolar disorder influences my level of public speaking anxiety."

Numbers "1" and "7" indicate a very strong feeling.
Numbers "2" and "6" indicate a strong feeling.
Numbers "3" and "5" indicate a fairly weak feeling.
Number "4" indicates you are undecided or do not understand the adjective pairs themselves.

There are no right or wrong answers. Only circle one number per line.

1) Agree  1  2  3  4  5  6  7  Disagree
2) False  1  2  3  4  5  6  7  True
3) Incorrect  1  2  3  4  5  6  7  Correct
4) Right  1  2  3  4  5  6  7  Wrong
5) Yes  1  2  3  4  5  6  7  No
<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Has there ever been a period of time when you were not your usual self and...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...you felt so good or so hyper that other people thought you were not your normal self or you were so hyper that you got into trouble?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...you were so irritable that you shouted at people or started fights or arguments?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...you felt much more self-confident than usual?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...you got much less sleep than usual and found you didn’t really miss it?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...you were much more talkative or spoke much faster than usual?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...thoughts raced through your head or you couldn’t slow your mind down?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...you were so easily distracted by things around you that you had trouble concentrating or staying on track?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>....you had much more energy than usual?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...you were much more active or did many more things than usual?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...you were much more social or outgoing than usual, for example, you telephoned friends in the middle of the night?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...you were much more interested in sex than usual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...you did things that were unusual for you or that other people might have thought were excessive, foolish, or risky?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...spending money got you or your family into trouble?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. If you checked YES to more than one of the above, have several of these ever happened during the same period of time?

3. How much of a problem did any of these cause you – like being unable to work; having family, money or legal troubles; getting into arguments or fights? Please circle one response only.
   - No Problem
   - Minor Problem
   - Moderate Problem
   - Serious Problem

4. Have any of your blood relatives (i.e. children, siblings, parents, grandparents, aunts, uncles) had manic-depressive illness or bipolar disorder?

5. Has a health professional ever told you that you have manic-depressive illness or bipolar disorder?
Appendix F

Histograms Showing Distribution of Participant Responses

Appendix F provides histograms showing score distributions between participants with and without BSD on the study’s surveys. Distributions on the left (labeled .00) are from participants with nonpositive BSD screens. Distributions on the right (labeled 1.00) are from participants with positive BSD screens.

Personal Report of Public Speaking Anxiety (PRPSA)
Novelty of Speech Type SCAM
Unfamiliar With Audience SCAM
Subordinate Status SCAM
Dissimilar from Audience SCAM
Intensity of Attention SCAM
Degree of Evaluation SCAM
Prior History SCAM

The image shows a histogram with two frequency distributions for TOTALPRIORHISTORY. The x-axis represents the frequency range, while the y-axis represents the frequency count. The blue bars indicate one distribution, and the green bars indicate another. The graph appears to display the distribution of values for TOTALPRIORHISTORY.
Conspicuousness SCAM
Unfamiliar Topic SCAM
Student Motivation Scale (SMS)
Generalized Belief Measure (GBM; only shows scores from participants with positive BSD screens)
EDUCATION

Doctorate of Education, Adult Education
The Pennsylvania State University, May 2017

Master of Liberal Arts, Humanities
The Johns Hopkins University, May 2004

Bachelor of Arts, Speech
York College of Pennsylvania, May 2000

Certificates and Professional Development
Certificate for Online Teaching (Penn State, 2015)
Using Student Response Systems to Improve Discussions and Class Participation (Penn State, 2016)
Qualtrics (Penn State, 2015)
Teamwork in Online Teaching and Learning (Penn State, 2015)
Assessment of Online Learners (Penn State, 2015)
Online Course Authoring (Penn State, 2015)
Serving Those Who Serve (Penn State, 2015)
Grantseeking A-Z Workshop (Penn State, 2014)

INSTRUCTION

- 2015-present  Penn State University, University Park & World Campus
  Effective Speech (100A, 100B, 100C)
- 2015  Johns Hopkins University
  Persuasion
- 2014-2015  Penn State College of Medicine
  Department of Public Health Sciences
  EPIC Program
- 2006-2015  York College of Pennsylvania
  Human Communication
- 2008-2015  Penn State University, Harrisburg
  Effective Speech (100A), American Civilization Since 1877
- 2009-2013  Community College of Baltimore County
  Fundamentals of Speech Communication
- 2012  Harrisburg University of Science and Technology
  Speech
- 2010 & 2013  Stevenson University
  Introduction to Public Speaking
- 2008-2009  Harrisburg Area Community College
  Modern Culture and the Arts, Effective Speaking

PUBLICATIONS, VOLUNTEER WORK, AND SKILLS

- Consumer Satisfaction Services, Inc. (Treasurer, 2014-present)
- In My Own Words program at RASE-Carlisle; directed at helping addicts in recovery share their stories through public speaking engagements.