

THE PSYCHOSOCIAL DEVELOPMENT AND INCREASED FLUENCY OF USERS
OF THE SPEECHEASY® DEVICE: A MULTIPLE UNIT CASE STUDY

by

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A DISSERTATION

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ABSTRACT

This dissertation study explored the efficacy of the SpeechEasy® device for individuals who are gainfully employed stutterers and who participated in workplace education learning activities. This study attempted to fill a gap in the literature regarding efficacy of the SpeechEasy® device. It employed a qualitative multiple unit case study method, which explored six individuals' use of the SpeechEasy® device using an auto-ethnographic narrative theoretical framework based on the methodological tradition of Smith and Sparkes' (2008) five identity perspectives. Findings indicate participants' satisfaction with the SpeechEasy® device in reducing their stuttering. This led to improved confidence and self-image. They also reported their willingness to assume visible roles within their organizations that required fluent speech including increased participation in workplace training. In addition, the participants reported increased opportunities for promotion and job placement. The results of this study indicate that morale and efficiency in the workplace increases in organizations where individuals who stutter begin using the SpeechEasy device. Likewise, these individuals, including the researcher, recognize the personal advantage in developing higher levels of psychosocial development through an improved self-image and increased self-confidence brought about from using this devise. Employers and Speech Pathologists need to be aware of the findings of this study to enable them to assist their employees and clients who stutter in constructing plans that will lead to the purchase and use of the Speech Easy device.

DEDICATION

I dedicate this dissertation to the following people: Paul J. Gagnon (deceased July 20th, 1999), Donald P. Horgan, (deceased March 19th, 2009), to Leslie, to all my relatives and friends, and to my unborn child who I hope this dissertation serves as an inspiration for revealing that hard work does pay off in the end.

LIST OF ABBREVIATIONS AND SYMBOLS

- p* Probability associated with the occurrence under the null hypothesis of a value as extreme as or more extreme than the observed value
- < Less than

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CHAPTER 1

INTRODUCTION

The manufacturer of the SpeechEasy® device, Janus Development Group, suggests that SpeechEasy® along with regular speech-language therapy will control disfluencies to appear as if stuttering has been eliminated. This new assistive technology is bombarding the public through popular media outlets such as the *Good Morning America* television show and the *Oprah Winfrey Show* as well as the SpeechEasy® website. There are several stories of how SpeechEasy® has miraculously improved the quality of life of people who stutter.

Statement of the Problem

Historically, the National Stuttering Foundation (cf. National Stuttering Foundation, 2007) and noted scholars in areas of speech and language (Bloodstein, 1981; Finn, Bothe, & Bramlett, 2005; Finn, Bothe, & Bramlett, 2007; Wingate, 1997, 2002; Yaruss & Gabel, 2005) have refuted consistently popular claims pertaining to the effectiveness of SpeechEasy® and devices that preceded it (e.g., Fluency Master®, SmallTalk®). These scholars and national organizations agree devices such as SpeechEasy® have yielded no treatment efficacy results to support such claims (The National Stuttering Foundation, n.d.; Yaruss & Gabel, 2005). According to the National Stuttering Association, there is a fear surrounding the use of SpeechEasy® for children, although they are approved for adults. This perceived fear stems from the lack of research involving the efficacy of SpeechEasy® with children.

Significance of the Problem

Speaking fluently is the goal for all individuals who stutter (Bobrick, 1995; Guitar, 2006; O'Donnell, Armson, & Kieft, 2008; Ward, 2006; Wingate, 1997, 2002).

Unfortunately, individuals who stutter are faced with several disadvantages in the workplace (O'Donnell et al., 2008). An example of one such disadvantage pertains to how stuttering is considered unprofessional because of the lack of clarity in the individual's speech. Therefore, individuals who stutter are placed in occupational roles either by self-selection of the individual or by workplace dynamics (O'Donnell et al., 2008).

In addition, for individuals who are disfluent as a result of stuttering, speech therapy alone may not satisfactorily alleviate their disfluencies (Guitar, 2006; Ward, 2006; Wingate, 1997, 2002). With aid of electronic devices, the reduction of stuttering can be achieved (cf. Stuart, Kalinowski, Rastatter, Saluklaroglu, & Dayalu, 2004; Zimmerman, Kalinowski, Stuart, & Rastatter, 1997) and open professional opportunities that would otherwise be closed to individuals who are disfluent due to stuttering.

Research Question

The following research question will guide the analysis for this study regarding the experiences of individuals who use the SpeechEasy® device as it pertains to employment and workplace education. For individuals who begin using the SpeechEasy® device, what are the before, during, and after experiences encountered in employment and workplace education? This study includes six participants who are different genders (male and female) as well as different ages (21, 25, 32, 39, 45, and 52).

Theoretical Framework

The theoretical framework for this study is based on the methodological tradition of Smith and Sparkes' (2008) five identity perspectives: (a) psychosocial, (b) the inter-subjective, (c) the storied resources, (d) the dialogic, and (e) the performative perspective. This study pursues the psychosocial identity perspective. Smith and Sparkes base their five identity perspective on Denzin's (1989a) fourth interpretive approach of autobiography. Figure 1 illustrates the connection between Smith and Sparkes' five identity perspectives and Denzin's four different interpretive approaches of autobiography.

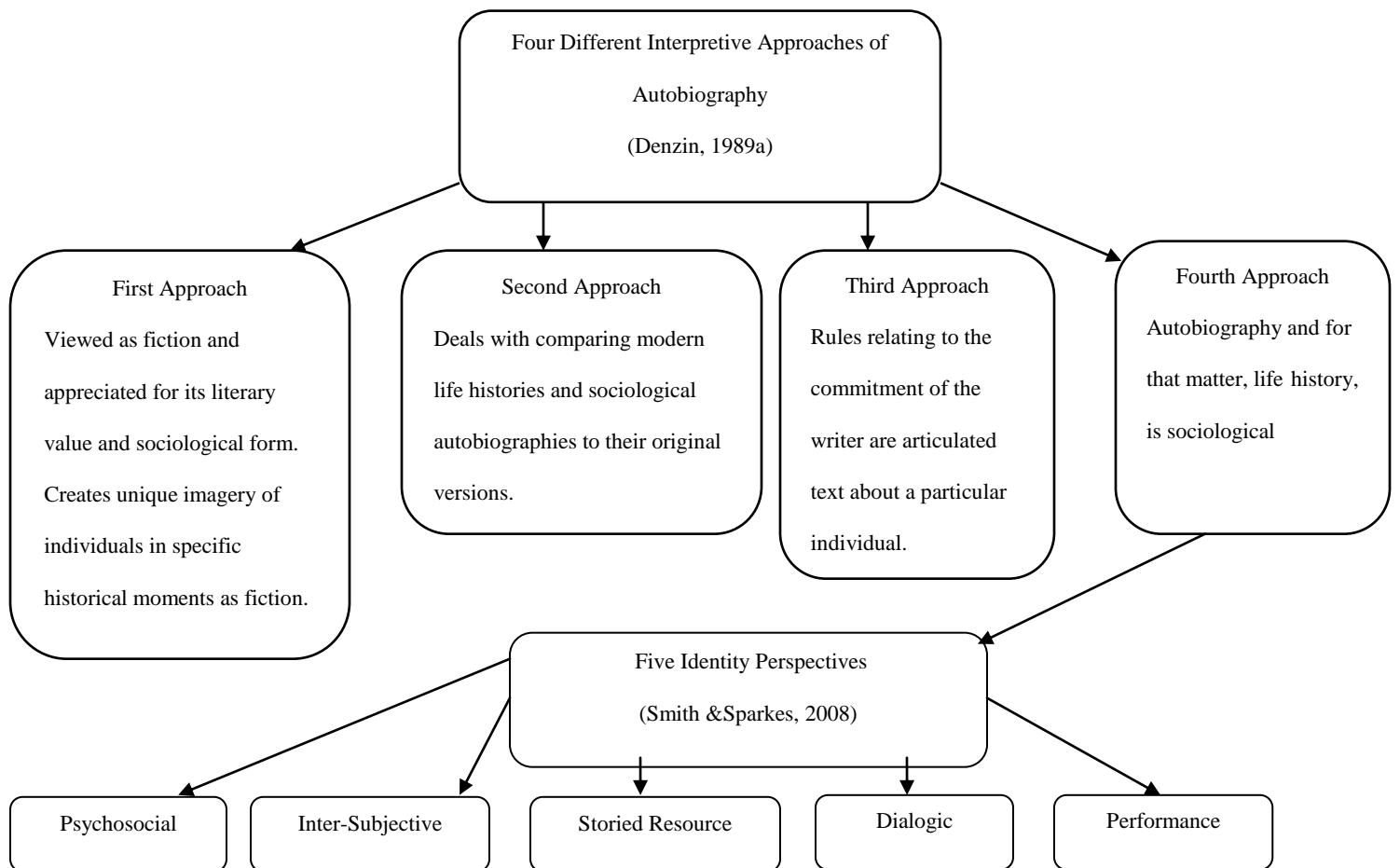


Figure 1. Overview of theoretical framework.

Assumptions of the Study

The researcher formed the following assumptions that constitute the basis for data collection, the analysis of the data, and data reporting:

1. The two sets of interview questions presented to the participants are appropriate and pertain to the research question.
2. Comments by the participants accurately express their experiences with the SpeechEasy® device.

Limitations of the Study

Several limitations characterize this study. First, the participants of this study were located in various locations in the State of Alabama and the State of Georgia. Specifically, this study is limited to the previously mentioned states and to the six adult participants selected by licensed Speech and Language Pathologists who are approved by the Janus Development Group, Inc. to distribute and administer the SpeechEasy® device in these states. Consequently, this study cannot be generalized to all individuals who use the SpeechEasy device.

Second, there was limited literature available on the topic of job contentment of individuals gainfully employed that use assistive technology (AT) in the workplace. While there was an abundance of peer-reviewed literature on the topic of job satisfaction as a whole, there was limited relevant literature on job satisfaction as it pertains to individuals with disabilities and their use of AT in the course of their employment. The bulk of the literature on job satisfaction focused on the job satisfaction levels of (a) health care workers, (b) staff that work with individuals with developmental disabilities in residences and sheltered-workshops, (c) teachers, (d) unionized employees from various occupations and

professions, and (e) the satisfaction level of university professors. In the present study, however, the participants revealed minimal increase in participation in workplace education activities.

A third limitation was not observing the participants in their natural environments for an extended period of time. If it were feasible to do so, it would have provided an opportunity for richer descriptions than what the participants contributed in their brief, online journal submissions.

Auto-Ethnographic Review of the Researcher

Reflexivity and Subjectivities

When writing qualitative research it is important to be reflexive and disclose the researcher's subjectivities (Creswell, 2007). The researcher's writing in qualitative research is a reflection of personal experiences, as well as cultural, social, gender, and political beliefs that come through in the research process. Additionally, researchers bring their own concepts and philosophical beliefs into the research process (Merriam, 1998). For this study, the purpose of this auto-ethnographic review is to disclose all inherited and potential biases of the researcher.

Setting

New England is home to Maine lobster, the Boston Red Sox, baked beans and brown bread, cranberry bogs, Indian Pudding, Clam Chowder, The American Revolutionary War, Plymouth Rock, the infamous bar Cheers, and about a dozen or so premier colleges and universities. In this narrative, New England is where this auto-ethnographic account of my life as a whole takes its origins as it pertains to my stuttering.

Humble Beginnings and the Onset Experience of Stuttering

I was a lanky kid from your typical New England blue-collar Irish Catholic family who lived in low-income housing (oh all right, I should call it what it was, the projects). We lived about 13 miles north of Boston on the North Shore. Growing up near the ocean was nice, especially in the summer. It was not so nice in the winter. The year was 1986; President Ronald Reagan was in the Oval Office. One Thursday night, my mother made stuffed peppers for my father for supper because it was his favorite meal. Unfortunately, at the time I hated stuffed peppers, and one night I spoke up saying I didn't like them or to put it more accurately, I-I-I-I-I-I d-d-ddon't-t-t-t li-li-li-li-ke stu-stu-stu-stu-ffed pe-pe-pe-peppers. My parents were speechless.

My father looked at me dumbfounded saying, "How did this happen? David, stop that!" Then I heard my mother say, "Richard, quiet, let the boy speak! Can you repeat what you just said, David?" my mother asked. I did, and there was no change in my speech. To this day, I have often asked myself, "Why the onset of my stuttering?" Why was it that my stammering made itself known to me on that particular day?

Consequences of Stuttering

Upon hearing my stutter, my mother went to Mass regularly, saying a Rosary and praying that God would alleviate this speech impediment. This was and still is a common religious practice, especially in a blue-collar family where the only philosophical teachings on morality and decency were imparted to us by the Church. The fact is most of my relatives worked in factories (General Electric, Sylvania) or trades (painters, carpenters, plumbers). The point I am making is that my stuttering was not understood by my family. Quite often, inappropriate labels were placed upon me, in particular, on my intelligence.

The Early Years and Social Relationships

At the age of seven, I started stuttering. As mentioned, I am not sure why I started stuttering. However, I knew that I was distinctively different from my peers. As a seven-year-old who stutters, I was the target of every tease, insult, and characterization of the cartoon character Porky Pig. Soon after, I attended my first speech-language therapy session, which I found to be monotonous. I remember asking the Speech-Language Pathologist (SLP) during one of my perceived boring speech therapy sessions what I should do about the other kids making fun of me. I wanted them to stop making fun of me! The answer I got from her was to ignore them and not to stoop to their level. My mother offered this same advice. Obviously, I asked that question because of my desire to stop stuttering immediately. My parents had the great idea of putting me in Cub Scouts. I already didn't fit in with my schoolmates because of this unwanted speech impediment and now they wanted to put me in a Cub Scout den with all my peers from school who relentlessly tormented me about my speech. In spite of this torment, I stayed in Scouting through my teen years and achieved the highest honor a Boy Scout can achieve, the Eagle Scout Award.

One would think I would have fought back but instead I told myself that I am better than these people are and I shouldn't stoop to their level. Often, I thought to myself, "Just because I stutter doesn't mean I'm stupid; why aren't they giving me a fair shake?" At the time, I was aware that I would have to deal with this type of displayed behavior for the rest of my life.

An Angry Teenager and Social Relationships

Ah to be a teenager again, --the pimples, a full head of hair, the dingy flannel shirts, President William Jefferson Clinton was just elected to the Presidency, Operation Desert Storm was just wrapping up, and the absolute worst years in my history of stuttering were

taking place. It is a widely held view that adolescence is the worst years in an individual's life. Tossing in a speech impediment was like adding gasoline to the fire. I was still in speech-language therapy. My fluency had improved considerably; I was stuttering less. Unfortunately, being an individual who stutters, I had a limited amount of social relationships with others. Often, I found people were embarrassed to be around me. Even the people who did accept me would take the occasional cheap shot at my speech. One of the most difficult experiences was asking girls to school dances. By the time I got out "W-w-w-w-will you g-g-g-go to the sc-sc-school dance with me?" they were already halfway across the room laughing at me.

It was during this time in my life that I started to inquire about cures, surgeries, medications, or anything to stop this life inhibiting speech disorder. I knew this stuttering issue would influence my college career and the way my peers viewed me. At that point in my life, as mentioned, I started looking into devices and medications that might reduce or stop stuttering. The results of my informal investigating revealed that these devices were expensive. The figure I received was around \$2,500. I was an 18-year-old kid earning \$7.00 per hour. Therefore, it was not possible for me to purchase a DAF or an AAF device.

College Years

College: a time in an individual's life for embracing new ideas and becoming a discerning individual. Unfortunately, college was not conducive to a young kid who stutters with a chip on his shoulder. I remember meeting my roommate, a 21-year-old sophomore. At that time, I was an 18-year-old chain smoking kid fresh out of the projects. I had a car and there were two liquor stores that were no more than a five-minute drive from the dormitory. I

believe one can see where this is going. The point is I wasn't stuttering at all when I was drunk.

Desperate to make new friends, I ended up going down to the college radio station on the advice of a couple of classmates from Professor Cummings' History 101 class. The radio show grew in popularity because I allowed them to use me and my stuttering as the punch line. I have some fond memories with these guys and not so good memories from that period in my life. Again, I'd like to point out, we did have our fun. I got to all the in-crowd parties and it felt good to be a part of the in-crowd in spite of being viewed as the stuttering computer geek.

It was at this point that I needed to find another way to cure my stuttering. Once more, my commitment was renewed to looking into all devices that might alleviate my stuttering. I consulted a Speech and Language Pathologist to see if these DAF or AAF devices were a viable solution for me. I was informed by the Speech and Language Pathologists that these devices were experimental. She then went on to tell me that there was no guarantee with these DAF or AAF devices and proceeded to get on her soapbox about how behavior modifications were the only way to reduce stuttering. Having already engaged in speech therapy where behavior modification was the primary treatment method, I thanked the Speech and Language Pathologist for her time and I left. I knew that not all Speech and Language Pathologists were in agreement with this one individual whom I consulted. In any case, I was aware that if I didn't find a way to stop this stuttering, there were going to be dire consequences for me in the job market. I found my peers in the workplace were just as prejudicial and ignorant toward people who stuttered as my peers were in school.

The Identity of Being a Stutterer in the Workforce

Often, I would be on the receiving end of employment discrimination whether it was from initial hiring to visible jobs (visible meaning any job where I would have to interact with people), or application for a promotion. I found Human Resource Directors (HRD) wanted a certain image, and sadly being a stutterer was often not a part of that image. The common misconception is that stutterers are not intelligent. This could not be farther from the truth. As an example, I have a Masters of Education in Instructional Design and a Bachelors of Liberal Studies. Again, I was even more committed to looking into all devices that might eradicate my stuttering. Again, I consulted another Speech and Language Pathologist who agreed with me and thought a DAF or an AAF device was appropriate. Again, the issue of cost was the primary factor. I wanted to be sure that if I were to spend that kind of money I would require a noticeable reduction in my stuttering.

Graduate School and the Present Day

At The University of Massachusetts-Boston (UMB), I started to see a change. During my time at UMB as a graduate student working toward my Masters of Education in Instructional Design, I found that my colleagues didn't care about my stuttering as long I could produce the work. For the first time, I was treated with equality, and it felt great! My colleagues were interested in what I had to offer. They wanted my opinion, and they didn't care about my stuttering. At UMB, I was offered and accepted a graduate assistantship working with university-wide faculty in the design and development department with their online courses. I was respected and appreciated. I presented my work with my two other colleagues at my first regional professional conference. Due to the respect gained as an effective and creative instructional designer, I was offered letters of recommendation to pursue my Ph.D. at The University of Alabama (UA). At UA nobody even makes mention of

the stuttering. I am not viewed as “David the stutterer,” but rather as “David the researcher and doctoral student.” However, the desire to speak fluently has not left me. In fact, it has grown exponentially. I am sure that my desire to speak fluently is the same as with others who stutter.

Identity of Being a Stutterer

Obviously, being a stutterer has affected my life and, of course, my identity. That is to say, stuttering has influenced both my self-concept and all other areas of my life. As such, my choice to enter the profession of education was initially due to the widely held view that the discipline of education is typically more accepting of all individuals.

Moreover, being a stutterer intrinsically motivated me to be the absolute best in my work (or in anything I do, for that matter). Second won’t do it. As previously stated, I have to deal with close-minded or uneducated individuals who have preconceived notions about me solely based on the way I speak. It is because of these preconceived ideas about my stuttering that I feel I have to perform better than others do. I feel a need to go above and beyond what is required of me in an effort to extinguish any associated ignorance or stereotypes surrounding my stuttering. Considering all this, I can succinctly state that stuttering had a significant influence on my identity as a member of society.

Anti-Stuttering Devices and the Researcher

As a side note, I have never used the SpeechEasy® device or any other anti-stuttering device. As I have alluded to throughout my auto-ethnographic review, the primary reason for not using the SpeechEasy® device is the cost. Not having used any of these anti-stuttering devices allows me to be more objective in this study because I have no allegiance or bias to any one device.

Definition of Terms

Definitions included in this study are:

Altered Auditory Feedback (AAF) Devices. An encapsulating term for delayed auditory feedback (DAF) and frequency altered feedback (FAF) (Lincoln, Walker, & Brooks, 2005).

Basic Fluency System™. A device manufactured by Casa Futura Technologies that functions by connecting directly to a telephone. The individual user hears his own voice and the caller's voice in both ears; the caller hears the individual user's normal voice (Casa Futura Technologies, n.d.).

Delayed Auditory Feedback (DAF). A device that replays the feedback of the individual's voice with a half-second delay (Ward, 2006).

Casa Futura Technologies (CFT). A manufacturer of reduced cost anti-stuttering devices and products (Ratner & Tetnowski, 2006).

Case Study Research. A research method that explores and depicts a setting with the intention of developing an understanding of that setting (Yin, 2003).

Choral Effect. Occurs when a stutterer speaks or sings in unison with others (Wingate, 1997, 2002).

Convenience Sampling. A type of nonprobability sampling that is the most cost effective and easiest to conduct (Cooper & Schindler, 2006).

Edinburgh Masker. The first portable electronic assistive technology made available to individuals who stutter (Dewar, Dewar, & Anthony, 1976; Dewar, Dewar, & Barnes, 1976; Ward, 2005).

Facilitator Model 3500. A tool that is marketed by Kay Elemetrics, Inc. as a speech therapy tool (cf., Ratner & Tetnowski, 2006) and was initially developed by Dr. Daniel Boone (Boone, 2008; Kappentax, Inc., 2008).

Fluency Master®. An anti-stuttering device called a voice enhancer developed by Dr. Ronald Webster of the Hollins Communication Research Institute (Merson, 2003).

Frequency Auditory Feedback (FAF). A device that replays the feedback of the individual's voice with no time delay; instead there is a change in pitch (Ward, 2006).

Judgment Sampling. Participants are selected based on a specific criterion (Cooper & Schindler, 2006).

Larynx. "The modified upper part of the trachea of air-breathing vertebrates that in humans, most other mammals, and some amphibians and reptiles contains the vocal cords" (Merriam-Webster Online Dictionary, 2008).

Narrative Research. A qualitative research method that "...incorporates many forms, such as autobiography, life stories, personal stories, as well as biographies" (Creswell, 2007, p. 4).

Neo-Technological. The development of new technology (Levitt, 1989).

Pacemaster®. A tiny electronic metronome which is small enough to fit in a behind-the-ear-hearing case (Wingate, 1997).

Prima Facie. Evidence defined as true, valid, or a sufficient first impression (Merriam-Webster Online Dictionary, 2008).

Pocket Speech Lab™. A device manufactured by Casa Futura Technologies that analyzes the user's voice to determine whether the vocal folds are tense or relaxed (Casa Futura Technologies, n.d.).

Qualitative Research. A research methodology that collects data through interviews, observations, and historical documentation in order to contribute to the development of a theory from observations and intuitive knowledge gained from fieldwork (Merriam, 1998).

School DAF™. A device manufactured by Casa Futura Technologies that is used primarily for resolving childhood stuttering (Casa Futura Technologies, n.d.).

SmallTalk™. A device manufactured by Casa Futura Technologies that induces a carryover effect thus lessening the individual user's need to use the device. Similar to the Basic Fluency System™ product, Smalltalk™ plugs into the telephone as well. The process by which SmallTalk™ functions is the same as the Basic Fluency Systems™.

SpeechEasy®. A fluency device that was developed based on the choral effect to alleviate stuttering (SpeechEasy, n.d.).

Stuttering. A disorder in which an individual's speech is impaired by audible and non-audible disruptions in fluency (Bloodstein, 1981).

Vocal Feedback Device (VFD). An anti-stuttering device called a voice enhancer that uses an electronic sensor which rests on the larynx of the user to assist in controlling their stuttering (Wingate, 1997).

Voice Enhancers. Refers to two anti-stuttering devices, Fluency Master and Vocal Feedback, that were developed and marketed in the 1990s (Merson, 2003; Wingate, 1997).

Workplace Education. Training intended for adults who are motivated to better themselves for intrinsic or extrinsic reasons (Hirsch & Wagner, 1995).

CHAPTER 2

LITERATURE REVIEW

Overview of Assistive Technology

Assistive technology (AT) refers to a piece of equipment obtained by an individual with a disability to improve his or her overall quality of life (Johnson, Dudgeon, Kuehn, & Walker, 2007; Johnston, Beard, & Carpenter, 2007; Scherer, 1998). Moreover, AT has afforded many opportunities for individuals who would otherwise be unable to function as full productive members of society and gain control over their lives while reducing reliance on others (Mechling, 2007; Strobel, Fossa, Arthanat, & Brace, 2006). These opportunities would be nonexistent if not for the present availability of technological solutions.

Assistive Technology in the Workplace

Gamble, Dowler, and Orslene (2006) describe several obstacles that make it difficult for individuals to obtain assistive technology (AT) for employment and workplace accommodation. One such challenge is keeping up with the latest developments as well as the discontinuation of AT products. What is more, Gamble, Dowler, and Orslene (2006) make reference to the issue of compatibility and the individual user. Often, an AT designed for specified workplace accommodation (e.g., visual impairment, hearing impairment, physical impairment, speech impairment, learning impairment) may be incompatible with an individual's needs. For example, an individual with a physical impairment employed as a copier technician might benefit from having an electronic wheelchair capable of carrying his tools. In addition, individual satisfaction plays a significant role in the use of an AT for

workplace accommodation. Yet, another reason for the lack of workplace success for individuals with disabilities stems from the perceived lack of availability of AT (Yeager, Kaye, Reed, & Doe, 2006). Related factors are deficiencies in education, negative mind-sets of employers surrounding individuals with disabilities and the use of AT, and the individual's perceived lack of the availability of AT. The gap that separates the typical individual and the AT designed for individuals with disabilities is not as great as once thought (Boone & Higgins, 2007). This gap reduction was largely due in part because of the implementation of Computer Assistive Technology (CAT) (Brodwin, Star, & Cardoso, 2004).

Computer Assistive Technology and Workplace Education

Computer Assistive Technology (CAT) has drastically improved employment opportunities for individuals with disabilities (Brodwin, Star, & Cardoso, 2004). This improvement is not just restricted to employment but to learning as well. Uppal (2005) reported that individuals with disabilities report lower levels of job contentment compared to their non-disabled counterparts in the workforce. CAT has been used in the workplace and has been effective in workplace education of individuals with disabilities (Brodwin, Star, & Cardoso, 2004; Uppal, 2005).

Descriptive Definition of Stuttering

The American Psychiatric Association's *Diagnostic and statistical manual of mental disorders* (DSM-IV-TR) describes stuttering as a fracas in an individual's normal speech fluency and time patterning of one's speech that is typically inappropriate for the individual's age. This verbal disturbance impedes scholarly or career-related accomplishments as well as public communication. Other characteristics of stuttering are as follows: (a) the duplication

of sound and syllables, (b) prolongation of sounds, (c) other associated speech disruptions such as outburst, (d) broken words (e.g., silences mid-sentence), (e) blocks (both audible and non-audible), (f) replacing words in order to avoid challenging words or sounds, (g) speech produced with excessive bodily strain (e.g., head jerking, eye movement, breathing movement), and (h) repeating single syllable whole words (e.g., “I-I-I-I see you.”) (American Psychiatric Association, 2000). A similar description is on the World Health Organization’s (WHO) website:

Speech that is characterized by frequent repetition or prolongation of sounds or syllables or words, or by frequent hesitations or pauses that disrupt the rhythmic flow of speech. It should be classified as a disorder only if its severity is such as to markedly disturb the fluency of speech. (Schopen, 2006, ¶ F98.5)

It should be noted that these descriptive definitions are limited to the psychology paradigm given that prominent speech and language scholars disagree with the accuracy of these psychological definitions (Bloodstein, 1981; Wingate, 2002).

Wingate (2002) stipulates that there is broader descriptive meaning and to assume that one definition that encompasses all the research is incomplete. Rather, two different types of facts are associated with stuttering. The first type refers to facts *about* stuttering. Wingate (2002) depicts this first type as “observations made about a recognized phenomenon, whose identity is conveyed in the term by which it is known” (p. 10). In other words, observations about stuttering do not directly tell the researcher anything about stuttering as a disorder other than what is observed (Wingate, 2002). In contrast to facts *about* stuttering, the second type refers to facts *of* stuttering. Wingate states, “The facts *of* stuttering are observations by which the phenomenon is recognized; they are intrinsic to its

identity" (2002, p. 10). Bloodstein (1981) states that stuttering is viewed as a disorder in which the individual's speech is impaired by audible and non-audible disruptions in fluency. Thus it would appear that both Bloodstein (1981) and the DSM-IV-TR (2000) are in mutual agreement with some aspects of a general definition of stuttering characterized by facts *about* stuttering or facts *of* stuttering. Moreover, it should be noted that Bloodstein (1981; 1993) does not share a similar view with Wingate (2002) about conformist definitions of stuttering. Bobrick (1995) attempts to provide a broader definition that is similar to Bloodstein's (1981; 1993) definition of stuttering. Bobrick states that stuttering is unintentional repeating or prolongation of sounds in which blocking may occur as being audible or in audible. In addition, inaudible blocking includes the following: facial contusions, hand-movements, jerking of the head, and other body movements (Bloodstein, 1981 & 1993; Bobrick, 1995; Wingate, 2002). Furthermore, interjections such as "well," "um," "err," and "ah" are the oral tics associated with stuttering and are often used as defense mechanisms (Bloodstein, 1981; Bobrick, 1995; Wingate, 2002). Yet, Packman and Attanasio (2004) and Ward (2005) state that there is no agreed upon consensus of a definition. Without such consensus, there cannot be an agreed upon framework from which research can be performed. It would appear that Packman and Attanasio are in agreement with both Bloodstein and Wingate. However, Bloodstein (1993) synthesizes these varied definitions of stuttering into three notions: (a) a cessation of synchronization of speech muscles, (b) a response of struggle or avoidance in anticipation of perceived speech difficulty, and (c) an attempt to fulfill an unconscious phobic need. These noted scholars attempt to give a clearer definition of what stuttering is. Radford et al. (2005), Ward (2005), and Wingate (2002) emphasize that stuttering is a

complicated disorder and without knowing definitively the cause of stuttering, one cannot secure a cure.

Overview of Anti-Stuttering Devices

Lincoln, Walker, and Brooks (2005) stated that altered auditory feedback (AAF) is an encapsulating term for delayed auditory feedback (DAF) or frequency altered feedback (FAF). Borsel, Sierens, and Pereira (2007) reveal that altered auditory feedback (AAF) devices (e.g., delayed altered auditory feedback (DAF) and frequency altered feedback (FAF) have had positive effects on the improvement of an individual's fluency. Bloodstein (1981), Borsel et al. (2007), Wingate (1997, 2002), and Zimmerman et al. (1997) agree that AAF devices do improve fluency in some individuals. This improvement in fluency stems from the choral effect that occurs when a stutterer speaks or sings in unison with others (e.g., a choir, karaoke). When this occurrence of the choral effect takes place, the stuttering is greatly reduced or eliminated (Ward, 2006). Individuals who stutter are willing to try these devices in hopes of alleviating their speech disfluencies (Ratner & Tetnowski, 2006). However, there is a lack of unbiased information regarding the value and usefulness of anti-stuttering devices. To examine accurately the effectiveness of anti-stuttering devices, one would need to gauge an individual stutterer's speech in everyday life (Lincoln et al., 2006). This involves evaluating individuals in common places and situations such as their place of work, social settings, home, and in their interactions with family and friends (Lincoln et al., 2006). These assistive technologies for improving fluency offer the individual stutterer a better life since the effect of this disability brings about a sense of normalcy (Wisniewski & Sedlak, 1992). These neo-technological devices improve the fluency of an individual with a speech disorder (Levitt, 1989). Lincoln et al. (2006) argue through an assessment of the literature that no

study has thoroughly investigated the impact of AAF when combined with traditional types of therapy for fluency disorders. The following paragraphs provide a chronological overview of AAF devices.

Edinburgh Masker

The Edinburgh Masker was the first portable electronic assistive technology made available to individuals who stutter (Dewar, Dewar, & Anthony, 1976; Dewar, Dewar, & Barnes, 1976; Ward, 2006). This device produces a masking noise through earphones upon receiving input from the microphone, which is placed above the skin at the individual's larynx. The Merriam-Webster online dictionary defines the larynx as "the modified upper part of the trachea of air-breathing vertebrates that is unclear in humans." While the Edinburgh Masker lacks aesthetic appeal, it is concealable just by wearing a collared shirt. However, it was a bulky device in that the size of the battery necessitated the use of a backpack to be portable (Molt, 2005). The Edinburgh Masker has not been manufactured since 1990 (Molt, 2005). No reason is given in the literature. A photograph taken from Molt (2005) of the Edinburgh Masker is displayed below. (See Figure 2.)



Figure 2. Photograph of Edinburgh Masker (Molt, 2005).

Laboratory tests revealed the benefits of the Edinburgh Masker (Dewar, Dewar, & Anthony, 1976; Dewar, Dewar, & Barnes, 1976). In the first set of laboratory tests, 53 individuals who stutter were selected from a broad age group (9-56 years) and were presented with three speech scenarios: (a) reading standard prose passage, (b) reciting from memory a nursery rhyme, and (c) giving an *extempore* speech commentary on a series of drawings of familiar objects (Dewar, Dewar, & Barnes, 1976, p. 21).

These tests were performed with and without the use of the Edinburgh Masker. The results of the first two tests (i.e., reading standard prose passage and reciting from memory a nursery rhyme) revealed statistically significant improvements in the speech of the participants when using the Edinburgh Masker ($p < 0.005$ or 0.001). The third test, giving an *extempore* speech commentary on a series of drawings of familiar objects, did not reveal any statistically significant data. One participant was repeatedly tested over a 22-week period while using the Edinburgh Masker. Within that 22-week period, the data revealed no reduction of the effectiveness of the device through habituation, and the number of speech disfluencies was constantly minimal. In addition, the data revealed a reduction of concomitant behaviors usually associated with stuttering while using the Edinburgh Masker. A confirmatory study (cf. Dewar, Dewar, & Anthony, 1976) was performed to confirm the data revealed in the initial study.

Pacemaster®

Pacemaster® is a tiny electronic metronome (Wingate, 1997) that is small enough to fit in a behind-the-ear- hearing case. The rate of the beat is regulated with a partially opened wheel mounted within the case. The sound is transmitted via a small tube and earplug. The Pacemaster® regulates the individual's speech disfluencies by providing a rhythmic effect

that allows the individual user to speak with the rhythmic beat. Thus, speech fluency is increased (Kuster, 1998). The Pacemaster® was originally developed in 1968 but quickly lost favor because of the device's inability to provide a long-lasting reduction in stuttering (Molt, 2005).

Casa Futura Technologies®

Since 1992, Casa Futura Technologies (CFT) has been manufacturing reduced cost anti-stuttering devices and products (Ratner & Tetnowski, 2006). Moreover, the majority of products developed by CFT provide DAF, FAF, and auditory masking. The top of the line product put out by CFT at the time of Ratner's and Tetnowski's publication (cf. Ratner & Tetnowski, 2006) was called the Ultimate Fluency System™. A recent review of CFT's website and research databases for information regarding the Ultimate Fluency System™ is unavailable. A website review of the latest products developed by CFT for individuals who stutter revealed four devices:

- (1) Pocket Speech Lab
- (2) School DAF
- (3) Basic Fluency System
- (4) SmallTalk (Casa Futura Technologies, n.d.).

Pocket Speech Lab™. Casa Futura Technologies' website describes the technical features of this product as a device that analyzes the user's voice to determine whether a person's vocal folds are tense or relaxed. This information is provided in three ways. First, a red light indicates tension in the voice, which precedes stuttering. The light changes to green when the individual's voice relaxes. Second, DAF/FAF sound switches on when the individual's voice is tensed. The sound switches off when the individual's voice relaxes.

Third, the *negative feedback* trains the user to produce relaxed, fluent speech without the aid of the device, thus reducing long-term use. Figure 3 displays a photograph of the Pocket Speech Lab™ device taken from the CFT website.



Figure 3. Photograph of Pocket Speech Lab.

School DAF™ is a device used primarily for resolving childhood stuttering. Moreover, SchoolDAF™ is not available to consumers but rather to institutions (e.g., schools, universities) and Speech and Language Pathologists. School DAF is currently used in K-12 settings. CFT's website claims that there is a 70% immediate reduction of stuttering without any training from a Speech and Language Pathologist. A study performed by Borsel, Reunes, and Van den Bergh (2003) revealed an immediate decrease of the number of disfluencies in individuals who stutter. A single participant clinical case study revealed that fourteen hours of structured speech therapy with mediated learning and a Casa Futura Technologies DAF device reduced stuttering from 9% disfluencies to 4.8% disfluencies when speaking without the device. One year later the participant's stuttering was still 4.8% disfluencies. Another fourteen hours of similar treatment reduced the participant's stuttering to 4.1% disfluencies (Radford, Tanguma, Gonzalez, Nericcio, & Newman, 2005). Figure 4 below displays a photograph of the School DAF™ device taken from the CFT website.



Figure 4. Photograph of School DAF System™ (Casa Futura Technologies, n.d.).

Basic Fluency System™ is a device used for facilitating telephone communication for people who stutter. According to the CFT website, this device functions by connecting directly to a telephone. Individual users hear the DAF of their own voice and the caller's voice at the same time in both ears; the caller hears the individual user's normal voice. The device allows the individual user to take part in speech-therapy every time the phone rings. Figure 5 below displays a photograph of the Basic Fluency System™ device taken from the CFT website.



Figure 5. Image of Basic Fluency System™ (Casa Futura Technologies, n.d.).

SmallTalk™ is a device that induces a carryover effect thus lessening the individual user's need to use the device. Similar to the Basic Fluency System™ product, SmallTalk™ plugs into the telephone as well. The process by which SmallTalk™ functions is the same as

the Basic Fluency Systems™ (see Figure 6). An image of the SmallTalk™ device taken from the Casa Futura Technologies (CFT) website is shown below.



Figure 6. Image of SmallTalk™ (Casa Futura Technologies, n.d.).

The Facilitator Model 3500®

Since 1996, the Facilitator Model 3500 is a tool that is marketed by Kay Elemetrics, Inc. as a speech therapy tool (Ratner & Tetnowski, 2006) and was initially developed by Dr. Daniel Boone (Boone, 2008; Kaypentax, Inc., 2008). The image of the Facilitator Model 3500 that is displayed below is taken from the Kay Elemetrics, Inc website (see Figure 7).



Figure 7. Photograph of Facilitator® (Kaypentax, Inc., 2008).

Use of the Facilitator has a significant learning curve. The size of this particular device is small enough that it can be carried in a hip pack. The Facilitator addresses the five modes of auditory feedback, as described by Kaypentax, Inc. (2008):

- I. Real-time speech-voice amplification (70-7000 Hz) Clients or patients wear headphones and hear their own speech or voice as they

have never heard it before. Such fidelity feedback can often shorten the time it takes to change and improve one's speech or voice.

Loop immediate playback. What one has just said can be played back immediately with the tap of a button. This immediate feedback is ideal in the teaching of accent (or accent elimination) or clarity of speech or in working to improve the sound of one's voice.

II. Delayed Auditory Feedback (DAF) (10-500 milliseconds)

The auditory feedback of what one has just said is delayed, which has the immediate effect of slowing one's speech. DAF has proven over the years that it is an effective treatment for both stuttering and cluttering. DAF is also effective in slowing down anyone who wishes to talk more slowly.

III. Speech-range masking. It becomes impossible to hear one's speech or voice under conditions of auditory masking. We can hear what someone sounds like or uncover one's natural voice when the patient (wearing headphones) is listening to masking while speaking or reading aloud.

IV. Metronomic pacing (50-150 beats per minute). An electronic metronome can aid in controlling one's rate of speech, slowing it down or speeding it up (Boone, 2008, pp. 1-5).

Voice Enhancers

Fluency Master®. In the 1990s, two anti-stuttering devices were developed and marketed (Merson, 2003; Wingate, 1997). The first device, called the Fluency Master®, contains a tiny microphone with a minuscule thin tube that is attached to the device. The microphone is attached to the skin behind the ear and the tube leads into a molded earpiece

similar to a hearing aid. A photograph of the Fluency Master® is available at <http://www.stutteringcontrol.com>. The Fluency Master® was developed by Dr. Ronald Webster of the Hollins Communication Research Institute (Merson, 2003). Merson (2003) performed a study which examined 30 individuals, 25 males and 5 females, between the ages of 11 and 61 within the first 2 hours of using the Fluency Master®. Males displayed a 50% to 74% reduction in their stuttering. Likewise, females displayed a 25% to 50% reduction in their stuttering. The Fluency Master® is not intended to act as a substitute for speech and language therapy (Merson, 2003). However, Wingate (1997) notes that users of Fluency Master® are expected to embark on training relating to the correct usage of this particular device. Moreover, the content of the training includes “rehearsing controlled utterances that gradually increase in length, beginning with single-syllable words and gradually increasing into brief sentence” (Wingate, 1997, p. 190). Figure 8 displays the image of the Fluency Master and is taken from National Association for Speech Fluency, Inc website, which is <http://www.stutteringcontrol.com>.

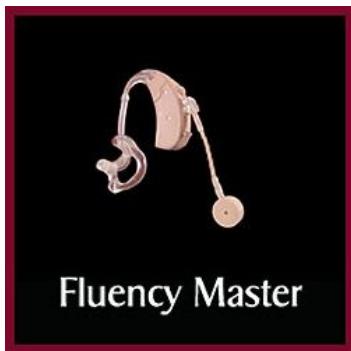


Figure 8. Photograph of Fluency Master® (National Association for Speech Fluency, n.d.).

Vocal Feedback Device™. The second device within the category of voice enhancers is called the Vocal Feedback Device (VFD) (Wingate, 1997). The device has three

components: (a) a power pack which is about the size of a cigarette pack, (b) an electronic sensor which is situated on the larynx (similar to the Edinburgh Masker), and (c) microphone which is fastened on the shirt. Similar to the Fluency Master®, the VFD requires potential users to participate in a training program that teaches the user to speak slowly and deliberately. More information on the Fluency Master can be obtained at <http://www.stutteringcontrol.com>.

SpeechEasy® Device. According to both the Janus Development group and the SpeechEasy® product website, SpeechEasy® is a fluency device developed using the choral effect. The choral effect occurs when a stutterer speaks or sings in unison with others (e.g., a choir, karaoke). When this occurrence of the choral effect takes place, the stuttering is greatly reduced or eliminated (Ward, 2006). The SpeechEasy® device recreates this choral effect for individuals who desire a treatment of stuttering for everyday life. The research reveals that choral speech stimulates immediate normal-sounding speech that is reasonably free from speech disfluencies and is comparable to the speech patterns of individuals with no history of disfluencies (Kalinowski, Saltuklaroglu, Stuart, & Guntupalli, 2007).

There are many reported successes regarding the efficacy of SpeechEasy® and the reduction of stuttering (Armston, Kieft, Mason, & Croos, 2006; Stuart Xia, Jiang, Jiang, Kalinowski, & Rastatter, 2003). Accordingly, O'Donnell, Armston, and Kieft (2008) found that stuttering was reduced with long-term use of SpeechEasy®. Moreover, SpeechEasy® and other similar electronic in-the-ear devices successfully reduced the number of disfluencies for stutterers (Stuart, Kalinowski, Rastatter, Saluklaroglu, & Dayalu, 2004; Zimmerman et al., 1997). Kalinowski (2003) reports in his autobiographical clinical commentary that within 10 months from commencing his use of the SpeechEasy® device he

noticed a dramatic reduction of his speech disfluencies. Also, Kalinowski (2003) and Stuart, Xia, Jiang, Y., Jiang, T., Kalinowski, and Rastatter, (2003) mention the aesthetic appeal that SpeechEasy® brings because of its in-the-ear-canal design.

Critics of SpeechEasy®. In contrast, there has been much criticism surrounding the use of SpeechEasy® and the methods by which SpeechEasy® has been evaluated. The primary criticism is that the research purporting the success of SpeechEasy® by both Janus Development Group, Inc. and the developers, Joseph Kalinowski and Andrew Stuart, was not developed by rigorous evidence based research methods (Finn, Bothe, & Bramlett, 2007). Instead, critics charge that this research was coined by Finn, Bothe, and Bramlett, (2005) as pseudoscience since their research methods allegedly circumvent scientific scrutiny. These critics have suggested that qualitative research is not valid and only evidence based research is valid. Another criticism is that this device was presented to the public first and not to the scientific community (Finn et al., 2005). Lastly, Finn et al. (2005) criticizes Kalinowski's (2003) autobiographical clinical commentary suggesting that it should not be the only basis for determining the soundness of a treatment plan for an individual who stutters. Also, another concern put forward by Ratner and Tetnowski (2006) was the cost of the SpeechEasy® device (\$3,600 - \$4,900). Figure 9, taken from National Association for Speech Fluency, Inc website, displays the image of the SpeechEasy.



Figure 9. Photograph of SpeechEasy® (SpeechEasy, Earpiece, 2007).

Literature Summary on Anti-Stuttering Devices

AAF devices are readily available for people who stutter to offer a viable alternative to traditional therapy (Lincoln, Walker, & Brooks, 2005). Additionally the literature review reveals the progression and advancement in anti-stuttering devices. Research on advancements in the technology of stuttering reduction devices reveals both praise (cf., Armston, Kiefte, Mason, & Croos, 2006; Kalinowski, 2003; O'Donnell, Armston, & Kiefte, 2008; Stuart, Kalinowski, Rastatter, Saluklaroglu, & Dayalu, 2004; Stuart Xia, Jiang, Jiang, Kalinowski, & Rastatter, 2003; Zimmerman et al., 1997) and criticism (cf., Finn, Bothe, & Bramlett, 2005; Ratner & Tetnowski, 2006).

Different Interpretive Approaches to Autobiography

Denzin (1989a) classifies autobiography into four different interpretive approaches. Denzin's (1989a) first approach is viewing autobiography as fiction. In this approach, autobiography is seen for its literary and sociological form that creates unique imagery of individuals in specific historical moments as fiction. Denzin's second approach deals with comparing modern life histories and sociological autobiographies to their original versions. In the third approach, Denzin focuses on the rules relating to the commitment of the writer to create an articulate text about a particular individual. Lastly, Denzin's fourth approach states that autobiography and for that matter, life history, is sociological. Figure 10 illustrates Denzin's four different interpretive approaches.

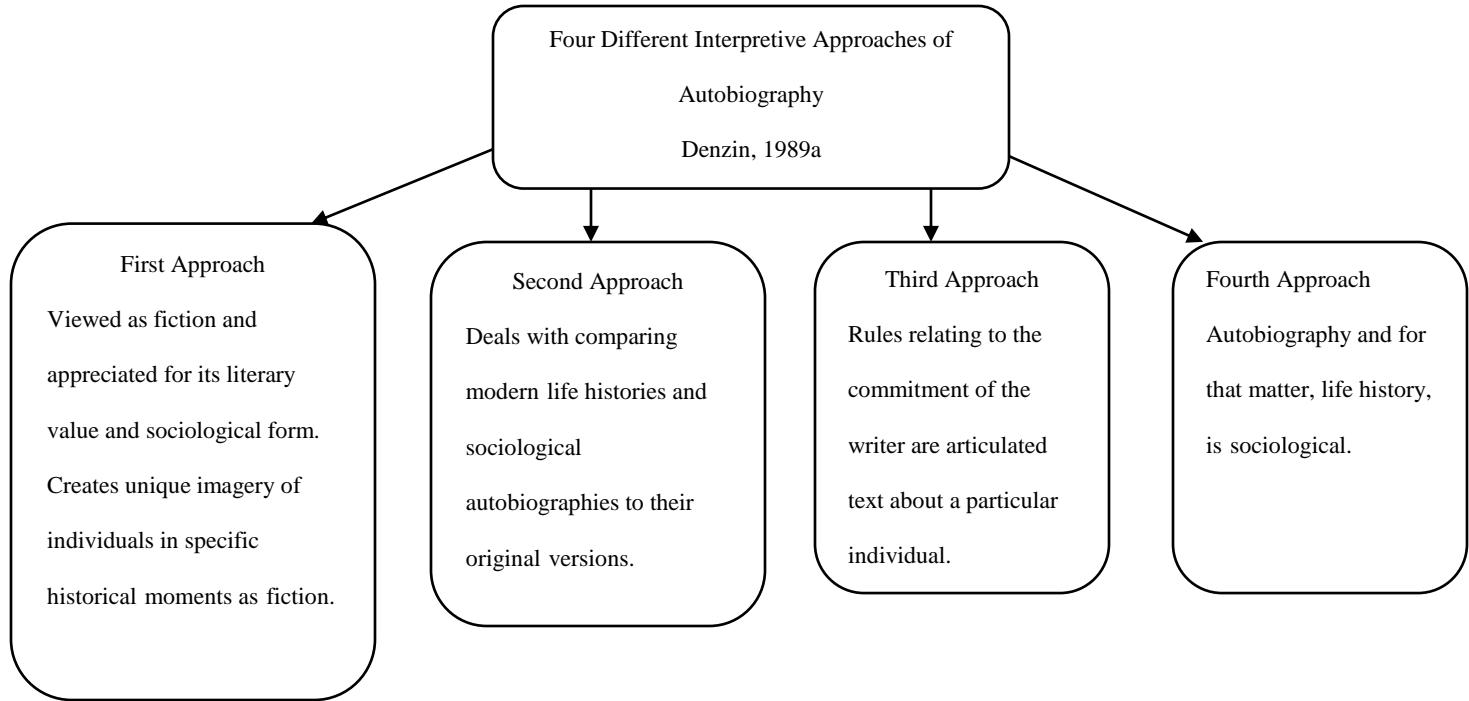


Figure 10. Denzin's four different interpretive approaches.

Finally, Denzin states that this approach has two different modes: “(a) sociologists writing about their own lives, and (b) sociologists writing about the lives of other individuals” (p. 38). Denzin (1989b) describes the process of interpretation as “being shaped by history, power, emotionality, and beliefs” (p. 28). History is intertwined in the research process in four ways:

1. the events and the processes surrounding them reveal themselves over time;
2. these occurrences transpire within a grander historical structure;
3. history operates at the level of individual history and personal biography; and
4. the research has a personal, historical relationship to the interpretive process.

(Denzin, 1989b, p. 28-29)

This section connects Smith and Sparkes' (2008) first identity perspective, psychosocial identity perspective to Denzin's (1989a) fourth interpretive approach. Based on the fourth interpretive approach of autobiography by Denzin (1989a), Smith and Sparkes (2008) developed five different narrative identities: (a) psychosocial, (b) the inter-subjective, (c) the storied resource, (d) the dialogic, and (e) the performative perspective. Table 1 illustrates Smith and Sparkes' five identity perspectives.

Table 1

Smith and Sparkes' Five Narrative Identity Perspectives

Narrative Identity Perspective	Description
(I) Psychosocial	(a) This perspective is influenced by the experience of the individual or a phenomenon associated with an experience.
	(b) This identity perspective considers the identities as a life story of an individual.
	(c) In this study, the psychosocial narrative perspective will be pursued.
(II) Inter-Subjective	(a) Focus is shifted from the perspective looking at exclusively the individual story to taking the view that there is no world independent of perceptions and reality (Smith & Sparkes, 2008).
	(b) The individual within the narrative is subjective.

(III) Storied Resource	(a) Focus is on culture and perspective is based upon socio-cultural phenomena.
	(b) Not applicable to this study because the personal aspect of the narrative is removed.
(IV) Dialogic	(a) Individual story in a narrative is not important (Smith & Sparkes, 2008).
	(b) Narratives are written for a social context.
	(c) Attention is focused on the social processes and not individual.
	(d) This narrative identity perspective would be highly inappropriate for this study because of the focus on social processes.
(V) Performance	(a) Focused more on the intangible concepts of self and identity as these narratives are “derived from social and relational processes” (Smith & Sparkes, 2008, p. 24).
	(b) The individual stories are not significant by themselves but rather as a cog in the wheel of the society.

This study pursued the psychosocial narrative perspective because it seemed best suited based on the research question, the focus of the study, and the review of literature. As further described by Smith and Sparkes, the psychosocial perspective contains two important

characteristics: (a) this perspective is influenced by the experience of the individual or a phenomenon associated with an experience, and (b) this perspective considers the identities as a life story of an individual. The life story typically is internalized because it has been developed over an extended period. The internalization that occurs in life stories is prevalent in the Andrew C. Sparkes article entitled: *The fatal flaw: a narrative of the fragile body-self*. In this article, Sparkes (1996) gives a detailed narrative about the high and low points of his back problems and how it affected his life. This research study is modeled after Sparkes' auto-ethnographic approach and takes into account the psychosocial perspective as presented by Smith and Sparkes (2008). Furthermore, this researcher's own experiences as a stutterer will serve as the auto-ethnographic framework for this project. The researcher's own experience as a stutterer is a good example of how a narrative report using the psychosocial narrative identity should look. Moreover, the psychosocial identity perspective focuses on the life-story of the individual. In addition, to account for the reason why the psychosocial narrative perspective was chosen over the other four narrative identities (e.g., the inter-subjective, the storied resource, the dialogic, and the performative perspective), the following paragraphs describe these reasons.

Inter-Subjective Identity Perspective

The inter-subjective perspective identity would not properly apply to this study since the focus is shifted from the perspective looking at exclusively the individual story to taking the view that there is no world independent of perceptions and reality (Smith & Sparkes, 2008). Rather, this narrative identity focuses on "cognitive structures for the way individuals understand the world" (Smith & Sparkes, 2008, p. 16). The individual within the narrative is subjective.

Storied Resource Identity Perspective

Similarly, a storied resource identity perspective would not apply to this research since the personal aspect of the narrative is removed from the surrounding environment (Smith & Sparkes, 2008). In this narrative identity, the individual mind is the transporter of culture interacting with the world around it (Smith & Sparkes, 2008). The narratives of the self in this perspective are based upon socio-cultural phenomena (Smith & Sparkes, 2008). Furthermore, the storied resources identity perspective requires an in-depth investigation of an individual's past and habits that outline the self narration (Smith & Sparkes, 2008).

Dialogic Identity Perspective

Yet in another narrative identity perspective entitled *the dialogic*, the individual story in a narrative is not important (Smith & Sparkes, 2008). Instead, the narratives are placed in a purely social context (Smith & Sparkes, 2008). The general mindset associated with the dialogic identity perspective tends to be geared toward generating a standpoint of culture whereas the stories people tell are immersed in the surrounding culture. In this particular narrative identity, the attention on the social processes and the notion of culture is preferred as the individual is not the focus. Therefore, since the social processes, not the individual, are the key focuses in this narrative identity perspective the dialogic identify perspective would be highly inappropriate.

Performance Identity Perspective

What is more, a fifth narrative identity perspective entitled *the performative perspective* focuses more on the intangible concepts of self and identity as these narratives are “derived from social and relational processes” (Smith & Sparkes, 2008, p. 24). It is because of this intangibility within these theoretical processes that these narratives are

viewed as being rooted with society (Smith & Sparkes, 2008). In other words, the individual stories are not significant by themselves but rather as a cog in the wheel of the society.

Similar to the dialogistic and storied resource perspective, the use of performance identity perspective would be inappropriate since this narrative identity focuses exclusively on the social processes and interactions found within the narratives and not the individual.

The next section reviews two theories pertaining to psychosocial identity development. First, Erickson's stages of psychosocial identity development were researched. Then, Chickering's seven vectors of psychosocial development were explored.

Erickson's Stages of Psychosocial Identity Development

Early psychosocial theories developed by Erickson (1959/1980, 1963, 1968) provide the theoretical framework needed to support the participants' reported experiences of acceptance and equality in the workplace derived from using the SpeechEasy® device. Erickson's psychosocial theory suggests that an individual's personality develops starting from childhood through old age (Erickson, 1959/1980, 1963, 1968; Terracciano, Costa, & McCrae, 2006). Erickson (1959/1980) described eight stages through which identity is developed throughout an individual's life. The eight stages are as follows: (a) trust vs. mistrust, (b) autonomy vs. shame and doubt, (c) initiative vs. guilt, (d) industry vs. inferiority, (e) identity vs. confusion, (f) intimacy vs. isolation, (g) generativity vs. stagnation, and (h) integrity vs. despair. At each stage, a psychosocial crisis occurs and needs to be resolved by the individual experiencing the change in identity to balance themselves with their external environment (Erickson, 1959/1980, 1963, 1968). Table 14 illustrates Erickson's eight stages of psychosocial development visually from childhood through adulthood.

Table 2

Erickson's Eight Stages of Development

Stage of Development	Description
Psychosocial Stage 1 – Trust vs. Mistrust	Begins between birth and one year of age and is the most fundamental stage in life. If a child successfully develops trust, he or she will develop a sense of security in the world. Failure to develop trust will result in a belief that their world is inconsistent and unpredictable.
Psychosocial Stage 2 – Autonomy vs. Shame and Doubt	Begins in early childhood and is focused on children developing a greater sense of personal control. Erikson believed that controlling one's body functions brought about a sense of independence, along with gaining control over food choices, toy preferences, and clothing selection. Children who successfully complete this stage feel secure and confident, while those who do not are left with a sense of inadequacy and self-doubt.
Psychosocial Stage 3 – Initiative vs. Guilt	Beginning during the preschool years, children begin to assert their will and control over the world through play and other social interactions. Children who are successful at this stage feel confident in their ability to lead others. Children who do not successfully acquire these skills are left with self-doubt, guilt, and lack of initiative.

Psychosocial Stage 4 –	Begins in the early school years from ages 5 to 11.
Industry vs. Inferiority	<p>Through social interactions with other children and adults, the child develops a sense of pride in their individual accomplishments.</p> <p>Children who are encouraged and recognized by parents, teachers, and other authority figures develop self-confidence in their abilities and belief in their skills.</p> <p>Those who receive little or no encouragement or recognition from parents, teachers, or others will doubt their ability to be successful.</p>
Psychosocial Stage 5 –	Beginning during adolescence, children explore their independence and develop a sense of self.
Identity vs. Confusion	<p>Those who receive positive reinforcement through personal exploration will emerge from this stage with a sense of self and feelings of self-reliance and control.</p> <p>Those who remain unsure of their beliefs will be insecure and confused about themselves.</p>
Psychosocial Stage 6 –	Beginning during early adulthood, individuals are exploring their personal relationships with others.
Intimacy vs. Isolation	<p>Individuals who are successful at this stage will develop relationships that are committed, secure, and mature. Individuals with a positive image of self identity will have more committed relationships versus individuals with low image of self identity.</p> <p>Individuals with a poor image of self identity are more likely to perceive themselves as being inferior to others in their world.</p>

Psychosocial Stage 7 - Generativity During adulthood, individuals continue to build their lives. Individuals at this stage vs. Stagnation are focused on career and family.

Individuals who are successful during this phase perceive themselves as active contributors to their family, community, and workplace.

Those who fail to become active contributors are unproductive and unininvolved in the world around them.

Psychosocial Stage 8 –	This phase occurs during old age and is focused on reflecting back on life.
Integrity vs. Despair	

Those who perceive themselves as unsuccessful will feel that their life has been wasted and will experience many regrets.

An individual who successfully completes this phase looks back on their life with few regrets.

The next section presents Chickering's seven vectors of psychosocial development. He developed these seven vectors based on Erikson's eight stages of psychosocial identity development as presented above. The following paragraphs describe Chickering's research on psychosocial development and provide details for his seven vectors.

Chickering's Seven Vectors of Psychosocial Development

Based on Erickson's earlier work in the field of psychosocial theory, Chickering (1969) conceived his seven vectors of development. In contrast to Erickson's eight stages of identity development, Chickering's seven vectors of development are not sequential. The seven vectors are (a) developing competence, (b) managing emotions, (c) moving through autonomy toward interdependence, (d) developing mature interpersonal relationships, (e)

establishing identity, (f) developing purpose, and (g) developing integrity. In 1993, Chickering updated his theory on the psychosocial development of college students by expanding the sample in his study to include an even distribution of non-Caucasian students (Chickering & Reisser, 1993). While Chickering's theory focuses on traditional college age, young adults between the ages of 18-22, his seven vectors of psychosocial development are applicable to all ages. Table 15 illustrates Chickering's seven vectors of psychosocial development visually (Chickering, 1969; Chickering & Reisser, 1993).

Table 3

Chickering's Seven Vectors of Psychosocial Development

(I) Developing Competence	Competence consists of three components: (a) intellectual, physical, and (c) interpersonal competence. Intellectual competence involves acquisition of knowledge in order to increase reasoning and thinking ability. Physical competence is developed through recreational activities such as sports or manual labor. Interpersonal competence entails having the skill to effectively communicate, lead, and work with others.
(II) Managing Emotions	Moving from adolescence to adulthood means learning how to accept, express, and control emotions.
(III) Developing Autonomy	Being able to take care of oneself both emotionally and physically is an important component of becoming an independent self-thinking person.
(IV) Establishing Identity	The age-old question — who am I? — is asked and answered many times during a lifetime. Establishing identity is essential for psychosocial development. An individual needs to establish identity on their terms and not on what others have dictated for them.
(V) Developing Mature	Development of the ability to work with and appreciate individuals of diverse origins.

Interpersonal Relationships	The ability to work with others effectively is key for building healthy relationships with friends and partners.
(VI) Developing Purpose	The individual defines their own career and life goals for themselves.
(VII) Developing Integrity	This level of maturity does not come easily. Once achieved, however, the individual is able to live with those uncertainties that exist in the adult world. Individual progresses from rigid, moralistic thinking to a balanced value system in which the interests of others is taken into consideration. Next, a set of core values is established and affirmed which others acknowledge.

This next section presents two different interpersonal communications theories. First, the communication transmission model was reviewed. Then, the five components of interpersonal communication were explored. These communications theories were explored because it seemed best suited based on the research question, the focus of the study, and the review of literature.

Communication Transmission Model

The process of interpersonal communication is transactional in nature; that is, each individual is communicating concurrently in sending and receiving messages (Bolton, 1986; Fujishin, 2001; Jones & Pfieffer, 1978). The simultaneous sending and receiving of messages has an interdependent impact on both parties engaged in the communication process (Bolton, 1986; Fujishin, 2001; Jones & Pfieffer, 1978; Rogers, 1961; Rogers & Roethlisberger, 1952). In essence, by interacting, both parties in the communications process are affected concurrently by each other's messages. The sender needs to encode the message into a verbal or nonverbal signal the other will understand (Bolton, 1986; Fujishin, 2001; Rogers, 1961).

The selection of words, voice tone, facial expressions, and the rate of speech are established by the sender's relationship with the receiver and other variables such as purpose of the conversation (Fujishin, 2001; Rogers, 1961). The receiver goes through a process called decoding. The purpose of decoding is to make sense out of the message (Bolton, 1986; Fujishin, 2001; Rogers, 1961). The receiver has to interpret the words and nonverbal cues in the message sent by the source communicator. Problems in encoding and decoding the message are a result of channel noise. Channel noise is external or internal factors in the environment that effect the encoding and decoding of a message (Fujishin, 2001; Rogers, 1961). An example of external channel noise is communicating at a construction site. An example of internal channel noise is the receiver holding perceptions about the sender or vice-versa. Figure 11 displays the transactional process of communication models.

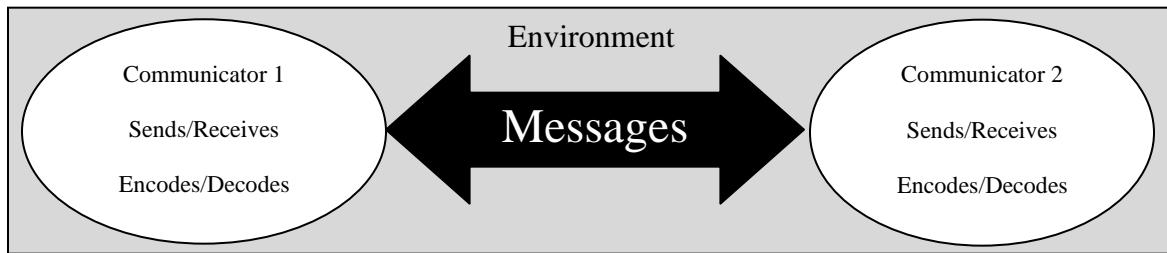


Figure 11. Communication Transmission Model (Fujishin, 2001).

Five Components of Effective Interpersonal Communications

Interpersonal communication is essential to working with teams in the workplace (Bolton, 1986; Luft, 1984; Jones & Pfieffer, 1974). The need to effectively articulate one's thoughts and ideas is critical for the survival of an organization (Bolton, 1986). Being unable to verbally contribute ideas is detrimental to the individual's ability to work in a group (Bolton, 1986; Luft, 1984). Table 16 illustrates Jones' and Pfieffer's five components of effective interpersonal communications (Jones & Pfieffer, 1974).

Table 4

Five Components to Effective Interpersonal Communications

(I) Self-Concept	How the individual sees themselves in various situations. While the contexts of situations are constantly changing, the self-beliefs of the individual are at the root in every act of communication. Individuals with poor self-concepts experience difficulty in conversing with others, expressing feelings, articulating ideas, or accepting constructive criticism.
(II) Listening	Listening is both an intellectual and emotional process that incorporates physical, emotional, and intellectual inputs. Effective listening occurs when the listener discerns and processes the sender's meaning.
(III) Clarity of Expression	Effective communicators are capable of clarifying and articulating thoughts and feelings so that it is clear to both the sender and the listener. Poor communicators leave the listener trying to guess the meaning behind the words.
(IV) Coping with Angry Feelings	By expressing angry feelings constructively rather than destructively, the individual effectively expresses these feelings of anger to the listener and starts the process of building a good relationship.
(V) Self-Disclosure	The individual's ability to talk truthfully about their self is necessary for effective communication. An individual cannot experience true communication with another person unless she/he can engage in self-disclosure. A person's ability to engage in self-revelation is an indicator of a healthy personality.

In summary, theories about psychosocial development and communication are important in analyzing and interpreting the narratives that the users of the SpeechEasy device provided to the researcher. Ultimately, these theories provided a sound basis for understanding the results of this study.

CHAPTER 3

METHODOLOGY

This chapter provides a brief review of the SpeechEasy® device. In addition, this chapter introduces a comprehensive overview of the research methodology used in this study. Moreover, how to obtain reliability using the case study method is described. Finally, this chapter describes the instruments used for the data collection and how the data were gathered.

What is SpeechEasy®?

As presented in Chapter 2, according to both the Janus Development group and the SpeechEasy website, SpeechEasy® is a fluency device that was developed based on the choral effect. The choral effect occurs when a stutterer speaks or sings in unison with others (e.g., a choir, karaoke). When this occurrence of the choral effect takes place, the stuttering is greatly reduced or eliminated (Ward, 2006). The SpeechEasy® device recreates this choral effect for individuals who desire a treatment of stuttering for everyday life. The research reveals that choral speech stimulates immediate normal-sounding speech that is reasonably free from speech disfluencies and is comparable to the speech patterns of individuals with no history of disfluencies (Kalinowski, Saltuklaroglu, Stuart, & Guntupalli, 2007).

Research Approach

The qualitative research method is attractive as a research paradigm because of the intensity of the research that is involved (Stake, 1995). Additionally, researchers are

motivated by an innate desire to explore and inquire even though these methods may not be used by all researchers (i.e., quantitative) (Stake, 2005). Qualitative research is inductive rather than deductive. Moreover, inductive research builds upon abstractions and concepts and does not employ the deductive thinking one would use in testing an existing theory (Merriam, 1998). Qualitative research is undertaken when there is a lack of theory, or the existing theory does not provide sufficient explanation of a phenomenon. In essence, qualitative research seeks emergent theory from observations, interviews, and intuitive knowledge gained from fieldwork (Merriam, 1998). Moreover, the desire to explore and inquire is by nature human. Qualitative researchers are interested in comprehending meaning constructed by individuals that pertains to an observed or perceived phenomenon (Merriam, 1998). Essentially, the researcher is attempting to grasp the participants' viewpoint of the observed phenomenon and not the researcher's point of view. This attempt to grasp the participants' viewpoint and not the researcher's is referred to as the *emic*, or insider's perspective, versus the *etic*, or outsider's perspective. In addition to the first characteristic of qualitative research, Merriam (1998) puts forth four additional characteristics of qualitative research: (a) researcher as an instrument of analysis, (b) fieldwork, (c) inductive research strategies, and (d) rich-thick description.

Since qualitative research focuses on process, meaning, and comprehension, the end product of a qualitative study is rich, thick description (Merriam, 1998). Unlike the use of numbers to represent the product in quantitative research, qualitative research uses words and pictures to convey the observations and interpretation of the phenomenon. Rich, thick description allows for the inclusion of passages from a variety of mediums (e.g., books, records, historical documents, excerpts of videotapes) (Creswell, 2007; Merriam, 1998).

Furthermore, it is the rich, thick description that allows the researcher to enable readers to determine if the description is applicable in other environments, not just the case study research settings (Creswell, 2007).

Merriam (1998) revealed that all forms of qualitative research place the researcher as the primary instrument of data collection and analysis. When the researcher is the primary instrument of data collection, adjustments to this approach are made based on the context and the environment in which the data collection is taking place. In addition, as the primary instrument of data collection, the researcher can observe and make notes regarding the non-verbal communication such as body language of the participant during the interview process.

Qualitative research takes place on a site in the field (Merriam, 1998). This site can be an individual's home or place of employment. In addition, the research site can be an institution. Qualitative researchers become intimately familiar with the observed phenomenon and the meaning behind the phenomenon (Stake, 1995). While documents and artifacts might be used as a part of the data collection, in rare cases these types of data are used as the sole sources of data (Merriam, 1998; Yin, 2003).

Auto-Ethnographic Qualitative Narrative Framework

The auto-ethnographic (i.e., biography, autobiography) narrative methodology offers worthy, discerning, and intimate knowledge about a social phenomenon that is sensitive in nature (Philaretou & Allen, 2006). Thus, it appears aptly suited to this study of how the auto-ethnographic methodology is appropriate for answering the research question. The research question asks the participants to report on their before, during, and after experiences encountered in employment and workplace education using the SpeechEasy® device. An auto-ethnographic narrative reveals indispensable intellectual knowledge on hidden or

sensitive topics. Creswell (2007) defines biography as “a form of narrative research in which the researcher writes and records the experiences of another person’s life” (p. 55).

Additionally, autobiographical materials should be treated as documents between individuals recounting their life experiences and their audience. The audience can be the researcher documenting the account or the readers of the resulting content (Angrosino, 1989).

Furthermore, data found in biographies are beneficial provided they correspond to three key assumptions:

- (I) a story told at a particular historical moment is representative of patterns forming the personality of individuals and the character of their culture;
- (II) individuals (or selected groups of them) typify their entire culture; and
- (III) the researcher is simply a neutral recorder of factual data. (Angrosino, 1989, p.1)

There are different methods of interpreting biographies. Denzin (1989a) presents four different interpretive approaches to biographies.

Overview of Narrative Inquiry

As described by Clandinin and Connelly (2000), a narrative inquiry is organized around a specific phenomenon. This phenomenon is typically referred to as the research question or the problem statement (Clandinin & Connelly, 2000). Additionally, Clandinin and Connolly (2000) cite two questions to guide the researcher in defining the problem within the framework of narrative inquiry as it relates to phenomena and acting in response to the following questions: (a) what is the narrative query about and (b) what is the experience of interest to you as a narrative inquirer? In addition, the narrative researcher will sometimes mistake questions of phenomenon with questions of method (Clandinin &

Connolly, 2000). The phenomenon in narrative research contains three important characteristics (Elliot, 2005). The first characteristic stipulates that there is a chronological sequence to the events being described (Clandinin & Connelly, 2000; Elliot, 2005; Creswell, 2007). Second, narrative research requires these described events to be meaningful. Finally, narrative research states that the events as described to the researcher are contained in a social setting (Elliot, 2005).

Challenges to Narrative Research

Creswell (2007) describes several challenges within narrative research. The first significant challenge is time. The researcher is obligated to collect a large amount of information regarding the participant and needs to have an awareness of the context of the narrative as it pertains to the individual's life. In addition, other issues in narrative research involve the right of ownership of the story such as the circumstances under which the stories are told to others (Clandinin & Connelly, 2000; Pinnegar & Daynes, 2006).

Overview of Case Study Research

This multiple unit case study explores six individuals' use of the SpeechEasy® device using an auto-ethnographic narrative framework. By using this approach, the volunteers will have an equitable opportunity to orally present how each came to the decision to use the SpeechEasy® device and the extent this device has affected the life of this individual.

While there are no universal agreed upon boundaries surrounding case study research, Yin (2003) contends that the objective of case study research is to explore and depict a setting with the intention of developing an understanding of that setting. Yin (2003) defines the five components of case study research design as:

- (1) research questions,
- (2) propositions,
- (3) unit of analysis,
- (4) linking the data to the propositions, and
- (5) criteria for interpreting the data (p. 21).

The present study modeled Yin's (2003) five components of case study research design.

In addition, settings can vary depending on what the researcher is investigating (e.g., workplace, institutional, social, school). Moreover, the type of cases the researcher presents determines the type of case study that will be performed (Stake, 2005). Merriam (1998) and Stake (2005) address these variances with three categories of case study research: (a) Intrinsic Case Study, (b) Instrumental Case Study, and (c) Collective Case Study. For this dissertation study, the researcher selected the collective case study category because these multiple cases can be analyzed by using cross-case analysis (Merriam, 1998; Stake, 2005). Cross-case analysis provided a means of generating themes based on the themes extracted from each of the cases (Merriam, 1998, Stake, 2005, Yin, 2003). In this study, cross-case analysis identified interrelated common themes based on all six cases.

Gaps within the Literature

Although current literature provides insightful groundwork from which to begin, the literature falls short of providing unbiased research and lacks an objective research base pertaining to SpeechEasy®. The first shortcoming revealed in the literature is providing unbiased research. The bulk of the research literature pertaining to the SpeechEasy® device comes from three scholars located at East Carolina University (ECU). In Spring 2001, East

Carolina University granted Janus Development Group licensing and marketing rights for the SpeechEasy® device (East Carolina University, 2007). In addition, the licensing for the digital procession chip was awarded to Micro-DSP Technology Co. Ltd.

Also revealed in the literature is the lack of relevant research literature pertaining to SpeechEasy's use in various settings such as workplace, school, social, and familial (Kalinowski, 2003; Stuart, Kalinowski, Rastatter, Saluklaroglu, & Dayalu, 2004; Stuart, Xia, Jiang, Y., Jiang, T., Kalinowski, & Rastatter, 2003; Zimmerman et al., 1997).

Research Question

As noted by Yin (2003), the research question is pertinent for case study research methodology. Case study research is more suited for answering “how” and “why” questions, even though case study research methodology can answer “what” questions if the study is exploratory. Taking Yin’s case study model into account, to comprehend the overall impact of these individuals’ use of the SpeechEasy® device in various social environments (e.g., work, school, and family), the following research question was examined in this study:

For individuals who begin using the SpeechEasy® device, what are the before, during, and after experiences encountered in employment and workplace education?

Propositions

As dictated by the seminal work on case study research methodology by Yin (2003), study propositions focus attention on aspects of phenomenon that should be explored within the confines of this study:

- (I) Individuals who stutter have an underlying desire to speak fluently.
- (II) An individual who stutters has similar life experiences to other individuals who stutter.

Elements of the Case Study Research Approach

Unit of Analysis

A unit of analysis is an individual or a larger organization (Yin, 2003). Moreover, Yin (2003) notes, “....if an individual person is the case being studied, then the individual is the primary unit of analysis” (p. 22). For this exploratory multiple unit case study, the unit of analysis is the individual as portrayed by the six individuals that are beginning their use of the SpeechEasy® device.

Type of Case

This multiple unit case study falls into the category of an exploratory case study. The use of the narrative research methodology was employed as the primary method of data collection and analysis. In addition, this study is designed to ascertain the individual’s life experience before, during, and after the individual user begins using a SpeechEasy® device. Based on the pilot case study, the research design was adjusted for exploring multiple units that would generate rich description that can be analyzed using cross-case analysis (cf. Merriam, 1998; Stake, 2005).

Site Selection and Recruitment

Through the design and implementation of a multiple unit exploratory case study, the researcher sought to understand how SpeechEasy® has improved the user’s quality of life for individuals who stutter (Yin, 2003). Moreover, this study explores the reasons why these individuals elected to use the SpeechEasy® device.

Sample

For this multiple unit case study, six participants were selected from clients of licensed Speech and Language Pathologists who are approved by the Janus Development

Group, Inc. to distribute and administer the SpeechEasy® device in the State of Alabama and the State of Georgia (SpeechEasy, n.d.). At the time the study was done, one Speech and Language Pathologist was authorized to distribute the SpeechEasy® device in the State of Alabama. Four Speech and Language Pathologists were authorized to distribute the SpeechEasy® device in the State of Georgia. For the purposes of this study, it was important to obtain six participants who had not used the SpeechEasy device prior to this study through the cooperation of two licensed Speech and Language Pathologists. A nonprobability sampling technique called purposive sampling was used to recruit participants because of the small population of individuals who both stutter and use the SpeechEasy® device (Cooper & Schindler, 2006). In addition, the purposive sampling technique was selected because of the nature of the study as well as the physical and financial constraints pertaining to travel (Cooper & Schindler, 2006).

Participants in this study were selected based on the severity of their stuttering by their Speech and Language Pathologists. In this study, the restrictions are individuals who stutter and are beginning their use of the SpeechEasy® device. For this dissertation study, the researcher was able to obtain participants who are different genders (male and female), different ages, and, who were gainfully employed in different types of occupations.

Interview Protocols

The interview protocols were developed based on the autoethnographic review of the researcher, the literature review, and through the narrative analysis of a pilot qualitative study (cf. Horgan, 2008). Appendix A displays the two interview protocols developed by the researcher in order to obtain detailed data regarding the participant's stuttering experience using the SpeechEasy® device.

During the first interview, participants were administered two screening questions. These two questions pertain to the status of their mental and emotional health. The rationale behind asking the participants if they were happy today was related to what Creswell (2007) and Merriam (1998) described as exposing biases and psychological baggage of the individuals. Since a part of this study deals with individuals' feelings and reasons for using the SpeechEasy® device, there was the potential for psychological baggage to be displayed by the participants. Thus, these screening questions were asked of all the participants so as to filter any individual that could potentially be harmed psychologically from participating in this study. The subsequent four open-ended questions in the first interview protocol sought to ascertain the participants' stuttering experiences in various contexts (e.g., social, familial, workplace, educational, religious). Furthermore, the first interview protocol was administered on the first day (Day One) of the participants' use of the SpeechEasy® device.

The second interview protocol was administered to participants 60 days after the first interview. The participants responded to a different set of three open-ended questions pertaining to their experiences using the SpeechEasy® device. These open-ended questions allowed the participants to set the boundaries and control the transitions that occur in the verbalization of their personal narrative. In an effort to keep the identity of the participant confidential, an alias was given to each participant for use in the narratives for both interviews. Other names and institutions identified through the participants' narratives were changed in order to protect these participants' anonymity.

Online Journals

For the online journal submissions, the participants kept a reflective narrative which provided detailed self-reports of their overall experiences with the SpeechEasy® device.

Participants were given prompting questions to guide them during their journaling process. (See Appendix C.) The participants submitted their journals directly to the researcher via email post-10, post-20, post-30, and post-60 day.

Pilot Study

The purpose of the pilot study was to determine if the case study research methodology was feasible for this type of study. The pilot study examined a 23-year-old female graduate student by the pseudo name of Catherine and her experiences with the SpeechEasy® device. Catherine was interviewed by the researcher. She was asked open-ended questions about how her stuttering affected her in various aspects of her life (e.g., family, social, employment, religious). Additionally, she was asked open-ended questions about how the SpeechEasy® device influenced these same various aspects of her life. There were 10 questions in total. The interview was recorded and transcribed by the researcher. Catherine was given a copy of the interview transcript to confirm external validity. The transcript was analyzed and coded. Themes were developed based on reoccurring patterns that emerged as codes (Creswell, 2007; Merriam, 1998).

The four extracted themes were (a) Personal and Family History, (b) Professional Interactions, (c) Social Interactions, and (d) Social Stereotypes. These themes from the interview with the pilot study participant were comparable to the themes extracted from the researcher's own experiences as an individual who stutters (Horgan, 2008). Moreover, there are similarities with regard to themes relating to personal and family history, professional interactions, social interactions, and social stereotypes. The participant's narrative and experiences revealed that the SpeechEasy® device improved the quality of her life (Horgan, 2008). In general, the participant revealed that she found it easier to interact with family

members and co-workers. In addition, the participant started receiving more assignments at work that involved interfacing with the public regularly because of the reduction in her stuttering. Moreover, the participant's detailed narrative about the experiences leading up to using the SpeechEasy® device was reflective of the work on life story documentation as demonstrated by the scholars associated with narrative research (Sparkes, 1996). Catherine's interview was an example of a participant reflecting upon the questions presented to her during an interview and providing detailed description documenting her life story as an individual who stutters. However, one interview cannot constitute a case study because of the lack of rich-thick description that is necessary for all types of qualitative research study methodologies. In addition, case studies in the realm of qualitative research require one to make comparisons based on multiple units of analysis (Creswell, 2007; Merriam, 1998; Yin, 2003). Additionally, the experiences of the participant were influenced by a phenomenon associated with her historical experience as an individual who stutters (Clandinin & Connelly, 2000; Denzin, 1989a, 1989b; Smith & Sparkes, 2008).

Overall, success was apparent with the participant's use of the SpeechEasy® device. For this case, one implication from the participant's experience with the SpeechEasy® device was the apparent increase of professional opportunities. Another implication drawn from the participant's experience with the SpeechEasy® device is the increased access to the world at large. No longer was the participant hidden from public view or restricted by her speech disfluencies. The participant overcame her struggle with stuttering by using the SpeechEasy® device.

Data Collection

In this unit case study research, data were collected through multiple sources. These sources of data are (a) the use of two personal interviews with participants who are using the SpeechEasy® device, and (b) submission of journal entries of their experiences guided by one open-ended question provided by the researcher. The two interviews took place at locations selected by the participants. These journal entries were written monthly for four months and submitted directly to the researcher via email 10, 20, 30, and 60 days after the Day One interview.

Two Interviews

The two interviews occurred at locations determined by the participants. These locations included their home, Speech and Language Pathologist's office, or their place of work. Prior to commencing the first interview, the researcher reviewed with the participants their rights as put forth by The University of Alabama's Institutional Review Board (IRB). In addition, permission was obtained to audio record the interview with the understanding that the interview would be stopped at any time at the request of the interviewee. Both interviews were recorded using an Olympus® digital voice recorder and notes were made by the researcher periodically during the one-hour interview. At certain points during the interviews, participants were asked to expand upon their responses and discuss how a particular event either before or after using the SpeechEasy® device affected their overall quality of life (Creswell, 2007). Upon completion of both interviews, the audio recordings and notes were transcribed by the researcher. These interview transcripts were sent back to the interviewees to verify the accuracy of the content of the interviews. The transcriptions for

both interviews were physically stored in a locked file cabinet whose location is only known to the researcher and electronically in a secured-computer.

Online Journals

The participants kept a reflective online journal that provided detailed self-reports of their overall experiences with the SpeechEasy® device. As previously mentioned, participants were given guiding questions to help them through the journal process. (See Appendix C.) The qualitative data obtained from the online journal entries was saved on the researcher's secure laptop computer. Participants emailed their reflective journals to the researcher on specified days after the first interview. The researcher prepared a transcription of each journal entry from all the participants during the four occurrences (e.g., post-10, post-20, post-30, and post-60), and then labeled and placed on file both electronic and printed versions. The printed copies of these journal entries were kept as backup copies in case of computer failure.

Data Analyses

Qualitative analysis builds theory by exploring the data for relationships within themes and categories of data. Merriam's (1998) levels of analysis provide a method for constructing meaning from the data collected. Typically, the first step is the compilation of data from all sources (e.g., interviews, documents, observations). Secondly, the researcher developed categories and themes using the constant comparative methodology by exploring recurring themes or patterns that appear throughout the data. Within constant comparative methodology, data are being constantly compared. Merriam (1998) suggests two levels of analysis in a multiple unit case study: (a) within-case analysis, and (b) cross-case analysis. During the first stage, *within-case analysis*, each case in itself is analyzed thoroughly

(Merriam, 1998). The researcher used data from all sources in order to gain a clearer sense of the phenomenon in a variety of contexts (e.g., interviews, journal entries). The transcription of each data source was reviewed by the researcher in order to identify any recurring themes or patterns. Upon the completion and analysis of each individual case, the second stage, *cross-case analysis*, was employed (Merriam, 1998). By using cross-case analysis, the researcher attempts to extract themes, build categories, and develop concepts. Moreover, these components of cross-case analysis provide needed data for theory building (Merriam, 1998).

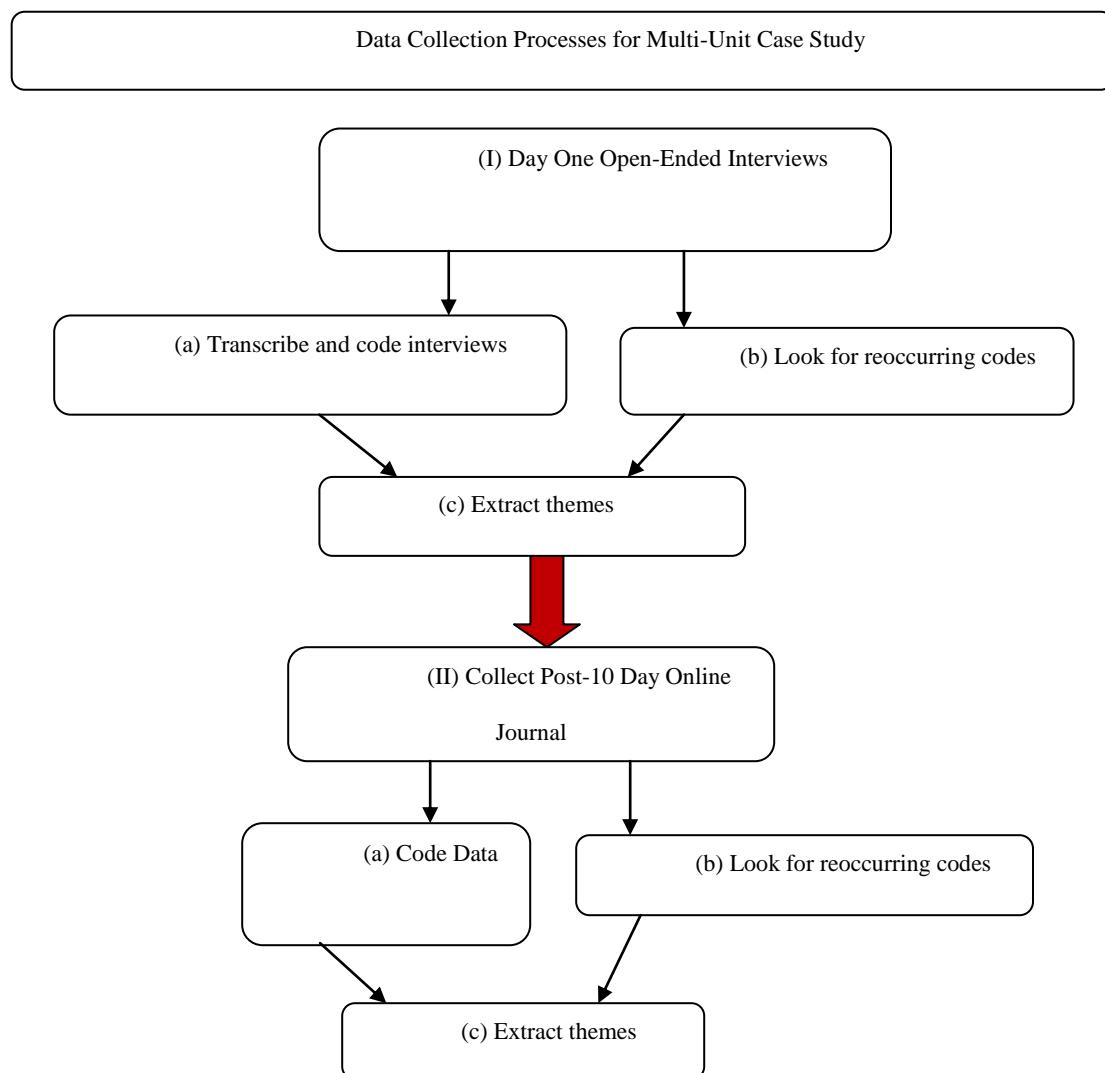
Trustworthiness of the Data

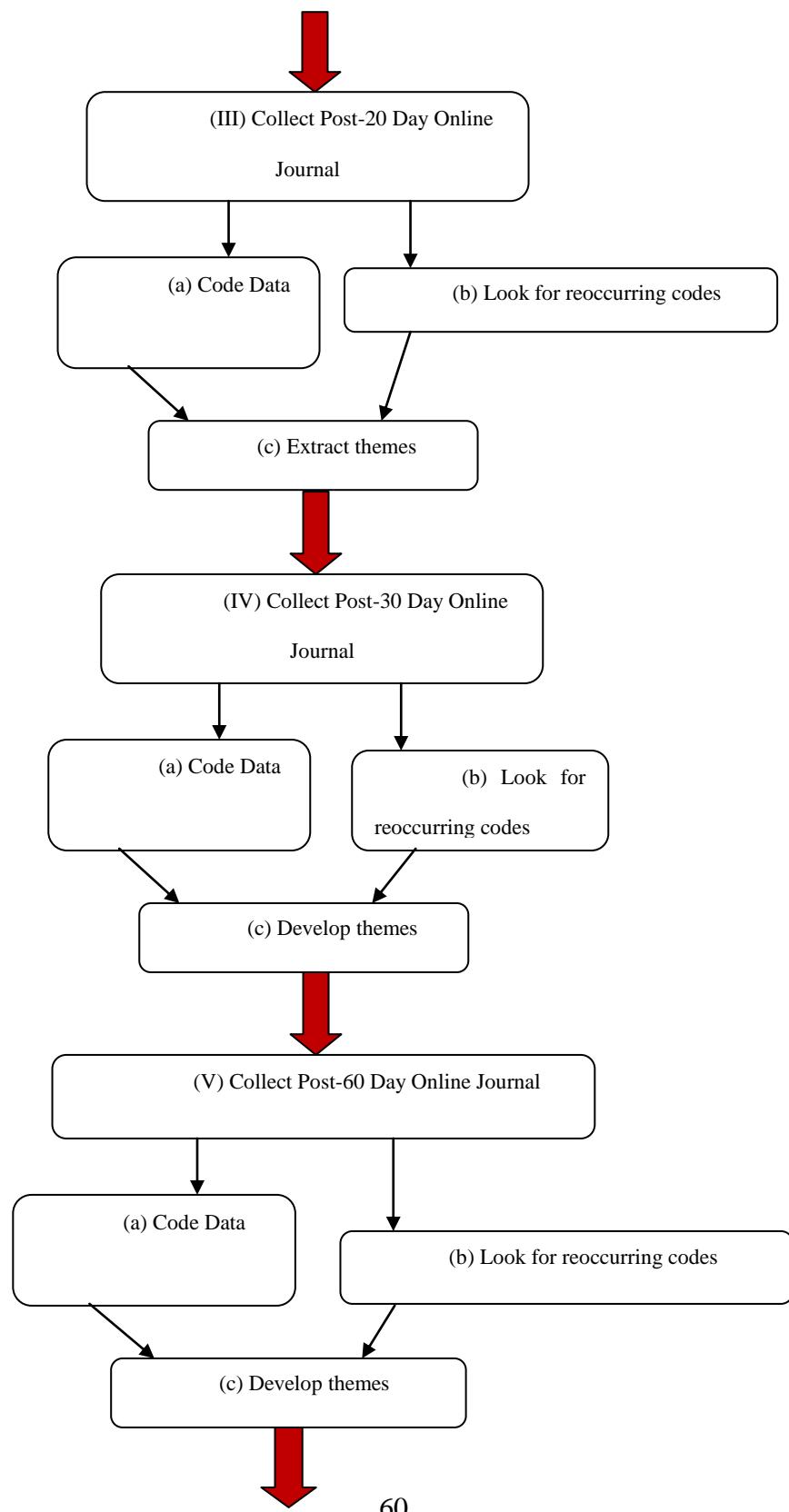
Yin (2003) puts forth the following tests for rating the quality of all research designs: (a) construct validity, (b) internal validity, (c) external validity, and (d) reliability. To obtain construct validity, multiple sources of evidence (e.g., interviews, documents) are used. To obtain internal validity, a specific qualitative data analysis using Merriam's (1998) levels of analysis was employed by the researcher. To obtain external validity, replication of research logic in multiple case studies was employed. In addition, sending interview transcripts to participants to confirm accuracy is another type of external validity (Merriam, 1998; Yin, 2003). Traditionally, reliability pertains to whether or not different researchers can get the same results by using the same procedures or processes (Merriam, 1998; Yin, 2003). So, how does a researcher obtain reliability? Historically, the reliability of a study relates to whether or not the results of a study can be replicated by repeating the methods and techniques within the same research setting (Guba & Lincoln, 1989). Essentially, the researcher needs to be sure all steps used in the research are operational and the research is conducted as if one has someone looking over his or her shoulder (Yin, 2003). As dictated by

Yin (2003), the reliability of a case study is made certain by the research design of the case study.

Creditability of case study research relies upon triangulation of data to reinforce the validity and reliability of case study research (Yin, 2003). Triangulation of data allows for multiple sources of data (e.g., participant interviews, archival records, journals, evaluation instruments) to be integrated to reduce the potential for researcher bias (Patton, 1990). Moreover, triangulation allows multiple sources of data to be evaluated to ascertain agreement with the researcher's analyses and conclusions (Rossman & Wilson, 1985, 1994).

Figure 11 illustrates the research data collection and analysis process used by the researcher.





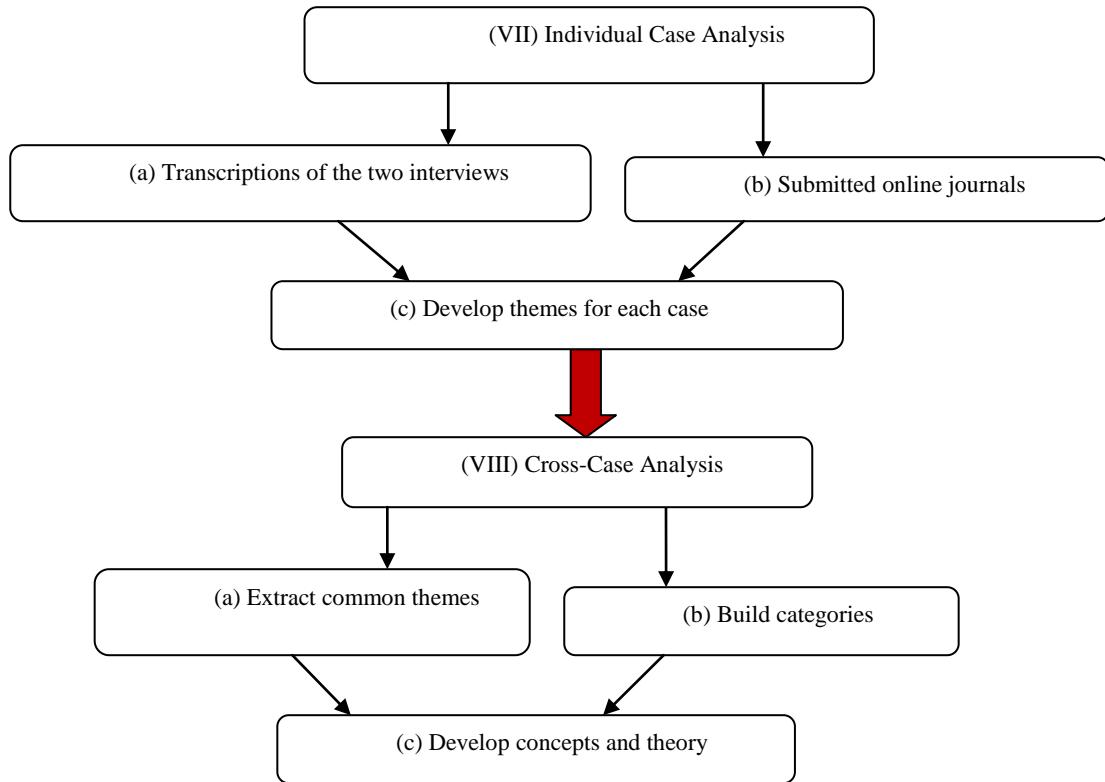


Figure 12. Diagram of data collection and analysis processes.

Appendix B contains the transcriptions and coding for one of the cases as an illustration of how these processes were used in this study.

CHAPTER 4

ANALYSES OF SIX INDIVIDUAL AND ONE CROSS-CASE STUDY

This chapter provides an analysis of each of the six cases. Each of these six cases are organized as follows: (a) background of the participant, (b) analysis of the day-one interview, (c) analysis of each of the four reflective online journals, (d) analysis of the day-60 interview, and (e) a summary of each case. Finally, a cross-case analysis was performed across all the data collection points for the six cases to reveal the overarching themes that frame the six cases pertaining to their experiences using the SpeechEasy® device in the workplace and workplace education.

Case Study #1: Sheila

Background

Sheila, a 32-year-old African-American was employed at a financial services company in Montgomery, Alabama. At the time of the study, Sheila was a graduate student in Management Information Systems at Troy University. Sheila is one of the six individuals who agreed to participate in this study. As reported by Sheila, she has stuttered her entire life.

Day One Interview—Pre-SpeechEasy Device Use

It was 2:00 pm on a Sunday afternoon. I just arrived at Sheila's speech therapist's office. When I talked with Sheila on the phone three days prior she was excited to be participating in this study. Sheila's speech therapist was kind enough to allow us to use her facilities for the interview. Upon being introduced to Sheila, we exchanged pleasantries and

were engaged in small talk. Before I started asking her questions from the interview protocol (See Appendix A.), I thoroughly explained the IRB protocol with Sheila and answered any questions she had about the study. She signed the IRB consent form and we began the interview. The first questions I asked Sheila were the screening questions: (a) How do you feel today, and (b) Would you say you are generally a happy person? The rationale for asking these screening questions was fully explained in Chapter 3 under the subheading, Interview Protocols. Sheila responded by stating overall she is a happy person and that she was feeling good. Throughout the interview, Sheila was responsive to the interview protocol questions. After I completed the interview, I returned to my apartment, transcribed the interview, and I started the first level coding. These first level codes extracted from the transcript of Sheila's interview were as follows: (a) mocking, (b) teasing, (c) stereotypes, (d) treated differently, (e) irritated, (f) fear, (g) rejection, and (h) hope. (See Appendix B.) A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process themes were extracted. Table 5 illustrates these themes

Table 5

Extracted Themes from Day One Interview with Sheila—Pre-SpeechEasy Device Use

First Level Coding	Categories	Theme	Description
(a) mocking,	(a) Rejection	(I) Rejection from Co-Workers and Customers	Sheila described throughout the interview the continuous negatives she received at work because of her stuttering. Examples of negative attention include: (a) customers and
(b) teasing,	(b) Fear of Stuttering		
(c) stereotypes,			

(d) treated differently,	(c) Frustrated with Stuttering	co-workers that are impatient with Sheila when she is speaking and (b) co-workers who finish her sentences
(e) irritated,		for her.
		(II) Fear and
(f) fear,	(d) Hope to be Recognized as a Person	Frustration Sheila described feelings of frustrations about her stuttering. How she feels her stuttering prevents her from moving forward in her career.
(g) rejection, and		Examples of frustration include: (a) fear of being rejected by her co-workers and (b) rejected from professional opportunities because of her stuttering.
(h) hope		
		(III) Hope for Future
	Recognition	Sheila described her feelings of hope. Sheila hoped the SpeechEasy® device will help her reduce her stuttering. She tearfully described for me how she wants to be able to hold a normal conversation with her co-workers and family. How she wants to be recognized for her contributions at work and not just being the ‘the girl who stutters’

During the first theme, rejection by co-workers and customers because of stuttering, Sheila talked about how other people, specifically her co-workers, finish her sentences.

...When people finish my sentences it makes me feel small and insignificant.

They actually think they are helping and being accepting of you when in reality they are harming you.

In the second theme, fear and frustration about her stuttering, Sheila expressed her fears and frustrations about her stuttering. To quote Sheila,

Someone will look at you think you are just mental or some are more patient (with my stuttering). It all depends on the person. The average person does not know anything about stuttering. Basically, it is like if you were to see a person who is handicap on the street they would feel sympathy towards them. But it's like a person with a speech problem look at you differently. Some people tell me I stutter to get attention.....It's like you do not talk more because you are afraid your speech being noticed. Basically it's like you try to cover it up by using hand gestures and simple words. You keep conversation short and to the point.

During the third theme, hope for future recognition, Sheila described how she hopes using the SpeechEasy® device will help her to be recognized for her contributions at work. In addition, Sheila talked about how she hopes not to have a normal conversation with very limited stuttering. To quote Sheila,

My expectations and goals are to able be more outgoing and not hide my speech problem. Just to be able to hold a normal conversation with a person. I try to be two different people. You live two different lives. In the business world, you don't want to go into a meeting and stutter the whole time. I am hoping that it pays off hearing myself speak (--auditory feedback)... People think because of the way I talk that I am stupid and that is not true... I did some research on it and studies show that

SpeechEasy doesn't cure stuttering but it helps you pace your rate of speech better and it helps you speak better.

Researcher Notes. I survived doing the first interview. Thank G-D. I am happy to have met Sheila. I could tell she was comfortable with me during the interview process and I was comfortable communicating with her. Yes, we both stuttered but I tried not to talk too much. I wanted Sheila to do a lot of the talking so I could facilitate the conversation. My interactions with Sheila were engaging throughout the interview. She provided great detail when I prompted her to do so. She and I were both relaxed and comfortable speaking to each other. The atmosphere of the interview was quite calming. I felt like knew me all my life. Perhaps she felt the same way. I wonder if this comfort was derived from the fact that we both stutter and perhaps there was less anxiety about being negatively judged. She is truly someone I admire for her courage to work in a business environment that requires constant verbal communication and that is fast paced. I am not so sure I would be that courageous to work in a similar environment. She is a role model of how someone who stutters as she has the conviction to work hard and succeed in spite of stuttering.

I hope the other interviews go this well. I am meeting the other five participants next Friday and Saturday. I am going to be busy transcribing their interviews. Speaking of transcribing, I am going to have to transcribe this interview with precision and accuracy. The next three hours are going to be fun. I am biting off a lot this week. I am moving, doing interviews, and starting a new job. I do keep a busy schedule. Enough of this journaling; time to transcribe Sheila's interview.

Online Journals—Experiences with the SpeechEasy Device

As stated in the methodology, all participants submitted a reflective journal of their experiences using the SpeechEasy® on specified days. Each of Sheila's journals were different in length. For the post-10 journal submission, Sheila had about a paragraph for her response to the guiding questions. (See Appendix C). Sheila stated in this journal submission that she was happy with the SpeechEasy® device. "So far I am happy with the SpeechEasy device. I have noticed a reduction a in my stuttering." She was noticing a positive difference in stuttering when speaking on the phone. "I was talking on the phone with a customer early this morning and it felt great to be able to talk on the phone without worrying whether or not my stuttering will get in the way."

The first level codes I extracted from the post-10 journal submission were (a) happy with improvement in fluency, (b) positive difference, and (c) positive experiences speaking on the phone. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: reduced interpersonal disfluencies with peers. Up to this point, Sheila's overall experience with SpeechEasy® device has been positive. She did not indicate anything negative in this journal submission.

Researcher Notes. When I was reading post-10 journal submission I was a little a disappointed because of the lack of content in her submission. I hope Sheila's submission as well as the five other participants submissions are not all like this. Otherwise, coding and extracting overall themes is going to be nearly impossible. Fortunately, I remember Dr. Dantzler's qualitative methods class and about how from even the smallest amount of data, a good qualitative researcher can extract codes from just a sentence or two. I will have to see what the other five participants have to say in their post-10 journal submissions. Sometimes I

think I am in over my head. I now understand why there is a 50% attrition rate with doctoral candidates. This is insane! Again, we shall see what happens.

In her post-20 journal submission, Sheila extensively revealed to me that her co-workers and supervisors noticed a positive difference in her stuttering. As noted by Sheila, a different colleague compliments her at work about the noticeable improvement in her stuttering.

It has been 20 days and a lot of my colleagues are giving me lots of compliments about my reduced stuttering. It is like every day I have received a compliment about the improvement with my stuttering from my co-workers.

As described by Sheila, her boss complimented her about the noticed improvement in stuttering. Sheila's boss indicated that he was receiving complimentary reviews from Sheila's customers stating that it is easier to understand Sheila on the phone.

Just yesterday, my supervisor complimented me on how much my stuttering has improved. I pointed out to my supervisor the SpeechEasy® device in my ear. Also, my boss took the time to tell me that she has received several compliments from my assigned customers on how much easier it is to communicate with me on the phone and in-person.

The first level codes I extracted from the post-20 journal submission were (a) positive compliments from co-workers, (b) positive compliments from customers, and (c) positive compliments from her boss. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: reduced interpersonal disfluencies at work.

Researcher Notes. After reading Sheila's post-20 journal submission, I am happy to see her success with the SpeechEasy® device. She deserves to be treated well at work because Sheila is a human being. I can only imagine the feelings she has experienced from the positive reinforcement. To be able to speak like everybody else is the goal of all people who stutter. Just ask somebody who stutters. Her experiences almost make me want to go out and buy the SpeechEasy® device. Often, when I tell friends, family, and people from Church about my study I get asked all the time why am I not using the SpeechEasy® device? As I previously mentioned in my autoethnographic review, the cost of the device is out of my price range, at this point in time. Moreover, I want to see if the information generated from this study reveals effective use of the SpeechEasy® device before I go out and spend close to \$5,000 dollars. As a researcher, if I were to use the SpeechEasy® device while engaged in this study, my own bias would create a conflict of interest. This conflict of interest would damage the integrity and credibility of this study. As I have made clear in my autoethnographic review, I have never used any assistive technology device for my stuttering.

In her post-30 journal submission, Sheila was still using the SpeechEasy® device. Sheila indicated her success using the SpeechEasy® device by stating "this was the best \$4,700. I have ever spent. It was worth every penny." Sheila noted in this journal submission that she has taken more of a leading role in group projects and at staff meetings.

Since I started using the SpeechEasy device a month ago, my manager has directed me to take the lead at department briefings. My supervisor said she feels more comfortable with me giving briefings at department meetings.

Sheila described for me how much easier it is for her to give presentations. She recounted for me how when she gave a recent presentation for the vice-president of her company, she was not afraid of stuttering.

Recently, the VP of Information Systems asked me to give a company-wide presentation on a new ordering system the company was using in the customer service department. This was the first time I have ever given a company-wide presentation. I began my presentation and I was shocked! I did not stutter at any point in time during the presentation.

As noted by Sheila, she gave a pitch-perfect presentation with no stuttering. After giving the presentation, Sheila was approached by her co-worker, Michelle, who complimented Sheila on the delivery of her presentation. According to Sheila, Michelle used to roll her eyes anytime Sheila spoke to her and would finish Sheila's sentences.

I was shocked because I don't like Michelle because she was always disrespectful to me all the time and was impatient with me. I could tell she did not think very highly of me because I would notice Michelle rolling her eyes.

The first level codes I extracted from the post-30 journal submission were (a) leadership roles, (b) easier to give presentations, (c) increased participation at staff meetings, (d) praise and feedback, and (e) respect for an individual. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following themes were extracted: (a) increased self-confidence in public speaking and (b) increased presence in assuming leadership roles.

Researcher Notes. Sheila appears to be doing really well with the SpeechEasy® device. When I read her post-30 journal submission, I was nearly brought to tears. The

individual respect that occurred when Michelle complimented Sheila on the delivery of her presentation was heartwarming for me. I am sure the feeling of a wrong being righted is uplifting. I am overjoyed for Sheila's success with the SpeechEasy® device. I will admit, though, that I am hoping at least one of the five remaining participants is dissatisfied with the SpeechEasy® device. Otherwise, it may appear to my dissertation committee that I inserted my own biases with this case and the remaining five cases in this study.

In her post-60 journal submission, Sheila was brief. Sheila was still using the SpeechEasy® device. She indicated to me that she plans to continue using the SpeechEasy® until the device falls apart. Then she will buy another SpeechEasy® device to replace it. Sheila concluded her journal submission by stating that she no longer feels like an outsider at work. Everybody treats her with equality and dignity.

For the first time I feel like I am normal and that I am treated with dignity. I do not get strange looks any more when I speak. More of my co-workers have asked me for my opinion on work matters. I am not brushed off anymore. I am getting more assignments that involve speaking. I believe my co-workers see me as an equal.

The first level codes I extracted from the post-60 journal submission were (a) positive experiences using the SpeechEasy® device at work, (b) individual equality in the workplace, and (c) self-respect as an individual contributing to the organization. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following themes were extracted: (a) success using the SpeechEasy® device at work and (b) equality in the workplace.

Researcher Notes. When I was reading Sheila's post-60 submission, I felt happy for her. I am glad she was successful with the SpeechEasy® device. I need to remember that just

because Sheila was successful does not mean the other five participants will have a similar positive experience. This is important for me to keep in the back of my head because deep down I want all the participants to be successful with the SpeechEasy® device. As a researcher, I need to maintain my objectivity and do my best to remain unbiased in this study.

Day 60 Interview—Experiences with the SpeechEasy Device

It was 8:00 am on a Saturday morning. I was driving out to Camp Hill, Alabama, where Sheila lives. Sheila emailed me the day before to tell me to call her about the post-60 interview. We were supposed to meet in Birmingham, Alabama, at her speech therapist's office. As luck would have it, Sheila's transmission died on her that Friday afternoon. She had purchased another car but had to wait until Monday to pick it up. I was unable to come out during the week so Sheila suggested I meet her at her home on Saturday morning. I arrived at Sheila's home at 9:30 am. I was lost along the way and ended up being a half-hour late for our appointment. I was able to meet her family. The members of Sheila's family and I exchanged small talk. Sheila's mother thought I was a handsome young man and asked if I was married? On that note, Sheila noticing I was turning beat red, took me out onto the sun porch and we completed the final interview in beautiful 70-degree weather. As we began the interview, Sheila talked about how she was offered and accepted a promotion for vice-president in her company. One of the requirements of this promotion is to provide weekly verbal progress reports of the Information System division to the board of trustees of her company. After I completed the interview, I returned to my apartment, transcribed the interview, and I started the first level coding. These first level codes extracted from the transcript of Sheila's interview were as follows: (a) positive changes, (b) speaking normally, (c) beyond expectations, (d) equality, and (e) promotion opportunity. A second level coding

process took place in which these first level codes were grouped together and categorized.

(See Appendix B.) From this second level coding process, the following themes were extracted: (a) internal personal satisfaction and (b) external job satisfaction. Table 6 illustrates these theme.

Table 6

Extracted Themes from Day 60 Interview with Sheila—Experiences with the SpeechEasy Device

First Level Coding	Categories	Theme	Description
(a) positive changes,	(a) Internal gratification with using the SpeechEasy® device	(I) Internal Personal Satisfaction	Sheila described throughout the interview a sense of internal personal satisfaction
(b) speaking normally,	(b) External gratification with using the SpeechEasy® device		because of the near elimination of her stuttering made possible by the SpeechEasy® device.
(c) beyond expectations,			
(d) equality, and	(c) Satisfied with increased professional opportunities		
(e) promotion opportunity		(II) External Job Satisfaction	In last two months, she has received so much positive feedback from colleagues and superiors. She was offered a promotion to a junior vice president position where she is required to give weekly articulate progress reports of the Information System division to the board of trustees of her company.

In the first theme, internal personal job satisfaction, Sheila described how she was personally satisfied with the reduction in stuttering brought about from using the SpeechEasy® device. She reported how using the SpeechEasy® device was internally rewarding for her. To quote Sheila,

... It really has. Because I feel so much more comfortable speaking and not worrying about whether I am going to stutter. Beyond anything I expected when I first investigated the SpeechEasy® device.....I like being able to talk like everybody else. The ability to speak normal is something I am not taking for granted. I feel equal to everybody else....Nobody finishes my sentences anymore. My co-workers appear to be more interested in what I have to contribute at meetings or training sessions...

During the second theme, external job satisfaction, Sheila reported how using the SpeechEasy® device was well-received by her co-workers and manager. The reduction in her stuttering derived from using the SpeechEasy® device provided Sheila with promotional opportunities. To quote Sheila,

I was in a training class on group dynamics and the facilitator handed out hats with signs on them. I couldn't look at my own hat but I could see everybody else's hat. Everybody was asking me for my opinion and agreeing with me in this role playing exercise. I was given verbal direction to everybody else in the role playing exercise... ...I wasn't worried about whether I was going to stutter. In fact, it never crossed my mind....After the exercise ended we all took off our hats and I saw why everybody was agreeing with me. My hat said I was the boss. In fact, after the training session was over my supervisor and the HR director stopped me in the hall and asked me to come to their office for a minute. I was offered and accepted a

promotion to Assistant VP of Management Information Systems....I was told that they were impressed with the way I was able to assume a leadership role without thinking about. Also, they said I was an effective communicator and that my improved speech was a big part of that decision.

Summary of Case #1: Sheila

Throughout this case, all data collected had extracted themes based on first and second level coding analysis (cf. Merriam, 1998). It was evident in this case analysis that Sheila's experience using the SpeechEasy® device was successful. The equality she derived from using the SpeechEasy® device brought Sheila leadership opportunities. Throughout this case, Sheila experienced several positive changes as a result of her using the SpeechEasy® device. She was given positive reviews about her improved job performance. The success that the SpeechEasy® device afforded her brought about a measure of equality. Throughout the case, there was an overarching theme of equality. The internal personal satisfaction and the external job satisfaction are indicators that the SpeechEasy® device provided Sheila with an opportunity for equality at the workplace. Sheila's promotion was a clear indicator that the reduction in her stuttering derived from using the SpeechEasy® device was beneficial for her professionally. It should be noted, though, that in spite of the researcher's best effort to obtain rich data on Sheila's experiences using the SpeechEasy® device in workplace education settings by employing probing questions, limited data was obtained. The quote related to the second extracted theme, external job satisfaction, from the Day-60 interview was the only workplace education related data obtained in Sheila's case.

Case Study #2: Michael

Background

Michael, a 21-year-old Caucasian male, was employed by his family's construction company in Atlanta, Georgia. At the time of the study, Michael was finishing his bachelor's degree in Building Construction as a part-time student at Georgia Tech. Michael is one of the six individuals who agreed to participate in this study. As reported by Michael, he has stuttered his entire life.

Day One Interview—Pre-SpeechEasy Device Use

It was 1:00 pm on a Monday afternoon. I pulled into the job site in downtown Atlanta near Turner Field. Michael and his father were overseeing a construction project. From what I gathered it looked like some type of addition to a building. I was concerned that the noise from the construction would interfere with the audio recording of the interview. When I expressed this concern to Michael, he told me not to worry because his office (i.e., the job site trailer) was soundproof. To my surprise, he was not kidding about his office being soundproof. You could not hear any of the noise from the construction. Before I started asking him questions from the interview protocol (See Appendix A.), I thoroughly explained the IRB protocol to Michael and answered any questions he had about the study. He signed the IRB consent form and we began the interview. As I did with Sheila, the first questions I asked were the screening questions: (a) How do you feel today, and (b) Would you say you are generally a happy person? Michael responded, "Yeah I'm happy, I have a great job, a great girlfriend, and I am graduating from Georgia Tech this spring." The rationale for asking these screening questions was fully explained in Chapter 3 under the subheading, Interview Protocols. Throughout the interview, Michael was responsive to the interview protocol questions. After I completed the interview, I returned to my apartment, transcribed the interview, and I started the first level coding. These first level codes extracted from the

transcript of Michael's interview were as follows: (a) teasing, (b) irritated, (c) resentment, (d) hate, (e) treated differently, and (f) desire for speaking normal. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process themes were extracted. Table 7 illustrates these themes.

Table 7

Extracted Themes from Day One Interview with Michael—Pre-SpeechEasy Device Use

First Level Codes	Categories	Theme	Description
(a) teasing,	(a) Self Hate About Stuttering	(I) Rejection by Co-Workers because of Stuttering	Michael described throughout the interview the continuous teasing he gets from his dad's employees on the job site.
(b) irritated,	(b) Self Resentment About Stuttering		
(c) resentment,	(c) Singled Out by Co-Workers		
(d) hate,		(II) Inner Resentment about Stuttering	Michael described feelings of resentment about his stuttering. He talked about how if he didn't stutter life would be better for him.
(e) treated differently, and			
(f) desire for speaking normal			He does not want to feel like he is inferior to others.

In the first theme, rejection by co-workers because of stuttering, Michael described a story of how his co-workers treat him at the job site. In particular, he discussed the constant teasing and mocking that he is subjected to on a daily basis.

This is something that I have deal with every day. It comes with the job. Most of these guys that work for my father have never went to college and they think I stutter to get attention. A while back, I had one guy working for my father call me a (expletive) retard. My father fired him when I told him about the incident.

In the second theme, inner resentment about stuttering, Michael revealed his feelings of resentment about his stuttering. To quote Michael,

If I didn't stutter, my life would be better...No matter how hard I work or the fact that I will have a bachelor's degree soon, I feel like a second class citizen because of my stuttering. I hate my stuttering because it gets in the way of everything.

Researcher Notes. Michael is a character. He really stands out from the rest of the construction crew on the job site. He was able to make me laugh because of his sarcastic sense of humor. The other members of the construction crew appeared to be distant and uninterested in why a man wearing a shirt and tie was at a job site. He was laid back and easy to interview. During the interview, it felt as if I was interviewing one of my siblings. Overall, he was likeable individual. He reminds of the guys I used to see working on the docks when we had to cross a picket-line so my father could get to his truck at the warehouse. He fits the stereotype of the brash blue-collar construction worker. His story sounds very familiar to me. As noted in my autoethnographic review, I grew up around construction and factory workers so I am all too familiar with the teasing and misunderstandings about his stuttering that he has endured. He is so crass in his language. I think if I ever ended up in construction I would sound exactly like him. It was as if we had known each other for 20 years. This made the interview a whole lot easier (and fun) to conduct. I could tell Michael was comfortable with me during the interview process and I was comfortable communicating with him. As with

Sheila's case, we both stuttered but I tried not to talk too much. In fact, during the interview, I barely had to say anything to prompt him. He was a qualitative researcher's dream participant. He kept talking and gave so much in-depth details. When he started to repeat himself, I moved us on to the next question on the interview protocol. (See Appendix A.) The interview ended when Michael's father came in and told him he was needed him on the job site. It had something to do with the construction permits. I thanked Michael for his time and that I looked forward to getting his reflective online journals. Now it was off to meet with Maria in Mableton, Georgia to conduct her day-one interview. Between Michael's and Maria's interviews, I am going to be spending the upcoming weekend transcribing all these data. In addition, as I noted in my day-one reflexivity for Sheila, I am moving on Wednesday. It is going to be a busy weekend.

Online Journals—Experiences with the SpeechEasy Device

As stated in the methodology, all participants submitted a reflective journal of their experiences using the SpeechEasy® on specified days. Unlike Sheila's reflective journal entries, Michael's were full of details and about two paragraphs in length. For his post-10 day journal submission, Michael stated that he was happy with the SpeechEasy® device. "I have begun to notice how much easier it is to talk with the guys every morning before we get the day started." He continued to tell me about a phone conversation he was having with the architect for the job site. "I called the architect's office and his secretary did not recognize my voice. She thought I was pulling her leg." He concluded his journal submission as follows:

So far the SpeechEasy® is working great for me. My father mentioned yesterday that he has noticed that I am stuttering less. Hell, even one of the old timers

who has worked for my Dad since the dawn of time said something to me this morning about how I am speaking better and it is easier to understand me.

The first level codes I extracted from the post-10 journal submission were (a) encouragement, (b) positive feedback from father (c) disbelief in reduction of stuttering, and (d) improved workplace communication with co-workers. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: clear verbal expression of ideas. As mentioned in the quotes, Michael has received positive feedback and encouraging comments, or reinforcement, from different people. He did not indicate anything negative in this journal submission.

Researcher Notes. When I was reading Michael's post-10 journal submission I was impressed with the amount of content in his submission. In a way, I was relieved with Michael's first journal submission. Coding this journal submission was easy compared to Sheila's first journal submission. I am looking forward to seeing what the rest of his journal submissions are like compared to this one, though I will admit, the content was a bit repetitive. Nonetheless, the details he provided allowed me to extract solid first level codes from his journal submission. Still, I think I am in over my head. At this point, I think it is a game of "wait and see." It seems like all I do is work, interview, transcribe, analyze, go to Mass on Sundays, and sleep. It is true what many books say about being a dissertation writer; it is a lonely experience that only those who have gone through can understand what it feels like.

In his post-20 journal submission, Michael told me a story about how everybody at the job site has noticed a reduction in his stuttering.

It was lunch time and everybody was sitting around talking. Freddie, our newest laborer, said that he was going to have to find something new to make fun of me for because he has not noticed my stuttering. Yes, it was a backhanded compliment but still a compliment.

Later in Michael's journal submission, he tells about how his father said to him, "I am glad I was able to lend you money to buy your SpeechEasy® device." Michael goes on to say, "My Dad and I really feel like SpeechEasy® was a good investment for my future." Michael concludes his journal entry by writing about how much work has been easier for him.

I can communicate better with vendors and sub-contractors. Sub-contractors do not talk down to me anymore. I do not hear them snickering behind my back anymore. They listen to what I have to say. Few guys that work for my father on the job site make fun of my stuttering. Most of the guys on the job site do not talk down to me anymore. I do not hear them laughing at me behind my back. One of the electricians my father subcontracts to regularly used to refer to me as, "Daddy's little retard." Apparently, several guys from my father's crew overheard this electrician saying this to another sub-contractor and scolded him citing that "Michael is the number two on the job site and he knows what he is doing. If his father trusts his ability to get the job done then we should do the same."

The first level codes I extracted from the post-20 journal submission were (a) positive compliments from co-workers, (b) earned respect of colleagues, and (c) investment in the future. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme

was extracted: reduced stuttering creates professional opportunities. These professional opportunities included more hands-on experience dealing with the vendors and sub-contractors on a day-to-day basis.

Researcher Notes. After reading Michael's post-20 journal submission, I am happy to see he is being treated with respect. As I noted in my autoethnography, having grown up around contractors I know they can be rough and at times mean spirited to someone who is different. In any case, I am glad he is having success with the SpeechEasy® device. Often I have wondered if I elected to use the SpeechEasy® device, would my experiences be similar to Michael's? I ask this of myself because he and I appear to come from similar socio-economic backgrounds. These common social-economic backgrounds are that we come from working-class families. As I previously mentioned, similar to Michael, the majority of my relatives work in blue-collar professions such as electricians, plumbers, carpenters, and assembly-line work in factories. Was the reason why Michael and I have connected so well related to the fact that we both stuttered and we have similar economic backgrounds? I am not sure as these are questions I will ponder about for months (or perhaps years) to come. For me, Michael's experience up to this point has expanded my personal interest in the SpeechEasy® device even further than previously.

In his post-30 journal submission, Michael was still using the SpeechEasy® device. Michael revealed that his father has let him take on a leading role during the morning meetings with all the staff.

Before, my father was always worried that his employees would disregard anything I said during the morning meetings and I was only allowed to facilitate them if he was there. Now, my Dad is more comfortable with me

running the morning meetings by myself. For the first time, my Dad has a chance to do more estimates in morning.

Michael goes on to tell about how potential customers have been more receptive of him than in the past. “My stuttering does not get in the way anymore.” He continues to talk about how his stuttering does not get in the way in his journal submission:

When I am out on Saturday mornings doing estimates, customers have been more than willing to agree to the estimate I provided for them. Before they would hesitate and tell me don’t call us we’ll call you. Now I am drumming up more business for my father than I ever had before. This you can well imagine makes my Dad very happy.

It appears that Michael finds it easier to interact with customers and with his co-workers. In addition, Michael is obviously having success with using the SpeechEasy® device.

The first level codes I extracted from the post-30 journal submission were (a) leadership roles, (b) earned respect from co-workers, and (c) salesman roles. Second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: increased self confidence in verbally communicating with colleagues and customers.

Researcher Notes. Michael appears to be doing really well with the SpeechEasy® device. When I read his post-30 journal submission, I was pleased to see how proud he was with his progress using the SpeechEasy® device. It was evident to me that Michael was happy to make his father proud and to be able to increase the prosperity for his family’s construction business. Michael is certainly feeling more useful to his father, is proud of what

he has been able to accomplish, and has a new level of self-confidence. As I previously alluded to in the post-20 reflectivity of the researcher, I found I was better able to relate to Michael's work culture. Interacting with skilled-laborers is different from the collegial environment that exists in professional and academic settings. One is required to have "thick skin" in that type of work culture. In the skilled labor and military workplace culture, there is less emphasis on tact. Instead, the emphasis is put on getting the job done as quickly as possible. Obviously, Michael has developed that required "thick skin"; otherwise, he would not be working in the construction industry. On a personal note, I can relate to Michael's workplace culture because I work for the U.S. Army. Being around soldiers, both active and retired, is very similar to being on a construction job site in that it is common for these types of environments to hear vulgar language used throughout the day. It is time to wrap up this reflection and work on Maria's post-30 day journal submission.

In his post-60 journal submission, Michael was brief. Michael was still using the SpeechEasy® device. He indicated in his journal submission that he expects to continue using the SpeechEasy® device.

This little machine is great! I am getting ready to go on job interviews with large construction firms in Atlanta and New York. Now that I employ the SpeechEasy® device, I am not dreading the interviews. Now that I gained the respect of my father's employees because of my improved speech, I know I can obtain a Project Manager's job with a multi-million dollar construction firm.

The first level codes I extracted from the post-60 journal submission were (a) success using the SpeechEasy® device in group settings at work and (b) increased confidence in speaking in group settings at work. A second level coding process took place in which these

first level codes were grouped together and categorized. From this second level coding process the following theme is extracted: increased confidence in speaking derived from using the SpeechEasy® device.

Researcher Notes. When I was reading Michael's post-60 submission, I felt like I was talking to someone who had a weight lifted off his shoulder. This "weight" being lifted was his reported increased confidence in communicating in a group environment. It was apparent in his journal entry that the stress and fear of stuttering was alleviated because he was using the SpeechEasy® device. I am glad he was successful with the SpeechEasy® device. So far, two out of the six participants were successful in using the SpeechEasy® device. I would really like to have someone who has a bad experience with the SpeechEasy® device because this would reinforce my objectivity as a researcher. I am continuing my work by doing the post-60 day analysis for Maria's journal submission.

Day 60 Interview—Experiences with the SpeechEasy Device

It was 12:00 pm on a Sunday afternoon. I was driving out to Atlanta to meet with Michael. The drive there was not as long as before because I was coming from Mass in Mableton, Georgia, which is just outside of Atlanta. For simplicity's sake, we agreed to meet at the job site near Turner Field. It was quiet at the job site because it was Sunday and nobody was there except for Michael and me. After I completed the interview, I returned to my apartment, transcribed the interview, and started the first level coding. These first level codes extracted from the transcript of Michael's interview were as follows: (a) speaking normally, (b) treated with respect, (c) improved facilitation at safety training, and (d) improved verbal communication. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding

process, the following themes were extracted: (a) improved communication at the workplace and (b) earned respect from colleagues. Table 8 illustrates these themes.

Table 8

Extracted Themes from Day 60 Interview with Michael—Experiences with the SpeechEasy Device

First Level Codes	Categories	Theme	Description
(a) speaking normally, at Work	(a) Communication Communication	(I) Improved Communication	Michael described throughout the interview different scenarios in which his improved verbal communication skills were helping him get ahead. He talked about how he is better able to facilitate safety meetings at the job site. In addition, Michael talked about how his communicating with sub-contractors has improved.
(b) treated with respect, Workplace	at the Workplace		
(c) improved facilitation at safety training, and			
(d) improved verbal communication			
		(II) Earned Respect from Colleagues	Also, he talked in great detail about the respect he has earned from everybody at the job site. No longer does anyone at the job site make fun of his stuttering. His co-workers listen to him and value his opinion as a professional and value his contributions at the job site.

In the first theme, improved communication at the workplace, Michael described various scenarios in which his improved fluency in speech was helping him move ahead in

his career. He reported an increased confidence in leading/facilitating safety meetings at the job site. To quote Michael,

Oh yeah! My day-to-day duties at the job site are easier to perform. This was especially true when my Dad let me start leading the safety meetings. In one safety meeting, I was able to facilitate a discussion on new Occupation, Safety, and Health Administration (OSHA) regulations related to construction industry employees. Another safety meeting, I was leading a demonstration on the safe operation and performing a maintenance check on four-wheel drive loaders for our apprentices. My Dad trusted that I could effectively communicate to the apprentices how to safely operate and maintain a four-wheel drive loader....The sub-contractors do not brush me off anymore. The sub-contractors do not roll their eyes at me anymore when I speak. The sub-contractors listen to me like they listen to my father.

In the second theme, earned respect from colleagues, Michael provided a description about how he has earned the respect of his colleagues from everybody at the job site. Michael reported that since choosing to use the SpeechEasy® device, his stuttering was almost nonexistent. To quote Michael,

The guys at the job site have displayed more respect for me as a competent construction worker rather than as the son of the owner who stutters and is in-charge because his father owns the business. I think the crew perceives me as a competent equal based on the way I am better capable of expressing my thoughts and ideas. I am pleased with how the SpeechEasy® device has helped me earn the respect of my colleagues.

Summary of Case #2: Michael

Throughout this case, all data collected had extracted themes based on first and second level coding analysis (cf. Merriam, 1998). It was evident in this case analysis that Michael's experience using the SpeechEasy® device was successful. It was evident throughout the case that Michael earned the respect of the people he works with at his father's construction company. Throughout this case, Michael was given more roles that required him to facilitate/lead safety trainings on different occasions. While Michael was not a student in these workplace education activities, instead, he was the instructor. Similar to the Sheila case, these various opportunities to lead/facilitate workplace training activities were the only workplace education data obtained in the Michael case. This limitation is detailed more fully in Chapter 6 under "Limitations." Moreover, he is given opportunities to take on more external roles for the business in which he has to interact with the public. For example, Michael is allowed to quote estimates for future business and is given the opportunity to negotiate with sub-contractors. In addition, throughout the case, there is an increase in internal job satisfaction because of his improved speech. The themes of (a) improved communication at the workplace (b) earned respect from colleagues, and (c) improved job opportunities are indicators that the SpeechEasy® device provided Michael with an opportunity for equality at the workplace.

Case Study #3: Maria

Background

Maria is a 39-year-old female employed at a two-year community college in Atlanta. She has two positions at her institution. First, she works in a professional role as the Coordinator of English as a Second Language. In her secondary role she teaches the

following courses: (a) English Composition 101, (b) Spanish 101, and (c) Spanish 102. Maria is a first generation American. Her parents are from Columbia. Maria is one of the six individuals who agreed to participate in this study. As reported by Maria, she has stuttered her entire life.

Day One Interview—Pre-SpeechEasy Device Use

It was 2:30 pm on a Monday evening. I was coming from Atlanta after doing my Day One interview with Michael. I was on the way to Mableton, Georgia to meet with Maria at her office. When I arrived at Maria's institution, I asked the receptionist to point me to Maria's office. After going down a maze of hallways, I found Maria's office. I knocked on her office door and we engaged in small talk. Then we sat down at her desk. We started the Day One interview. Before I started asking her questions from the interview protocol (See Appendix A.), I thoroughly explained the IRB protocol to Maria and answered any questions she had about the study. She signed the IRB consent form and we began the interview. As I did with Sheila and Michael, the first questions I asked were the screening questions: (a) How do you feel today, and (b) Would you say you are generally a happy person? Maria responded, "Yes, I'm happy with the direction my life is going." Throughout the interview, Maria was responsive to the interview protocol questions. The rationale for asking these screening questions was fully explained in Chapter 3 under the subheading, interview protocols. After I completed the interview, I returned to my apartment, transcribed the interview, and started the first level coding. These first level codes extracted from the transcript of Maria's interview were as follows: (a) desire to speak normal, (b) fear of talking on the phone, and (c) better communicate with her students. A second level coding process

took place in which these first level codes were grouped together and categorized. From this second level coding process one theme was extracted. Table 9 illustrates this theme.

Table 9

Extracted Theme from Day One Interview with Maria—Pre-SpeechEasy Device Use

First Level Codes	Categories	Theme	Description
(a) desire to speak normal,	Desire for Improved Interpersonal Communications	Benefited from Speaking Normally at Work	Maria described throughout the interview
(b) fear of talking on the phone, and			about how she wants to speak normally because it would help her do her job
(c) better communicate with her students			better. She describes in detail how the ability to speak normally would benefit her professionally.

In Maria's extracted Day One theme, benefited from speaking normally at work, Maria described her desire to speak normally at work. The following quote from the transcription from her interview best describes Maria's desire to speak normally at work.

I want to feel comfortable answering the phone. I am terrified of answering the phone because in the past, students, members of the faculty, and staff have been rude to me because of my stuttering. I have instances where they hung up on me because they were annoyed with my stuttering. I want to speak normally. I am tired of seeing my students snicker or roll their eyes at me because I stutter.

Researcher Notes. Maria appears to be pleasant enough. She appeared to have an easygoing demeanor about herself. She was cheerful and had a bubbly personality. She was

sitting behind her desk. Her hair was pulled up into a bun. I felt like I was back in grade school and I was meeting with the teacher. We got along well throughout the interview. She was comfortable in communicating her experiences and feelings to me. As with Sheila and Michael, we both stuttered but I tried not to talk too much. In fact, during the interview, I barely had to say anything to prompt her. Similar to Michael, she kept talking and gave so much in-depth details. It was obvious to me she loved to talk. I began to visualize her teaching and being a very engaging teacher. She employed hand gestures through her interview with me.

Similar to the Michael case, when she started to repeat herself I moved on to the next question on the interview protocol. (See Appendix A.) When the interview ended she had to get ready to teach her Spanish 101 class. I thanked Maria for her time and told her that I looked forward to getting her reflective online journals. Now it was time to go home and rest. Interviewing is an exhausting process. I am going to spend the upcoming weekend transcribing all these data.

Online Journals—Experiences with the SpeechEasy Device

As stated in the methodology, all participants submitted a reflective journal of their experiences using the SpeechEasy® on specified days. Maria's reflective journal entries were similar to Sheila's in length. (See Appendix C.) For her post-10 journal submission, Maria stated that she only noticed some minor improvements in her stuttering using the SpeechEasy® device. "I realize it's only been 10 days but I have noticed a minor improvement in my stuttering." She concluded her journal submission by describing the various noted improvements in her stuttering over the last 10 days:

In the last 10 days, I have observed minor reductions in stuttering since I started using the SpeechEasy® device. I don't get hung up on pronouncing words that start with the letter "S." I am finding it easier to have conversations with some of the faculty members. I do not feel rushed when talking to them either in-person or on the phone.

The first level codes I extracted from the post-10 journal submission were (a) reduction in stuttering (b) improvement in speech (c) ease of talking on the phone, (d) and easier to pronounce certain sounds. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: effective verbal communication with colleagues. As mentioned in the quotes, Maria has received positive reinforcement from different people. He did not indicate anything negative in this journal submission.

Researcher Notes. In spite of the short length of Maria's post-10 journal submission, I was impressed with the amount of content and the codes I was able to extract from her submission. She provided specific details about the minor reduction in her stuttering. I did not struggle as much to extract codes from this particular journal entry because of the specific details provided. I am interested in seeing what her 20-day journal submission has to offer in terms of content. Unlike Michael's post-10 day journal submission, the content of Maria's was not repetitive. In fact, it was direct and to the point.

On a personal note, I am starting to feel more comfortable in my ability to extract codes from narratives and interview transcripts. Unlike the Sheila and Michael cases, codes were easier to extract in Maria's case. I am starting to see patterns appear between these three cases. I still spend my weekends writing and going to Mass on Sundays but my schedule is

not so bad. This dissertation is keeping me out of mischief by my having to do this work on the weekends. I still believe that it is still repetitious and that writing a dissertation is a lonely experience.

In her post-20 journal submission, Maria was still using the SpeechEasy® device. “The SpeechEasy® has drastically reduced my stuttering. I barely notice my stuttering.” She goes on to tell about how one of her colleagues commented on her improved fluency. “Rose complimented me on my reduction in my stuttering. When I asked Maria who Rose was she replied, “Rose is a colleague who I see at bi-weekly division chiefs’ meetings.” A more detailed account of the encounter between Maria and Rose is as follows:

Rose told me how it was great that I found an effective way to reduce my stuttering. She started asking me about the SpeechEasy® device. She wanted to know how much it cost and if the SpeechEasy® device was effective for me, and if there was any research on the SpeechEasy® device? Rose continued to tell me that her younger brother, James, stuttered really bad and was talking to a Speech and Language Pathologist about the SpeechEasy®.

Later in Maria’s journal submission, Maria goes on to talk about how at first she was skeptical about the SpeechEasy® device and whether it was working for her or not.

“At first I was skeptical because during the first 10 days of using the SpeechEasy® device I only noticed minor improvements in my stuttering. A couple days ago, I observed a significant reduction in my stuttering.”

The first level codes I extracted from the post-20 journal submission were (a) positive improvement in speech, (b) reduction in stuttering, and (c) skeptical of the perceived success using the SpeechEasy® device. A second level coding process took place in which

these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: effective verbal communication with colleagues.

Researcher Notes. After reading Maria's post-20 journal submission, I am glad to see her report a reduction in her stuttering. Again, I like that Maria is direct and to the point with her journal submissions. I know she is busy so I can certainly understand why she just tells it like it is. I have noticed with her that she is not long-winded. Thus, it makes my job a lot easier. Perhaps this is why Maria's case write-up is going to go much faster than Sheila's and Michael's. It could, though, that I am now getting more and more used to employing qualitative research methods and that extracting codes and themes are beginning to feel like second nature. That said, I need to make sure I do not passively code and extract themes. I need to be exact in my data analysis technique.

In her post-30 journal submission, Maria was still using the SpeechEasy® device. Maria revealed that her boss and colleagues appear to feel more comfortable having conversations with her.

My boss is not fidgeting with her hands anymore when I talk to her.

Before my boss would always fidget with her hands and appeared to be uncomfortable around me when I was speaking to her. Also, my colleagues have appeared more frequently in my office to engage in conversation with me on everything ranging from projects to discussing their favorite football teams. They are always asking me questions about various topics. Before using the SpeechEasy®, I rarely would have anyone come by office. In the past, the primary form of communication between my colleagues and I was email.

Maria goes on to tell about how her colleagues and students have been more receptive of her than in past. “The members of the faculty appear to be more comfortable around me.” She continues on in this journal submission:

When I have to sit down with students to discuss a paper, disciplining a student in our ESL program, or tutoring my Spanish 101 students, I have found it 100 times easier to give verbal feedback. I do not hear students referring to me as “Senorita Stutters.” Moreover, I have noticed more foot traffic with the members of the faculty coming in and asking me for assistance with students whose first language is not English. In the past, faculty members would email my boss and then she would email me to deal with the situation.

The first level codes I extracted from the post-30 journal submission were (a) increased comfort in verbal communication, (b) respect, and (c) not stigmatized by her stuttering. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: self-confident in articulating thoughts and ideas at work.

Researcher Notes. I’m tired of doing what at times feels like never ending writing. I knew qualitative research was more work in terms of writing. I should stop my complaining and push forward.

Maria appears to be doing really well with the SpeechEasy® device. When I read her post-30 journal submission, I was pleased to see her astonishment with regard to the increased “foot traffic” to her office from colleagues, faculty members, and students. In addition, I was pleased to see that Maria was able to directly help faculty members with ESL students. In addition, I was delighted to see that she is better able to tutor her Spanish 101

students without having her stuttering interfere with her work. It is time to wrap up this reflection and work on Maria's post-30 day journal submission.

In her post-60 journal submission, Maria was brief. Maria was still using the SpeechEasy® device. She indicated in her journal submission that she expects to continue using the SpeechEasy® device.

I plan to keep using my SpeechEasy®. This device has been a miracle worker.

If anybody asks me if it was worth the \$4,700 dollars, I am going to tell them yes it was worth it. I feel like I fit in with my colleagues better. I do not feel out of place anymore with them because I stutter a lot less. Except on rare occasions, I don't stutter at all in any part of my life. I can talk on the phone with ease. I can verbally interact with my colleagues and boss without worrying whether or not I am going to stutter.

The first level codes I extracted from the post-60 journal submission were (a) increased confidence in public speaking, (b) ease of talking on the phone, (c) increased verbal communication with colleagues and supervisor. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: increased confidence in verbal communication in public and interpersonal settings.

Researcher Notes. When I was reading Maria's post-60 submission, I got the impression that she was happy with her success using the SpeechEasy® device. Indeed, it appears that Maria is more confident in her verbal communication.

So far, three out of the six participants were successful in using the SpeechEasy® device. I would really like to have someone who has a poor experience with the

SpeechEasy® device because this would reinforce my objectivity as a researcher. I am continuing in my work by analyzing Maria's day-60 interview.

Day 60 Interview—Experiences with the SpeechEasy Device

It was a Sunday afternoon on Labor Day weekend. I was already in Mableton, Georgia for Church so the drive to Maria's home was short. We met and after exchanging pleasantries and taking Maria up on her offer for coffee, we began the interview. After I completed the interview, returned to my apartment, transcribed the interview, and started the first level coding. These first level codes extracted from the transcript of Maria's interview were as follows: (a) satisfied with use of SpeechEasy® device, (b) improved delivery of training content at faculty workshops, (c) better able to help students, and (d) improved verbal communication. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following themes were extracted: (a) improved delivery at public speaking events, (b) improved satisfaction in working with students, and (c) internal satisfaction with the SpeechEasy® device. Table 10 illustrates these themes.

Table 10

Extracted Themes from Day 60 Interview with Maria—Experiences with the SpeechEasy Device

First Level Codes	Categories	Theme	Description
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(a) satisfied with use of SpeechEasy® device,	(a) Delivery of Speeches at Public Speaking Events	(I) Improved Delivery at Public Speaking Events	Maria described throughout the interview different training workshops and conferences she recently lead.
(b) improved delivery of training content at faculty workshops, and			She was able to charge and engage the audience in her topic.
(c) improved verbal communication	(b) Comfort in Speaking using the SpeechEasy® device		When she was teaching, her students did not roll their eyes as often. Maria reported that her students found it easier to understand her.
		(II) Internal Satisfaction with the SpeechEasy® Device	Maria talked about how satisfied she is with the SpeechEasy® device. She expressed how she felt like a different person. In addition, Maria expressed how she does not feel inhibited by her stuttering because of her improved fluency using the SpeechEasy® device.

In the first theme, improved delivery at public speaking events, Maria described her improved delivery of speeches at a recent workshop.

I spoke with near perfect dictation. Even when I was asked tough questions from hostile faculty members regarding the quality of our institution ESL services, I did not stutter at all. I maintained control of the workshop and did not lose credibility.

In the second theme, internal satisfaction with the SpeechEasy® device, Maria described how satisfied she was with using the SpeechEasy® device.

I feel like I am living for the first time. Not only has SpeechEasy® improved my job performance but I do not feel like I have “one arm tied behind my back.” In other words, I do not feel handicapped by my stuttering anymore. My students have reported that they can understand my verbal communication more effectively when I am lecturing or leading a discussion. I have had more students coming to my office hours seeking my assistance since employing the SpeechEasy® device. Several of my older non-ESL students (ages 25 and over) have reported to me that my younger non-ESL students (ages 18-24) were not making snide disrespectful comments about my stuttering because my improved fluency. Since using the SpeechEasy® device, I have noticed that my ESL students are paying closer attention to me when I am teaching. They are not distracted by my stuttering.

Summary of Case #3: Maria

Throughout this case, all data collected had extracted themes based on first and second level coding analysis (cf. Merriam, 1998). It was evident in this case analysis that Maria’s experience with using the SpeechEasy® device was successful. Since beginning her use of the SpeechEasy device, she has an increased confidence in leading workshops. Also, Maria’s colleagues and boss felt more comfortable having a conversation with her. As with the other cases, this case provided little-to-no data pertaining to workplace education experiences using the SpeechEasy® device in spite of the researcher’s best efforts to probe and prompt Maria for this type of data. As reported by Maria, all her students have been paying more attention to her lectures and discussions when she was teaching in the

classroom. This was especially true with her ESL students. Moreover, Maria's non-ESL students have reported to her about the reduction in the disrespect shown by her younger students. While Maria is happy her job performance has improved, it appears that she has developed an internal satisfaction from using the SpeechEasy® device. For Maria, speaking with ease and without fearing how her stuttering was going to interfere appeared to be more important to her.

Case Study #4: Jeremy

Background

Jeremy is a 25-year-old professional employed as a bank teller in Birmingham, Alabama. He earned his bachelor's degree in Business Administration from a university in the Birmingham, Alabama area. Jeremy is one of the six individuals who agreed to participate in this study. As reported by Jeremy, he has stuttered his entire life.

Day One Interview—Pre-SpeechEasy Device Use

It was 1:00 pm on a Friday afternoon. I was coming from my home to meet with Jeremy. Jeremy wanted to meet at 3:00 pm at his home. The directions I got from Google Maps® helped facilitate my timely arrival to Jeremy's house. Just as I did with Sheila, Michael, and Maria, we exchanged pleasantries and engaged in small talk upon meeting each other. Before I started asking him questions from the interview protocol (See Appendix A.), I thoroughly explained the IRB protocol with Jeremy and answered any questions he had about the study. He signed the IRB consent form and we began the interview. As I did with Sheila, Michael, and Maria, the first questions I asked were the screening questions: (a) How do you feel today, and (b) Would you say you are generally a happy person? The rationale for asking these screening questions was fully explained in Chapter 3 under the subheading, Interview

Protocols. Jeremy responded, “As happy as anybody can be.” Throughout the interview, Jeremy was responsive to the interview protocol questions. After I completed the interview, I returned to my apartment, transcribed the interview, and I started the first level coding. These first level codes extracted from the transcript of Jeremy’s interview were as follows: (a) fear of talking on the phone, (b) treated with respect, and (c) insecure about dealing with angry customers. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process a theme was extracted. Table 11 illustrates this theme.

Table 11

Extracted Themes from Day One Interview with Jeremy—Pre-SpeechEasy Device Use

First Level Coding	Categories	Theme	Description
(a) fear of talking on the phone,	(a) Professionally Inhibited by	Fear of Speaking to Colleagues and	Jeremy described throughout the interview about his fear of speaking
(b) treated with respect, and	Stuttering	Customers	on the phone and to irate customers.
(c) insecure about dealing with angry customers	(b) Unable to Communicate with Difficult People		This fear of speaking is very real to him. He described how he is troubled when he has to meet someone new whether it is a new coworker or a customer. In essence, Jeremy psychologically closes himself off to the rest of the world when anyone becomes impatient or angry with him about his stuttering. This reaction has inhibited him from progressing in his career.

In Jeremy's Day One extracted theme, fear of speaking to colleagues and customers, Jeremy revealed how crippling it was for him to interface with co-workers and customers because of his stuttering. As previously mentioned in the beginning of this case, Jeremy is employed as bank teller. Jeremy's job requires him to interface with customers and resolve customer grievances. The majority of the times, Jeremy's customers are irate over the issues related to their accounts. However, these customers are already upset, impatient, and want their bank related issues resolved as soon as possible. Thus, the majority of customers are not patient with Jeremy when he stutters.

I will not answer the phone at work. I will let it ring and ring until somebody else picks it up. I am terrified of answering the phone. I have too many customers that have been rude and not respectful to me because of my stuttering. Even when I have to deal with angry customers in-person, I usually wave to my manager to assist me and deal with the customer. The customer is already upset about why a deposit is not showing or being charged an overdraft fee. Then the customer is forced listen to my stuttering and I want them to be patient but they are not. Instead they are outright rude and vulgar toward me. One time this customer shouted, "First, this bank robs me of my money, now they send this retard to deal with me! I want to speak with the manager!" I usually go hide until that customer leaves.

Researcher Notes. When Jeremy was telling me about his fears of speaking with angry customers, I was taken aback by some of the stories he shared with me. He looked terrified as he tearfully told me about this one incident where an angry customer stood up and screamed awful obscenities about his stuttering. Out of concern for Jeremy, I asked him

several times if he wanted to continue the interview. He kept insisting he wanted to so we proceeded with the rest of the interview. I insisted we take a 10-minute break so he could gain his composure and calm down. He was truly traumatized by people who took offense at his stuttering. My heart went out to him. Jeremy appeared to be highly sensitive about his stuttering and the stories he shared with me about interfacing with customers. I was empathetic toward him. He appeared to me to be really nervous. I told him to relax, and that we have all the time in world; I am in no rush. During the interview he was fidgeting with his hands a lot. I wondered if I should have asked him if he had some medical condition that was making him restlessly move his hands. I did not want to be rude or embarrass him.

Admittedly, I had doubts on whether I should let him continue in the study. Then I realized like the previous cases, they all had war stories about their stuttering and that Jeremy was more sensitive than the other cases about his war stories of stuttering. Again, I asked him if he wanted to continue, and he acknowledged yes, “I think what you are doing in your study is important for all of us who stutter. Give me a few minutes.” I waited until he was able to gain his composure. After the 10-minute break, we continued on with the interview. He was comfortable in communicating his experiences and feelings to me. As with the Sheila, Michael, and Maria cases, we both stuttered but I tried not to talk too much. In fact, during the interview, I just asked him questions and he would some relate them all to the angry customers at his bank. While some of his responses were repetitive, they were full of details. As with Michael, when Jeremy started to repeat himself I moved us on to the next question on the interview protocol. (See Appendix A.) The interview itself ended in just over a half-hour (including the 10-minute break Jeremy took). I thanked Jeremy for his time and that I looked forward to getting his reflective online journals. Now it was time to go home and rest.

Interviewing is an exhausting process. I am going to be spending the upcoming weekend transcribing all this data.

Online Journals—Experiences with the SpeechEasy Device

As stated in the methodology, all participants submitted a reflective journal of their experiences using the SpeechEasy® on specified days. Jeremy's reflective journal entries were short in length. (See Appendix C.) For his post-10 journal submission, Jeremy stated that he noticed minor improvements in his stuttering using the SpeechEasy® device. "I have noticed that I am not stuttering on my 'T's' or 'S' as often." He concluded his journal submission by describing the other noted improvements in his stuttering that he noticed in the last 10 days:

While I am still very uncomfortable talking on the phone with customers, I have been able to deal with angry customers better. I listen to the feedback I get from the SpeechEasy® and I am better equipped to interact with my angry customers. My manager noted how impressed he was with how I dealt with a customer who was angry about being charged a fee because their account was overdrawn.

The first level codes I extracted from the post-10 journal submission were (a) fear of talking on the phone, (b) fear of talking to angry customers, and (c) easier to pronounce certain sounds. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following themes were extracted: (a) improved verbal interactions with customers and (b) fear of talking on the phone.

Researcher Notes. Jeremy's post-10 journal submission was short and to the point. Based on his behavior during the Day-One interview, I was expecting Jeremy to have given

up on the SpeechEasy® device. I am happy that he has noticed a minor reduction in his stuttering. At this point, I am hoping to get his post 20-day journal submission. He may very well be my first participant who could potentially self-select himself out of the study. The events that transpired during the Day-One interview are bothering me. I know he was really sensitive but I was really concerned for him. I think this is the human aspect of qualitative research that requires me to reflect upon the experience. Maybe his reported reduction in stuttering in his post-10 journal submission may reduce the sensitivity and the anxiety he displayed during the Day-One interview. If he does submit his 20-day journal submission I am sure it will be interesting to read. Thank goodness I have 10 days to take a break from Jeremy's case.

In his post-20 journal submission, Jeremy was still using the SpeechEasy® device. "I was able to have a phone conversation with a customer and I only stuttered once. I had the biggest grin on my face after I hung the phone." He goes on to tell about how his manager commended him for his improved fluency.

My manager came up to as I was walking out the door and commended me for the improvement in my speech. He asked me how I did it and I pointed to my SpeechEasy® device. He started asking me all kinds of questions about how it worked. I answered all the questions he asked.

Like Maria, Jeremy admits his own skepticism regarding the SpeechEasy® device. In his post 20-day journal submission, Jeremy reveals that he was almost sure he was going to throw it out within a few days.

I was not getting the results that I wanted fast enough. It was not until a couple days ago, I carried on the telephone conversation with the customer with minimal stuttering. That encouraged me to give SpeechEasy® a chance.

The first level codes I extracted from the post-20 journal submission were (a) ease in talking on the phone and (b) reduction in stuttering. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: clearer verbal communication at work.

Researcher Notes. After reading Jeremy's post-20 journal submission, I am glad to see him report a reduction in his stuttering. Again, I was almost expecting him to have thrown the SpeechEasy® device out by now. On a personal note, as a good consumer I think it is important for Jeremy to be skeptical. In my opinion, a good consumer makes wise business and fiscal decisions. I am glad to see he is having some success with the SpeechEasy® device.

In his post-30 journal submission, Jeremy was still using the SpeechEasy® device. Jeremy revealed that his manager has given positive feedback about his improved speech. In addition, he reveals in his journal submission that it is easier to participate in staff meetings.

Before it was like pulling teeth to get me to talk during staff meetings.

Now they can't shut me up at staff meetings. I feel really comfortable in communicating my thoughts at staff meetings because of my improved fluency from using the SpeechEasy® device. I feel more like a part of the team.

Jeremy goes to tell about how his customers have been more pleasant to deal with on the phone because of his improved speech fluency. "Customers are not mean to me as much because of my reduced stuttering." He continues on this journal submission:

Lately, I have found it easier to deal with customers because of my notable reduction in my stuttering. I do not go running away from angry customers anymore.

In addition, my manager has given me the opportunity to work the drive-thru teller area. I really feel more comfortable talking with customers in any setting.

The first level codes I extracted from the post-30 journal submission were (a) improved verbal communication, (b) comfort in communicating with customers, (c) increased participation at staff meetings, and (d) increased responsibilities. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: increased confidence in verbalizing thoughts and ideas at work.

Researcher Notes. The end is near for writing these cases up. I have the rest of Jeremy's case to write, then on to the last two cases. I already am starting to see preliminary themes for the cross-case analysis. However, I want to wait until I am finished with all the cases before I even begin to tackle that project.

Jeremy is obviously having a lot of success with the SpeechEasy® device. When I read his post-30 journal submission, I was pleased to read about his success with communicating with difficult customers. Jeremy appears to be having an easier time dealing with angry customers. From what I can gather, Jeremy's reduction in his stuttering has opened professional opportunities for him. Maybe this time next year he will be a supervisor or a manager for his bank. It is time to call it a night and go to bed.

In his post-60 journal submission, like Maria, Jeremy was brief. Jeremy was still using the SpeechEasy® device. Like the previous cases, Jeremy indicated in his journal submission that he expects to continue using the SpeechEasy® device.

I am amazed at the doors that have opened because I chose to use the SpeechEasy® device. Admittedly, I was skeptical at first and was not sure how effective the device was going to be for me. It has now been two months since I started using the SpeechEasy® device and I am very pleased with the success I have had with it. For as long as I could remember, this is the first time I do not feel like an outsider. Instead, I feel like I can verbally communicate with all my customers and my co-workers.

The first level codes I extracted from the post-60 journal submission were (a) success with the SpeechEasy® device, (b) improved verbal communication, (c) increased confidence in speaking, and (d) increased professional opportunities for advancement in career field. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: increased confidence in verbal communication with colleagues.

Researcher Notes. When I was reading Jeremy's post-60 submission, I was pleased to see he did not give up on the SpeechEasy® device. As discussed in my Day-One interview and post-10 journal submission Researcher Notes, I thought he would have been my first participant to self-select out of the study. He had noticeable anxiety issues during the Day-One interview. I am glad I was wrong, even though I would like one of my participants to stop using the SpeechEasy® device because I believe it would add scholarly value to my

study. If it ends up that all six participants are successful with the SpeechEasy® device, then so be it. Now it is time to interview Jeremy for the last time.

Day 60 Interview—Experiences with the SpeechEasy Device

It was a Saturday afternoon. I was on my way to Birmingham, Alabama to meet with Jeremy for his Day-60 interview. I started to wonder if he was going to be anxious like he was for the first interview or was I going to see a completely different person? At Jeremy's request, we agreed to meet at his home. My assumption was that he felt more comfortable being interviewed in his own home because he controlled the environment and not me. He was confident in the manner he presented himself. He had good posture, his speech was articulate and easier to understand, and he did not display any nervous behavior like he did during the Day-One interview. His hands were not fidgeting. He was not crying and did not need to take time to gain his composure. The person I interviewed today was not the same person I interviewed two months ago. I am still in awe over the positive changes I have mentioned in his behavior. The interview was successful and lasted about 45 minutes. After I completed the interview, I returned to my apartment, transcribed the interview, and started the first level coding. These first level codes extracted from the transcript of Jeremy's interview were as follows: (a) improved verbal communication, (b) give credence to what I am telling them, (c) active participant at staff meetings, and (d) active participant at training sessions, workshops, and seminars. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following themes were extracted: (a) improved verbal communication and (b) active participation in group work. Table 12 illustrates these themes.

Table 12

Extracted Themes from Day 60 Interview with Jeremy—Experiences with the SpeechEasy Device

First Level Coding	Categories	Theme	Description
(a) improved verbal communication,	(a) Increased in Communication with Co-Workers	(I) Comfortable Communicating with Others at Work.	Jeremy relentlessly talked about how he speaks to his customers, co-workers, and manager more clearly. People can understand what he is talking about. He does not fear talking on the phone anymore. He seeks out customers to assist them any time he can.
(b) give credence to what I am telling them,			
(c) active participant at staff meetings, and	(b) Increased Active Participation in Group Environments	(II) Active Participation in Group Work	Jeremy talked about how his participation in group work is more active. He is excited and willing to take on roles that require public speaking. He described how being an active participant in group work made him feel like a part of the team. He talked about how he was willing to take on increased speaking responsibilities in group projects
(d) active participant at training sessions, workshops, and seminars			

In the first theme, comfortable communicating with others at work, Jeremy described how he is more comfortable communicating to managers, customers, and co-workers when he is at work.

I can speak clearly now. People can understand what is coming out of my mouth. I am not afraid to talk on the phone anymore. I do not go running from customers anymore. I know I've told you a lot of this before but I am in such

disbelief at how the fluency of my speech has improved because of the SpeechEasy® device.

In the second theme, active participation in group work, Jeremy described his increased participation in group projects at work.

Before, I would opt to do the assignments that required the least amount of speaking time and the least amount of work. Now, I am a more active group participant. My co-workers cannot get me to shut up. I volunteer to do more speaking roles because I want to ‘show-off’ the reduction in my stuttering.

Summary of Case #4: Jeremy

Throughout this case, all data collected had extracted themes based on first and second level coding analysis (cf. Merriam, 1998). It was evident in this case analysis that Jeremy’s experience with using the SpeechEasy® device was successful. Since beginning his use of the SpeechEasy device, he has an increased active participation in group activities. Also, Jeremy feels more comfortable in communicating verbally to his colleagues and boss. In addition, Jeremy is receiving promotional opportunities because of his improved speech. Jeremy is happy with the external rewards of new job opportunities and active group participation. As a result of his improved speech, it appears that he has developed an internal satisfaction from using the SpeechEasy® device. He feels a part of the group and not like an outsider. For Jeremy, the benchmark for success was whether he was going to be able to speak clearly to his customers. With regard to the workplace education data, Jeremy did report on how he was willing to increase his responsibilities in group projects that were attached to work related training sessions. Admittedly, this was the only obtained workplace education related data to Jeremy’s case.

Case Study #5: Sherry

Background

Sherry is a 45-year-old woman employed as the 3rd shift supervisor at a steel refinery in Birmingham, Alabama. She earned her associates degree in Business Administration from an online university. In addition, Sherry is a single mother of two children. Sherry is one of the six individuals who agreed to participate in this study. As reported by Sherry, she has stuttered her entire life.

Day One Interview—Pre-SpeechEasy Device Use

It was a warm early Saturday morning. Getting up at 4:00 am is not an easy task for anyone. I was meeting with Sherry for coffee at her home for her Day One interview. She insisted that we meet at 7:00 am to do the interview because this was the most opportune time for Sherry to be interviewed. Just as I did with Sheila, Michael, Maria, and Jeremy, we exchanged pleasantries and engaged in small talk upon meeting each other. You could smell the scent of steel coming off her clothing. I was worried about waking her children. Sherry informed me that her kids were at her parents' house for the night. Amazingly, she was wide awake and full of energy at this early hour. Before I started asking her questions from the interview protocol (See Appendix A.), I thoroughly explained the IRB protocol with Sherry and answered any questions she had about the study. She signed the IRB consent form and we began the interview. Like I did with Sheila, Michael, Maria, and Sherry, the first questions I asked were the screening questions: (a) How do you feel today, and (b) Would you say you are generally a happy person? Sherry responded, "Other than feeling tired, I am in a great mood. I have the next three nights off." Throughout the interview, Sherry was responsive to the interview protocol questions. After I completed the interview, I returned to

my apartment, transcribed the interview, and started the first level coding. These first level codes extracted from the transcript of Sherry's interview were as follows: (a) ignored by my subordinates, (b) treated with disrespect, (c) desire to speak normally, and (d) expect SpeechEasy® to improve my stuttering. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process themes were extracted. Table 13 illustrates these themes.

Table 13

Extracted Themes from Day One Interview with Sherry—Pre-SpeechEasy Device Use

First Level Codes	Categories	Theme	Description
(a) ignored by my subordinates,	(a) Hopes SpeechEasy® Reduces Stuttering	Treated with Disrespect by Subordinates	Sherry described throughout the interview about how her subordinates treat her with the utmost disrespect.
(b) treated with disrespect,		because of	She talked about how her subordinates
(c) desire to speak normally, and	(b) Perceived Lack of Respect for Authority	Stuttering	ignore her authority as supervisor. In addition, Sherry described the
(d) expect SpeechEasy® to improve my stuttering			complete lack of respect shown by her subordinates. She is frustrated with the way her subordinates treat her and does not want it to continue anymore.

In the Day One extracted theme for Sherry, she describes how her subordinates treat her with disrespect and do not respect her authority as supervisor because of her stuttering.

Before my shift begins, I can hear everybody in the smoking room talking about my stuttering. For example, the other night I heard one of my senior employees

say, Mrs Stutter is in a foul mood, watch out! You might get spit on when she speaks to you.

Sherry continues on to talk about how she wishes her subordinates would show her some respect:

If these people had to live in my shoes for one day their attitudes would change real fast. How dare they treat me the way they do.

I have tolerated this (expletive) about my stuttering for 20 some odd years. I have asked upper-management for help and they have not been too helpful. I send my people to communication skills and diversity training seminars and they still do not show respect for the position I hold because they keep on making insensitive jokes about my stuttering. I am ready to try something new like the SpeechEasy® device.

Researcher Notes. When I read Sherry's transcript after the interview, I could feel the suffering she has had to deal with because of her stuttering. I do not know how she has tolerated working there for so many years. She is more patient than I am. I would have quit after a month. As noted in my autoethnography, I grew up around factory workers, and I can tell you from personal experience that they can be rough to deal with at times. There was, though, no acceptable reason for her subordinates to treat Sherry the way they did. These people have called her all kinds of offensive obscenities because she stutters. She was telling me all of these horrible things calm, cool, and collected. She did not shed a tear or show any type of emotion during the interview. She had what I would describe as a "steely" disposition. She looked worn and rough in her face from working in the steel plant. Sherry's hands were about twice the size of mine. She almost crushed mine when we shook her hands. She did not display any kind of emotion during the interview. This was all business during

the interview. Yet, for some reason or another, she was comfortable in communicating her experiences and feelings to me. For the life of me I cannot figure out why she was so comfortable being interviewed by me. Perhaps it was because we both stuttered. As with the Sheila, Michael, Maria, and the Jeremy cases, we both stuttered but I tried not to talk too much. In fact, during the interview, I just asked her questions and she would some relate them all to her disrespectful subordinates. She was direct and to the point with every answer, providing just enough details to extract at least one or two codes from the text. The interview itself ended in just over 45 minutes. I thanked Sherry for her time and told her that I looked forward to getting her reflective online journals. Now it was time to go home and sleep. Getting up at 4:00 am is not human. I will transcribe Sherry's interview after I take a nap.

Online Journals—Experiences with the SpeechEasy Device

As stated in the methodology, all participants submitted a reflective journal of their experiences using the SpeechEasy® on specified days. For Sherry's reflective journal entries, some were too short or too long in length, but averaged approximately 20 lines of text. (See Appendix C.) For her post-10 journal submission, Sherry stated that she noticed few improvements in her stuttering using the SpeechEasy® device. "I am finding it easier to give directions to my subordinates." She continues her journal by telling about how the teasing about her stuttering still continues. "They still make fun of me but I know it will take longer for my employees to notice even the few improvements." She concluded her journal submission by describing the other noted improvements in her stuttering that she noticed in the last 10 days, "I am beginning to notice improvements in my stuttering. I do not get stuck on 'I's as easily. Also, I am finding the SpeechEasy® device helpful for controlling my breathing." As noted in Chapters One and Two, the SpeechEasy® device assists in

controlling the rate of speech in the individual through a process called choral speech. As noted in Chapter Two, choral speech stimulates immediate normal-sounding speech that is reasonably free from speech disfluencies and is comparable to the speech patterns of individuals with no history of disfluencies (Kalinowski, Saltuklaroglu, Stuart, & Guntupalli, 2007). In addition, choral speech helps with controlling breathing when the individual outputs normal sounding speech (Kalinowski, Saltuklaroglu, Stuart, & Guntupalli, 2007; Ward, 2006; Wingate, 1997, 2002).

The first level codes I extracted from the post-10 journal submission were (a) minor improvements of speech fluency, (b) reduction in stuttering, and (c) easier to pronounce certain sounds. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: improvement of speech fluency.

Researcher Notes. Like Jeremy, Sherry's post-10 journal submission was short and to the point. While the improvement in her stuttering is marginal at best, it is progress. Still she is happy with the SpeechEasy® device as far as I can tell. She did not directly state that she was happy with the SpeechEasy device. However, the responses in her reflective journal submission tell me indirectly that she is happy with the SpeechEasy® device. I hope her post-20 journal submission has a lot of good details that will add value to my study.

In her post-20 journal submission, Sherry was still using the SpeechEasy® device. "I was able to discipline a subordinate who had been habitually late for his shift and I did not stutter at all." She talked about how one of her long-time subordinates complimented her on the improvement in her stuttering.

Henry, one of my welders, asked me, "What was going on with my stuttering?" I asked him, "What do you mean?" Henry responded, "You are talking more normal lately. It sounds really good." I thanked him for the compliment and went back to work.

Sherry goes on to tell about how her boss complimented Sherry on the reduction in her stuttering. Apparently, this was shocking to her because in 20 years she had not received any attention from her boss regarding her stuttering.

My boss who knows my talents and abilities has not made one comment about my stuttering in 20 years. That changed for me on Wednesday night. We were having our weekly morning meeting with the 1st supervisor, the Plant Manager, and I had to give a briefing on the production totals for the month up to that point. My boss almost hit the floor. His eyes were wide open and he said, "That was amazing Sherry! What did you do to stop yourself from stuttering?" I told him about the SpeechEasy® device and showed him it. I mentioned to him that our HMO would not cover it. He said he would try to have Human Resources reimburse me for the cost.

The first level codes I extracted from the post-20 journal submission were (a) reduction in stuttering and (b) improved delivery of presentations/briefings. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: (a) reduction in stuttering leading to more opportunities for public speaking roles at work.

Researcher Notes. Reading Sherry's post-20 journal submission was refreshing. I am glad that her reported reduction in her stuttering is getting noticed. Also, if she can get her company to reimburse her for the cost of the SpeechEasy® device then go for it. It was

good to see that one of her subordinates was showing some respect to her. Something I have noticed, as I go through each of these cases, is that the extracted themes are similar if not the same for the majority of the data collection points. This should make my cross-case analysis less taxing on me. In my opinion, a good consumer makes wise business and fiscal decisions. I am glad to see she is having some success with the SpeechEasy® device.

In her post-30 journal submission, Sherry was still using the SpeechEasy® device. Sherry talked about how her subordinates are not making fun of her as much anymore. In fact, she finally worked the courage up and got one of her subordinates fired for showing lack of respect to authority.

I finally took a stand against one of the hecklers that was giving me a hard time about my stuttering. I took the matter to my manager and to Human Resources. That young man was fired within the hour with his last paycheck. It felt great to take a stand. Later that week, I had to run a training seminar on Occupational Health and Safety Practices for my subordinates. I did not stutter at all and nobody made fun of me. I was able to hear myself speak.

The first level codes I extracted from the post-30 journal submission were (a) gained respect of subordinates, (b) not being made fun of, and (c) internal strength to use authority. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: self-confident in expressing workplace needs to subordinates.

Researcher Notes. I have one word that says it all: Wow! This journal submission was the turning point for Sherry. From what I have gathered thus far, she has earned the respect of almost everyone that works under her authority. It was nice to hear about her

safety training seminar for her subordinates. I am stunned at what, obviously, using the SpeechEasy® device has afforded her. I am really looking forward to Sherry's post-60 journal submission. It's time to take a break and relax and give myself some time away from this study.

In her post-60 journal submission, Sherry was brief. She was still using the SpeechEasy® device. Like the previous cases, Sherry indicated in her journal submission that she expects to continue using the SpeechEasy® device.

I like the results I got from using the SpeechEasy® device. If you told me two months ago that my stuttering would be greatly reduced from using the SpeechEasy® I would not have believed it. I am better at barking out orders to my subordinates without having to worry about if I am going to stutter or not. Even when I do, it is only noticeable to me. Hopefully, by this time next year I will have this thing mastered and will talk as if I have never stuttered before. Oh by the way, my boss got Human Resources to reimburse me for the SpeechEasy® device. The argument he made was that it was an assistive technology that improving my productivity as an employee.

The first level codes I extracted from the post-60 journal submission were (a) reduced stuttering at work and (b) ease in communicating directions to subordinates. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: improved articulate communication to subordinates.

Researcher Notes. When I was reading Sherry's post-60 submission, I was pleased to see she was having an easier time communicating with her subordinates. Overall, I am

glad she finally gained the respect of her subordinates. In addition, I was pleasantly surprised that Sherry's boss acted as an advocate to Human Resources so Sherry could be reimbursed for the cost of the SpeechEasy® device. I realized that up to this point, all the participants have been successful with employing the SpeechEasy® device. Again, I cannot emphasize enough that I would like one of my participants to stop using the SpeechEasy® device because I believe it would add scholarly value to my study. I guess I have to wait and see what happens.

Day 60 Interview—Experiences with the SpeechEasy Device

It was a Saturday morning and once more I was up at 4:00 am to meet Sherry at her home in Birmingham right when she gets off work. I am amazed she has worked those overnight hours for 20 years. When I arrived at Sherry's home, she was there with a cup of coffee in her hand. I was invited in and she poured me a cup of coffee as well. After exchanging pleasantries, we completed the interview, which lasted 30 minutes. After I completed the interview, I returned to my apartment, transcribed the interview, and started the first level coding. These first level codes extracted from the transcript of Sherry's interview were as follows: (a) reduction in stuttering, (b) confidence in speaking, (c) subordinates treat me with respect, and (d) ease in leading safety training seminars. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: self-confident in communicating authority to subordinates. Table 14 illustrates these themes.

Table 14

Extracted Themes from Day 60 Interview with Sherry—Experiences with the SpeechEasy Device

First Level Coding	Categories	Theme	Description
(a) reduction in stuttering,		Improved	Sherry described how she is better
		Communication of	able to lead her subordinates at
(b) confidence in speaking,	(a) Increased Comfort	Authority to	training seminars and in the shop.
	in Communication	Subordinates	Her reported improved fluency
(c) subordinates treat me with			has provided her with confidence
respect, and			to take charge of her subordinates.
	(b) Leadership of		She has gained control of her
(d) ease in leading safety	Subordinates		subordinates.
training seminars			

In the first extracted theme, improved communication of authority to subordinates, Sherry reported how she gained the respect for her authority as supervisor because of her reported reduction in her stuttering.

When I lead my subordinates in safety training classes, they actually listen to me because I speak more clearly and they can understand. They see me and not my stuttering...At the start of shift, I have to give everybody assignments for the night and their production goals. I am better capable of telling my subordinates this information without having them roll their eyes or make fun of me...I have taken control of my subordinates.

Summary of Case #5: Sherry

Throughout this case, all data collected had extracted themes based on first and second level coding analysis (cf. Merriam, 1998). It was evident in this case analysis that Sherry's experience with using the SpeechEasy® device was successful. Since beginning her use of the SpeechEasy device, she has developed confidence in being a supervisor who can effectively communicate with her subordinates. In addition, Sherry revealed her increased confidence in leading safety training seminars without fear that her stuttering will get in the way. Similar to the Jeremy case, leading the safety training seminars was the only element of workplace education data obtained in the case despite the efforts of the research to probe for more workplace education related data. Sherry has received positive recognition from her manager regarding her performance because of Sherry's improved speech. While Sherry did receive the reimbursement for the cost of the SpeechEasy® device, her reward for using the SpeechEasy® device was internal. She has gained the respect of her subordinates in that they no longer mistreat her. For Sherry, using the SpeechEasy® device was her last option for reducing her stuttering so she could effectively communicate to her subordinates.

Case Study #6: Philip

Background

Philip is a 52-year-old professional employed as a math teacher in Columbus, Georgia. He earned his engineering and teaching degree at a university in Georgia. He is a retired civil engineer. Currently, Philip is teaching mathematics at the high school and college level. He has been teaching for six years. Philip is one of the six individuals who agreed to participate in this study. As reported by Philip, he has stuttered his entire life.

Day One Interview—Pre-SpeechEasy Device Use

It was 6:00 pm on a Tuesday evening. I was coming from work and going to meet Philip at his office. Upon arrival at Philip's office, I exchanged pleasantries and engaged in small talk upon meeting each other. Before I started asking him questions from the interview protocol (See Appendix A.), I thoroughly explained the IRB protocol with Philip and answered any questions he had about the study. He signed the IRB consent form and we began the interview. Like I did with Sheila, Michael, Maria, Jeremy, and Sherry, the first questions I asked were the screening questions: (a) How do you feel today, and (b) Would you say you are generally a happy person? Philip responded, "I guess. I am in a good mood. I had a really long day." Throughout the interview, Philip was responsive to the interview protocol questions. After I completed the interview, I returned to my apartment, transcribed the interview, and started the first level coding. These first level codes extracted from the transcript of Philip's interview were as follows: (a) prejudged because of stuttering, (b) viewed as weak and inferior, (c) desire to speak normally, and (d) desire to reduce stuttering. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following themes were extracted. Table 15 illustrates these themes.

Table 15

Extracted Themes from Day One Interview with Philip—Pre-SpeechEasy Device Use

First Level Codes	Categories	Theme	Description
(a) prejudged because of stuttering,	(a) False Perceptions about Stuttering	False Stuttering Stereotypes held by	Philip described throughout the interview how he is
(b) viewed as weak and inferior,		Colleagues.	ridiculed by his new colleagues and students
(c) desire to speak normally, and	(b) Reducing		because of his stuttering. He
(d) desire to reduce stuttering	Stuttering and Clear Communication		talked about how they do not take him seriously. He reported how he does the same amount of work but he is treated as if he is inferior to his colleagues and students.
			Philip suggested that if he spoke clearly like everybody else he would not be treated as an inferior.

In the Day-One extracted theme for Philip, false stuttering stereotypes held by colleagues, Philip described how he disliked the stereotypes portrayed about his stuttering.

My colleagues do not take me seriously. I do equal amount of work and yet I am disregarded because I am not charismatic when I speak. Several times, I have overheard several of my colleagues making bets how many times I will stutter or repeat syllable or sound. It is disheartening and makes it hard for me to come into work. If I spoke clearly, I would not be treated as if I am a second-class citizen.

Researcher Notes. Philip's story is similar to others who stutter. He is right in that people who do not stutter take for granted the ability to give a clear and coherent conversation or speech. As noted in my autoethnography, it is a dream of anyone who stutters to speak normally. Unlike Jeremy who shed tears during his first interview, Philip was stern about his colleagues for prejudging him. I hope the SpeechEasy® device is a viable solution for him. Obviously, Philip is smart. He holds two degrees in civil engineering and mathematics so he is not of low cognitive intelligence. Somehow, Philip keeps going into work every day in that environment. I do not know if I would have the patience to deal with the ridicule day-in and day-out.

The interview itself ended in just over a half hour. I thanked Philip for his time and that I looked forward to getting his reflective online journals. Now it was time to go home and rest my eyes. In a way, I am happy this is the final case for this study. I am tired! I am looking forward to doing the cross-case analysis and the last two chapters of this dissertation.

Online Journals—Experiences with the SpeechEasy Device

As stated in the methodology, all participants submitted a reflective journal of their experiences using the SpeechEasy® on specified days. Philip's reflective journal entries were short in length. (See Appendix C). For his post-10 journal submission, Philip stated that he was not getting stuck on "S" sounds in his stuttering using the SpeechEasy® device. "I can actually pronounce a word with the letter 'S.' I have never been able to do that in my entire life." He concluded his journal submission by describing the ease of pronouncing words that previously presented difficulty:

I can pronounce words with the hard 'C' sound. Before I would get stuck on that one letter for 3 minutes before I could say the whole word. Another letter was 'I.'

I would always repeat the letter ‘I.’ In the last 10 days I have not been doing that at all. I am looking forward to what other treasures using the SpeechEasy® device holds for me.

The first level codes I extracted from the post-10 journal submission were (a) ease of speaking, (b) reduction in stuttering, and (c) easier to pronounce certain sounds. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: ease of pronouncing words.

Researcher Notes. Philip’s post-10 journal submission was short and insightful. Philip’s report about the ease at pronouncing words with difficult sounds was great news. For me, words with that start with letter “S” are difficult for me to pronounce. I wish the other five participants talked more about the change in the pronunciation of sounds. Jeremy talks about it a little bit but not like Philip. Philip went on about the different words he could pronounce with ease since using the SpeechEasy® device. I am interested in seeing what Philip’s post-20 journal submission is going to say about the changes in his stuttering noticed by others.

In his post-20 journal submission, Philip was still using the SpeechEasy® device. “I was able to have an articulate conversation with a new colleague and I did not stutter at all.” He goes to tell about interactions with several of his colleagues.

Lately several of my colleagues have taken notice of my reduction in my stuttering. They have taken me more seriously than before. This one colleague told me that he noticed I was not stuttering as much. That it was easier to have a conversation with me. The department head at the university after observing my class,

commented on how much faster I went with my lectures and how much easier it was to understand what was coming out of my mouth. Even some of my students who would normally roll their eyes or snicker in the back of the room were attentively listening to me. I am glad the improvement in my stuttering is being noticed and appreciated.

The first level codes I extracted from the post-20 journal submission were (a) reduction in stuttering and (b) improved verbal communication with colleagues and supervisor. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: improved interpersonal communications at work.

Researcher Notes. After reading Philip's post-20 journal submission, I am glad to see him report a reduction in his stuttering. In addition, I am happy to see Philip was finding it easier to interact with his colleagues, even though I was disturbed a bit when I read what Philip reported that one of his colleagues had said to him, "That it was easier to have a conversation with me." I thought it was backhanded compliment. As I interpreted what Philip's colleague said to him, I thought it was rude. That was my own personal perception when I read that portion of Philip's entry. I need to be mindful that I cannot let my personal perceptions cloud my judgment in this study. It is getting harder to be reflective knowing that I am almost finished with collected data for my study. I believe I am being impatient and I want this dissertation study to be done so I can move on with the rest of my professional career and my life for that matter. I want to move forward in my progress toward finishing this study and my degree.

In his post-30 journal submission, Philip was still using the SpeechEasy® device. Philip described the positive feedback he received from everybody he works with at the university and the high school. In addition, he revealed in his journal submission that it is easier to participate in faculty meetings.

I am not afraid to contribute to these faculty meetings. I am not worried about whether a colleague is going to roll their eyes when I talk. I am worried that I am going to stutter to the point that it makes it impossible to understand what I am saying.

Philip continues with his journal submission and talks about how well his students have reacted to his noticeable reduction in his stuttering. “The students at both the high school and the college have reacted positively about my improved speech.” He continues on in this journal submission:

The high school kids have been amazingly respectful (and I think appreciative) that I am stuttering less. These students do ask why I am talking at a slower pace and I explain to them that I am using an electronic device that helps me control my stuttering. I tell them, it is like when someone who is Deaf wears a hearing aid to hear; an individual who stutters can use the device I am using to speak better.

The first level codes I extracted from the post-30 journal submission were (a) improved verbal communication, (b) ease in communicating with students, and (c) increased contributions at faculty meetings. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding

process the following theme was extracted: increased confidence in verbal interpersonal communications at work.

Researcher Notes. The end is near for analyzing all these cases. I cannot believe how fast this flying by. I have started to see what themes emerge across all six cases and I have a good idea how I am going to conceptually display these data. Moving on, Philip's post-30 day journal submission is reaffirming to me because of the increased comfort in speaking in front of an audience without worrying about his stuttering. In addition, the manner in which he explains how the SpeechEasy® device functions to his students was clear and to the point. Yet another SpeechEasy® success story is in the making. I was so hoping to have one participant self-select out of the study. Oh well, I will work with what I have available to me, at the moment. It is time to conclude this writing session and wrap it up until next month when I get the post-60 day journal submission and the day-60 interview data for Philip.

In his post-60 journal submission, Philip was still using the SpeechEasy® device. Like the previous cases, Philip indicated in his journal submission that he expects to continue using the SpeechEasy® device.

The progress I have made in reducing my stuttering using the SpeechEasy® device has been remarkable. In the last 40 years, I have been in and out of speech therapy. The SpeechEasy® device has helped in improving my speech. I hardly stutter anymore. I can talk on the phone comfortably. People do not finish my sentences and I have gained the respect of my colleagues and my students. I wish they had this device 40 years ago as it would have made my life a lot easier and would have saved me a lot of aggravation and heartache.

The first level codes I extracted from the post-60 journal submission were (a) ease of communication because of reduction in stuttering and (b) increased confidence in speaking as an instructor. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level coding process the following theme was extracted: improvement in verbal communication.

Researcher Notes. When I was reading Philip's post-60 journal submission, I was pleased to see the success he was having with the SpeechEasy® device. For someone like Philip, to severely stutter for 52 years and suddenly have that stuttering greatly reduced is a big change for him. Philip is happy to be speaking normally with his colleagues and his students. I hope one day all people who stutter are able to experience what Philip and the other five participants have gone through in using the SpeechEasy® device. As I cited in Chapter 1, speaking fluently is the goal for all individuals who stutter (Bobrick, 1995; Guitar, 2006; O'Donnell, Armson, & Kieft, 2008; Ward, 2006; Wingate, 1997, 2002).

Day 60 Interview—Experiences with the SpeechEasy Device

It was a Saturday morning and I was meeting Philip at his house in Columbus, Georgia. I was wondering if his day-60 interview was going to replicate his post-60 journal submission. The one thought I had in the back of my mind was, "This is the last interview! Thank goodness!" The interview was successful and lasted about 30 minutes. After I completed the interview, I returned to my apartment, transcribed the interview, and started the first level coding. These first level codes extracted from the transcript of Philip's interview were as follows: (a) improved verbal communication, (b) treated with respect, (c) equality, and (d) leading faculty workshops. A second level coding process took place in which these first level codes were grouped together and categorized. From this second level

coding process the following themes were extracted: (a) improved verbal articulation in high pressure situations and (b) treated with respect by colleagues and students. Table 16 illustrates these themes.

Table 16

Extracted Themes from Day 60 Interview with Philip—Experiences with the SpeechEasy Device

First Level Codes	Categories	Theme	Description
(a) improved verbal communication,		(I) Improved Verbal Articulation in	Philip talked about how he has taken leadership roles which require him to speak. Because of his experience with the
(b) treated with respect by co-workers,	(a) Increased Articulation of Speech	High Pressure Situations	SpeechEasy® device, Philip has a real chance at obtaining political office as a union steward. He reported how he is better able to articulate his thoughts. In addition, Philip has
(c) equality,			taken on the role of leading faculty
(d) leading faculty workshops, and	(b) Not Viewed As Weak or Inferior		workshops for the improvement of instruction.
(e) increased participation in debating			Philip talked about how he is treated with the utmost respect by his colleagues and is not belittled or mocked because of his stuttering.
		(II) Treated with Respect by Colleagues and Students	It appears his colleagues see him as a fellow teacher and academic. He reported how he is recognized for his work as a math teacher and is not treated as an inferior.

In the first theme, improved verbal articulation in high pressure situations, Philip described how he was comfortable in his ability to make an argument in a political debate and not worried about whether his stuttering will give a false perception about him. This false perception would be that somehow he is inferior because of his stuttering.

I participated in a political debate for the office of union steward in my department at the university. While I am not a fast talking politician, I articulated my arguments without stuttering. I articulated them so well that I received high marks on the debate score card. I have real shot at political office.

In the second theme, treated with respect by colleagues and students, Philip revealed how his colleagues and students have changed their behavior towards him. Philip is taken more seriously by his colleagues and is praised for his work as teacher. Philip reported that he noticed his students and colleagues are not mocking him anymore for his stuttering.

It is like I am two different people. The first person is the guy who stutters that everybody treats like crap despite otherwise being functional in every other way. The second person is treated with respect and dignity. In all my years, I have never been so accepted by my colleagues. Even my students (both high school and college) listen to me more and are not making faces or mimicking me. I am not the laughing stalk of the faculty anymore. I am not treated like a second-class citizen anymore because of my reduced stuttering.

Summary of Case #6: Philip

Throughout this case, all data collected had extracted themes based on first and second level coding analysis (cf. Merriam, 1998). It was evident in this case analysis that Philip's experience with using the SpeechEasy® device was successful. Since beginning his

use of the SpeechEasy device, Philip has been more comfortable speaking at faculty meetings and leading faculty workshops. In Philip's case, leading the faculty workshops was the only element of workplace education obtained despite concerted probing and prompting efforts made by the researcher. Also, he finds it easier to communicate to all his students. It is apparent that he has gained the admiration and respect of his students and colleagues. Like the other participants, Philip is very satisfied with the SpeechEasy® device.

Cross-Case Analyses

This section of Chapter Four describes the cross-case analyses. As previously mentioned in Chapter Three, by using cross-case analysis, the researcher attempts to extract themes, build categories, and develop concepts based on the six cases. Unlike individual case analysis, cross-case analysis facilitates pattern matching from all the cases (Merriam, 1998; Yin, 2003). This type of analysis integrates all the themes from the individual cases to develop overarching themes and categories (Merriam, 1998). These overarching categories and themes developed from the cross-case analyses provide needed data for theory building (Merriam, 1998).

All the data collection points in all six cases were compared and analyzed using Merriam's (1998) cross-case analysis technique. In addition, the extracted first level codes, categories, and themes of the cross-case analysis from each of the data collection points are displayed as figures. Then, there is a brief summary of each figure that presents the overarching first level codes, categories, and themes. Finally, there is a summary of the cross-case analysis at the end of the section concluding Chapter Four.

Day One Interviews—Pre-SpeechEasy Device Use

Several themes emerged from the cross-case analysis of the Day One interviews.

These overarching themes were derived from the extracted first level codes, categories, and themes of the Day One interviews for all six cases. Figure 13 illustrates the summary of the first level codes visually. Figure 14 illustrates the summary of the categories visually. Figure 15 illustrates the summary of the themes visually.

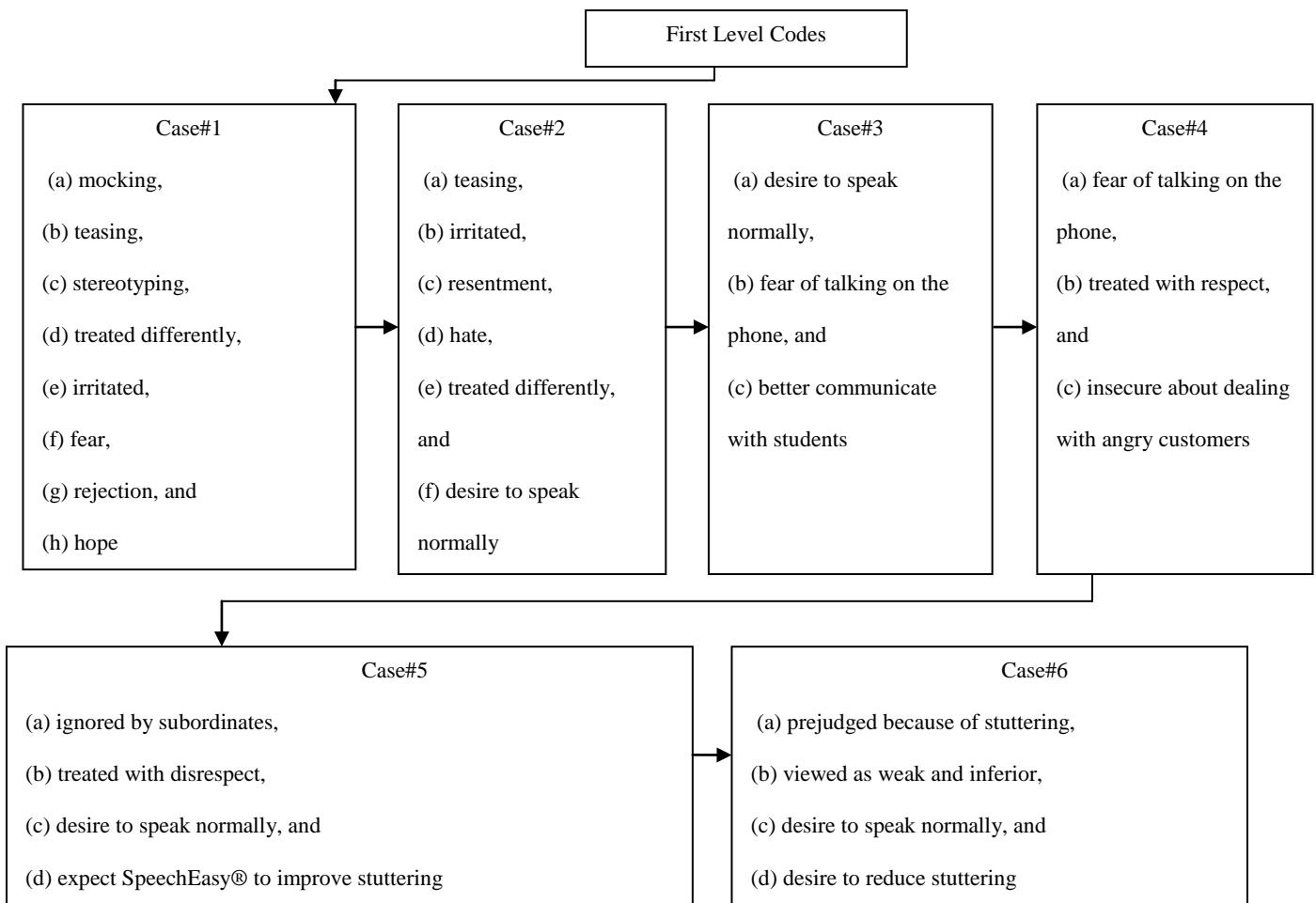


Figure 13. Diagram of cross-case analysis of first level codes-day one interviews—experiences with the SpeechEasy Device.

As shown in Figure 13, the first level codes between all the participants were similar to each other. Each participant reported how they were mocked by their co-workers, expressed difficulty interfacing with other people face-to-face or on the phone, and how irritated these individuals were when they were rejected by their co-workers because of their stuttering. As a whole, all the participants wanted to reduce their stuttering not only to get ahead professionally but for intrinsic reasons. Overall, the participants expressed how they want to talk without disfluencies like everybody else around them.

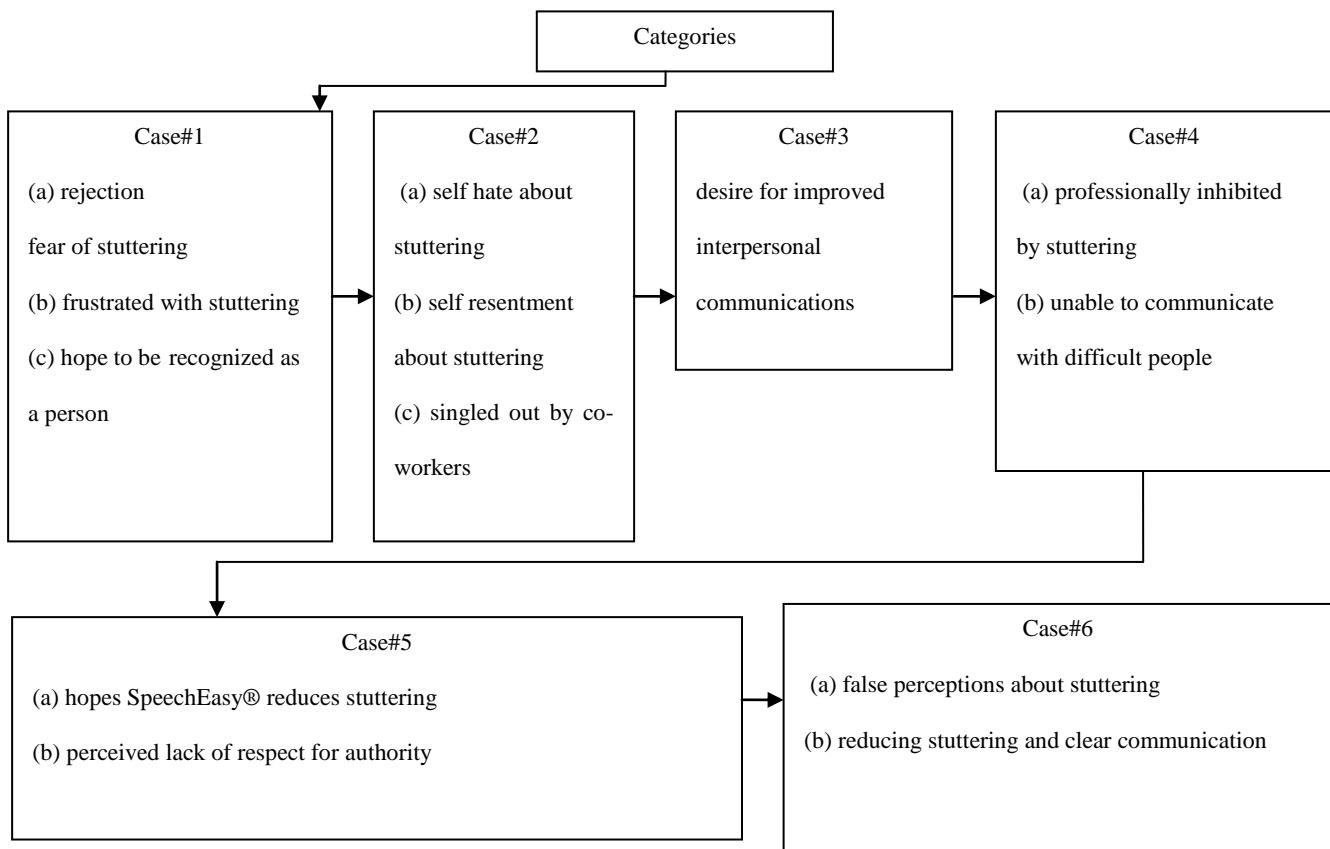


Figure 14. Diagram of cross-case analysis of categories-day one interviews—experiences with the SpeechEasy Device.

As shown in Figure 14, these overarching categories between all the participants were similar to each other. Based on these categories, it appears the participants in this study were

frustrated with their inability to control their stuttering at work. Clearly, the categories revealed how the participants were professionally inhibited by their stuttering.

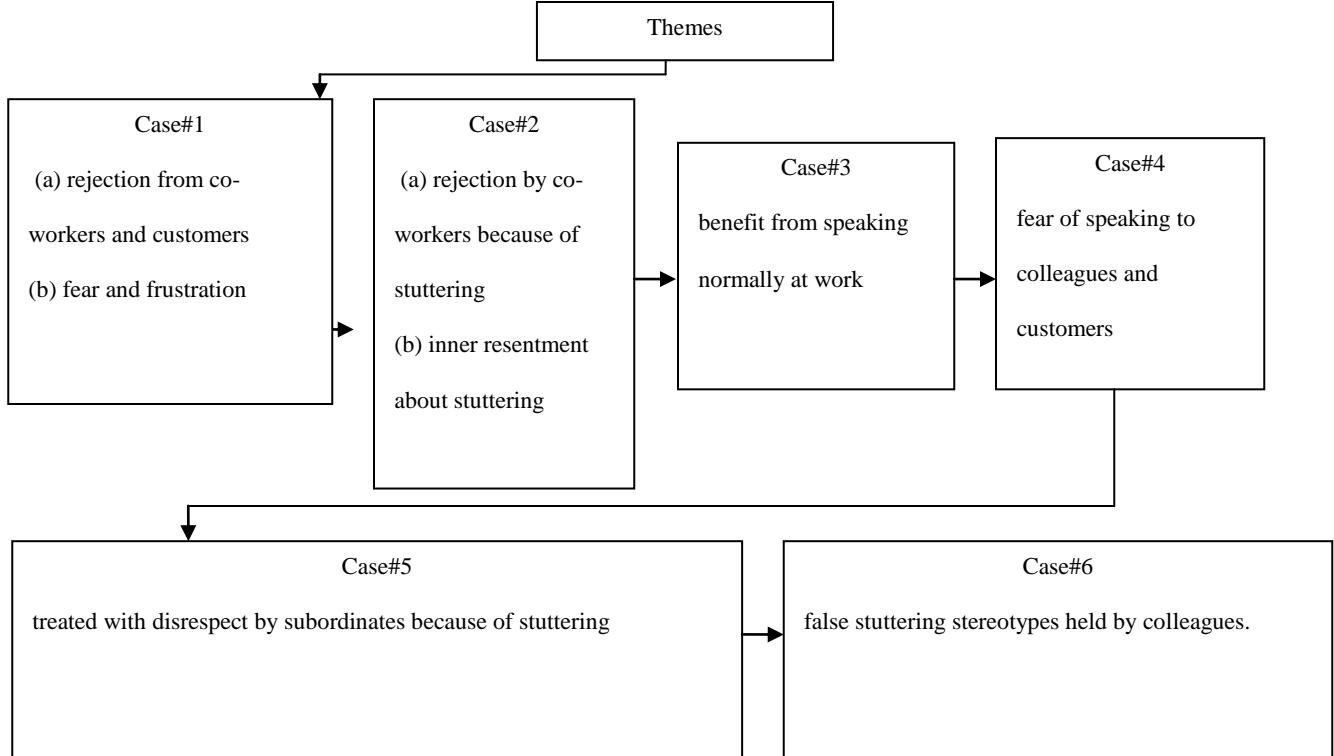


Figure 15. Diagram of cross-case analysis of themes-day one interviews—experiences with the SpeechEasy Device.

As shown in Figure 15, these overarching themes among all the participants were similar to each other. Overall, the participants revealed that using the SpeechEasy® device will hopefully benefit them at their place of employment. In addition, by using the SpeechEasy® device at their place of employment, the fear and frustration surrounding these participants' stuttering will hopefully subside. In summary, there was a hope expressed by the participants that the SpeechEasy® device would allow them to be appreciated for the

contributions to their employer and not to be rejected by their co-workers because of their stuttering.

Online Journals Post-10 Day—Experiences with the SpeechEasy Device

Overarching codes, categories, and themes emerged from the cross-case analysis of all the online journals. These overarching themes were derived from the extracted first level codes, categories, and themes of the post-10 online journal submissions for all six cases. Figure 16 illustrates the summary of the first level codes visually for the post-10 online journal submissions. Figure 17 illustrates the summary of the categories visually for the post-10 online journal submissions. Figure 18 illustrates the summary of the themes visually post-10 online journal submissions.

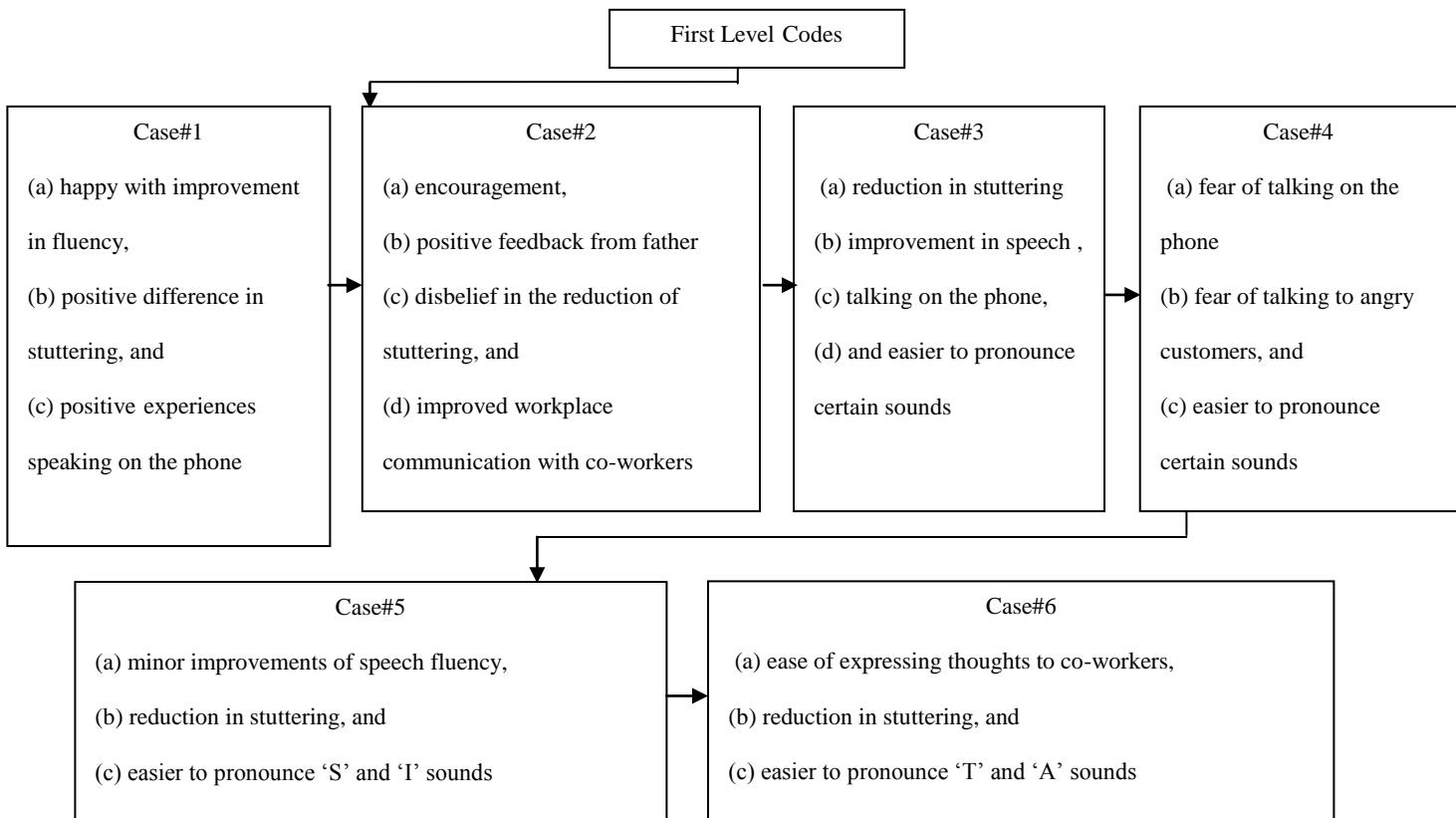


Figure 16. Diagram of cross-case analysis of first level codes post-10 journals—experiences with the SpeechEasy Device.

As shown in Figure 16, the first level codes between all the participants for the Post-10 journal submission noted varying levels of reduction in the participants' stuttering within 10 days of employing the SpeechEasy®device. The majority of the cases revealed an overall noticeable improvement in their stuttering, communicating with co-workers, ease of pronouncing certain sounds, clearer speech when talking on the phone, and dealing with difficult customers. Case #4, though, reported how he still had a perceived fear of talking on the phone and interacting with angry customers.

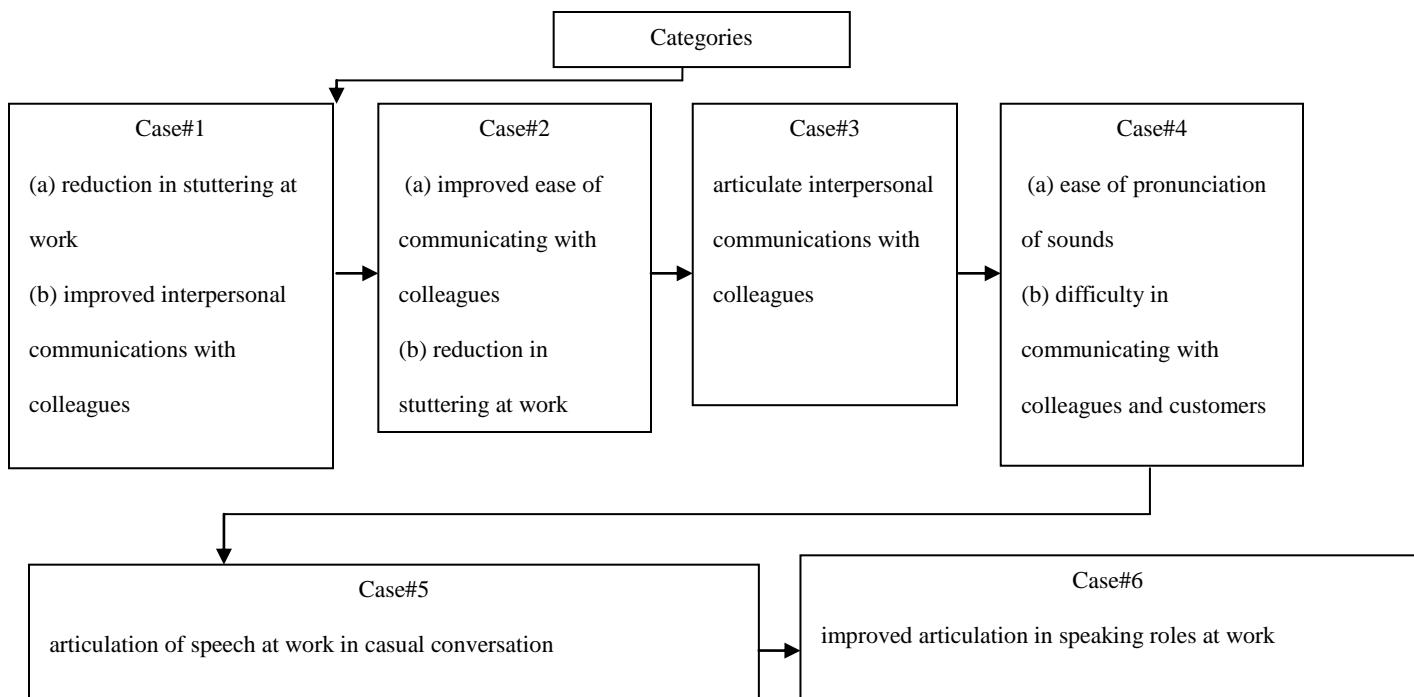


Figure 17. Diagram of cross-case analysis of categories post-10 journals—experiences with the SpeechEasy Device.

As shown in Figure 17, these overarching categories between all the participants were similar to each other. Based on these categories, it appears the participants in this study experienced a reduction in their stuttering and ease of pronunciation of specific sounds. The reduction in the participants' disfluencies directly attribute to the improvement in the

interpersonal verbal communication with co-workers within 10 days of employing the SpeechEasy®device.

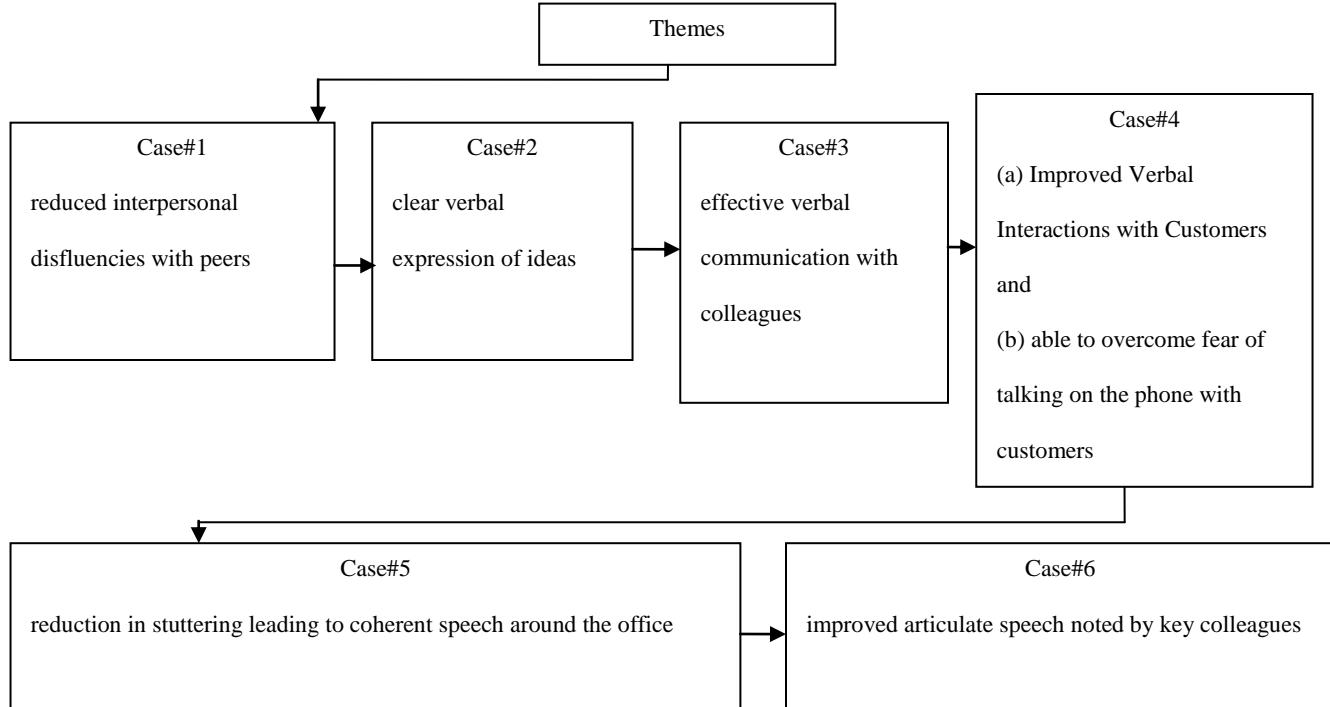


Figure 18. Diagram of cross-case analysis of themes post-10 journals—experiences with the SpeechEasy Device.

As shown in Figure 18, these overarching themes revealed a reduction in the participants' stuttering at work within 10 days of employing the SpeechEasy®device. The participants revealed how they noticed a reduction in their stuttering since they started using the SpeechEasy® device 10 days earlier. The participants expressed how they perceive themselves as being more effective in articulating their thoughts both in casual conversation and in formalized settings such as giving a speech. In spite of the reported face-to-face verbal interactions, Case #4 expressed how he still feared talking on the phone with customers and would not do it under any circumstances.

Online Journals Post-20 Day—Experiences with the SpeechEasy Device

The same process of analysis performed in the post-10 day journal submission was employed in the cross-case analysis of the post-20 day online journal submissions. These overarching themes were derived from the extracted first level codes, categories, and themes of the post-20 online journal submissions for all six cases. Figure 19 illustrates the summary of the first level codes visually for the post-20 online journal submissions. Figure 20 illustrates the summary of the categories visually for the post-20 online journal submissions. Figure 21 illustrates the summary of the themes visually for the post-20 online journal submissions.

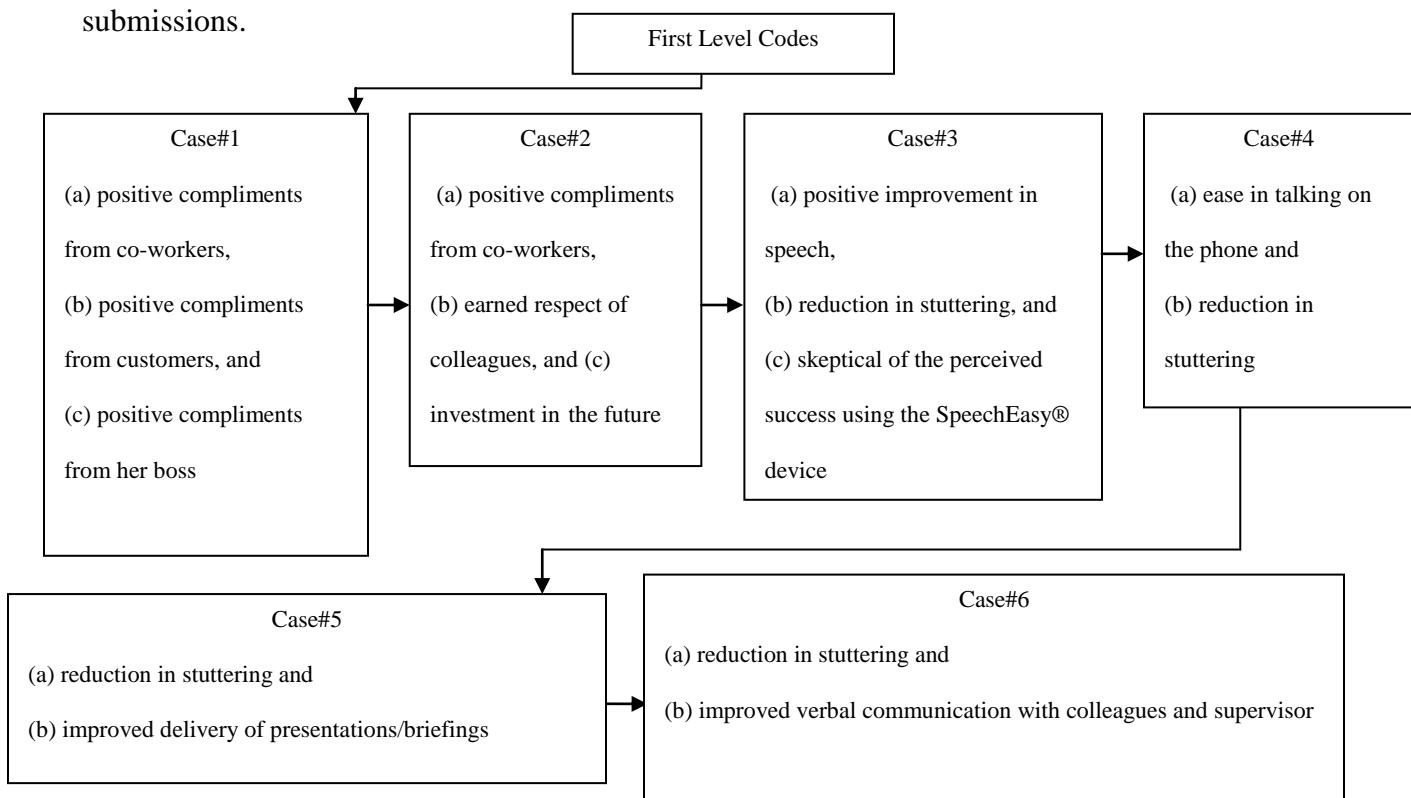


Figure 19. Diagram of cross-case analysis of first level codes post-20 journals—experiences with the SpeechEasy Device.

As shown in Figure 19, the first level codes between all the participants for the Post-20 journal submission noted varying levels of reduction in the participants' stuttering within

20 days of employing the SpeechEasy® device. This is similar to what was revealed in the post-10 journal cross-case analysis. Three of the six cases discussed in their journal submissions the positive feedback received from colleagues, supervisors, and customers related to the reduction in their stuttering. One participant did reveal his skepticism related to the reported success using the SpeechEasy® device in the last 20 days. This case was concerned that her reduction in stuttering was only temporary. Specifically, Case #5 reported how she was more effective in delivering presentations to her subordinates and members of management.

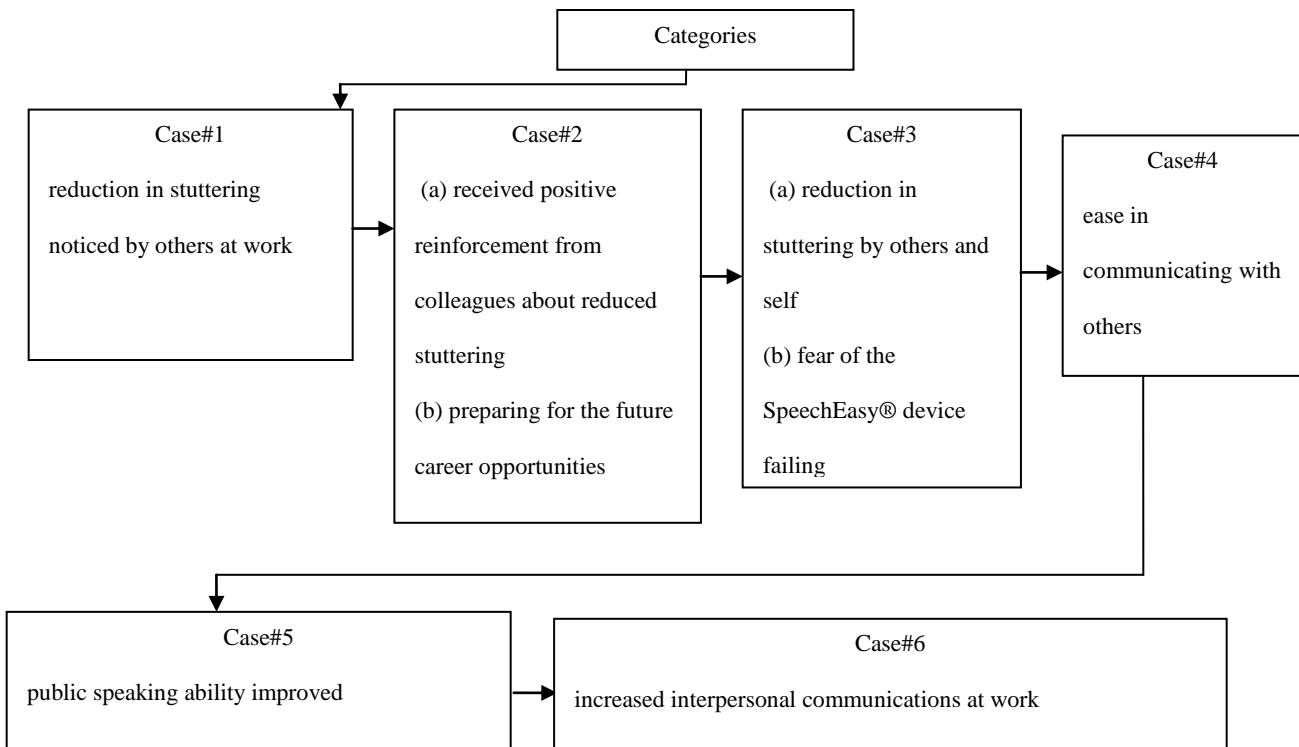


Figure 20. Diagram of cross-case analysis of categories post-20 journals—experiences with the SpeechEasy Device.

As shown in Figure 20, all the participants reported an increased reduction in their stuttering at each of their respective places of employment within 20 days of employing the

SpeechEasy®device. The majority of the participants reported how their colleagues and supervisors praised them for a reduction in stuttering. Overall, each of the participants experienced varying levels of increased activities in interpersonal communications. Specifically, Case #6 found it was easier for him to engage in intense academic discussions with his colleagues and students. Case #5 found it was easier for her to debrief her subordinates when it was necessary to verbally communicate information regarding productivity, monthly accident reports, inspection reports, and other work-related information.

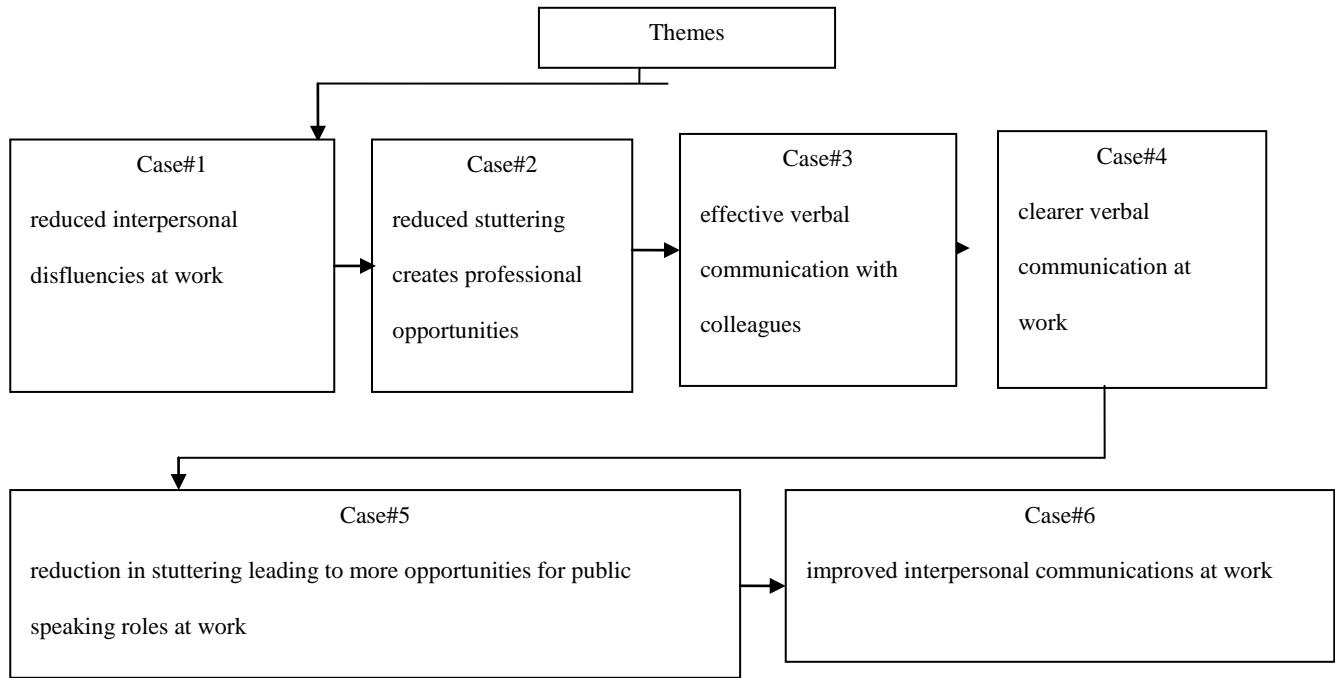


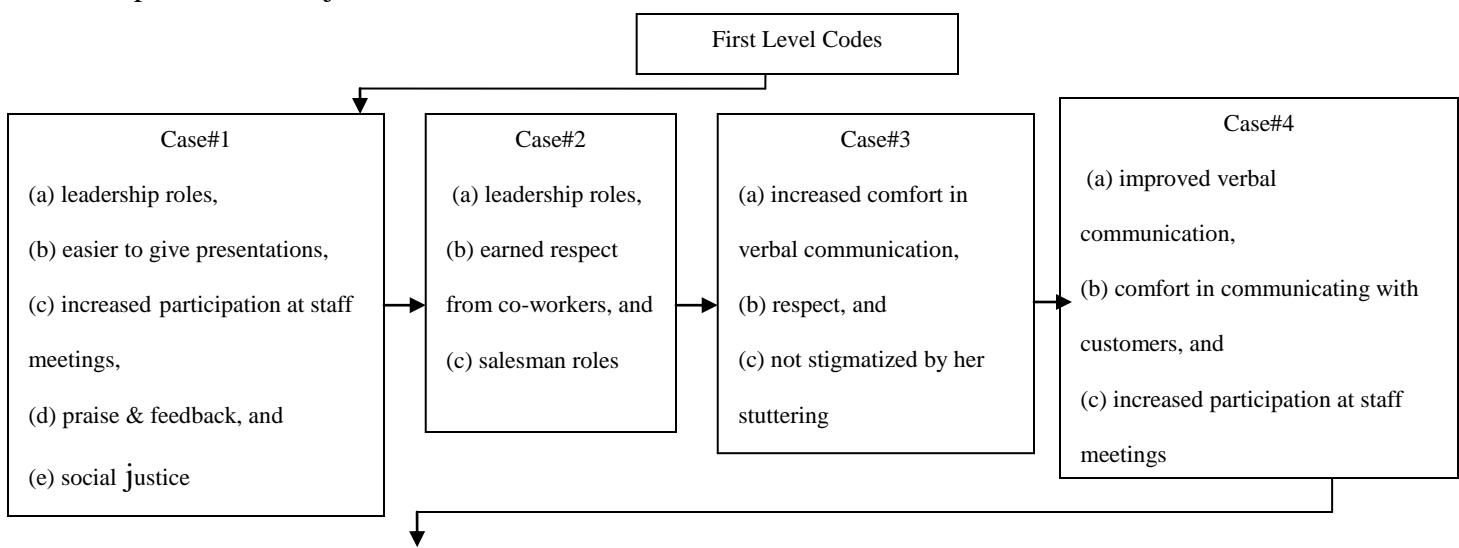
Figure 21. Diagram of cross-case analysis of themes post-20 journals—experiences with the SpeechEasy Device.

Similar to the post-10 day cross-case analysis, the post-20 cross-case analysis of the themes as shown in Figure 21 revealed a reduction in the participants' stuttering at work within 20 days of employing the SpeechEasy®device. Some of the participants reported how their reduction in stuttering made more professional opportunities available to them. Overall,

the participants reported their verbal communication was clearer than it was prior to using the SpeechEasy® device. The improved fluency in their communication has made interacting with colleagues at work less stressful for all the participants.

Online Journals Post-30 Day—Experiences with the SpeechEasy Device

The same process of analysis performed in the post-10 and post-20 day journal submission was employed in the cross-case analysis of the post-30 day online journal submissions. These overarching themes were derived from the extracted first level codes, categories, and themes of the post-30 online journal submissions for all six cases. Figure 22 illustrates the summary of the first level codes visually for the post-30 online journal submissions. Figure 23 illustrates the summary of the categories visually for the post-30 online journal submissions. Figure 24 illustrates the summary of the themes visually for the post-30 online journal submissions.



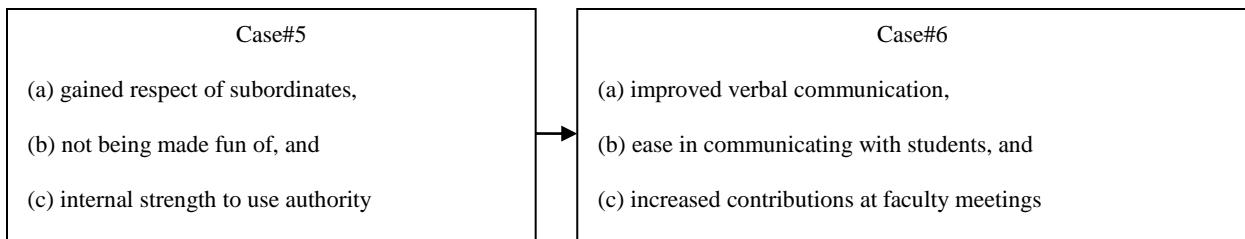


Figure 22. Diagram of cross-case analysis of first level codes post-30 journals—experiences with the SpeechEasy Device.

As shown in Figure 22, the first level codes between all the participants for the Post-30 journal submissions revealed a reported increased comfort in verbal communication at work within 30 days of employing the SpeechEasy® device. The participants reported how much easier it was to give presentations or to talk in other large group settings like staff and faculty meetings. In addition, the participants reported how they have gained the respect of their colleagues at work because of the improved fluency in their verbal communication.

Case #2 reported how he was not afraid to take on the role of salesman at his job because of his reduced stuttering. From the perspective of Case #1, her reduced stuttering righted a perceived wrong in her life. For Case #1, her stuttering was the wrong that was righted in her life from using the SpeechEasy® device. For Case #5, the reduction in her stuttering brought on from using the SpeechEasy® device increased her self-confidence to use her authority as a supervisor to manage and lead her subordinates.

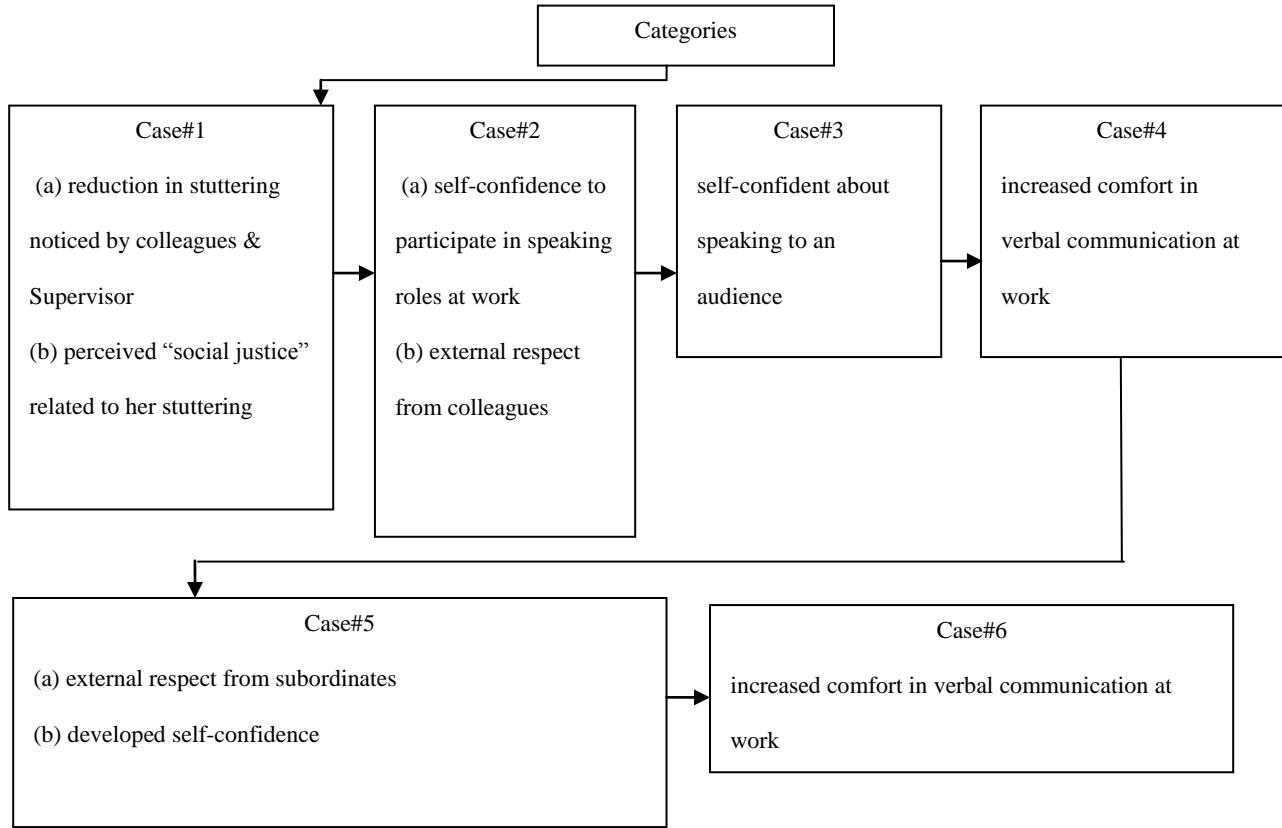


Figure 23. Diagram of cross-case analysis of categories from the post-30 journals—experiences with the SpeechEasy Device.

As shown in Figure 23, all the participants except for Cases #1 and #5 reported how they developed self-confidence and increased comfort in articulating their thoughts and ideas in group settings such as staff meetings, classrooms, and training environments within 30 days of employing the SpeechEasy® device. In Case #1, the participant revealed throughout her journal entry how she perceived a right was being wronged from her successful experience in using the SpeechEasy® device. In Case #5, the participant developed the self-confidence needed to assert herself as the supervisor. By asserting herself as the authority, she eventually gained the respect of her subordinates.

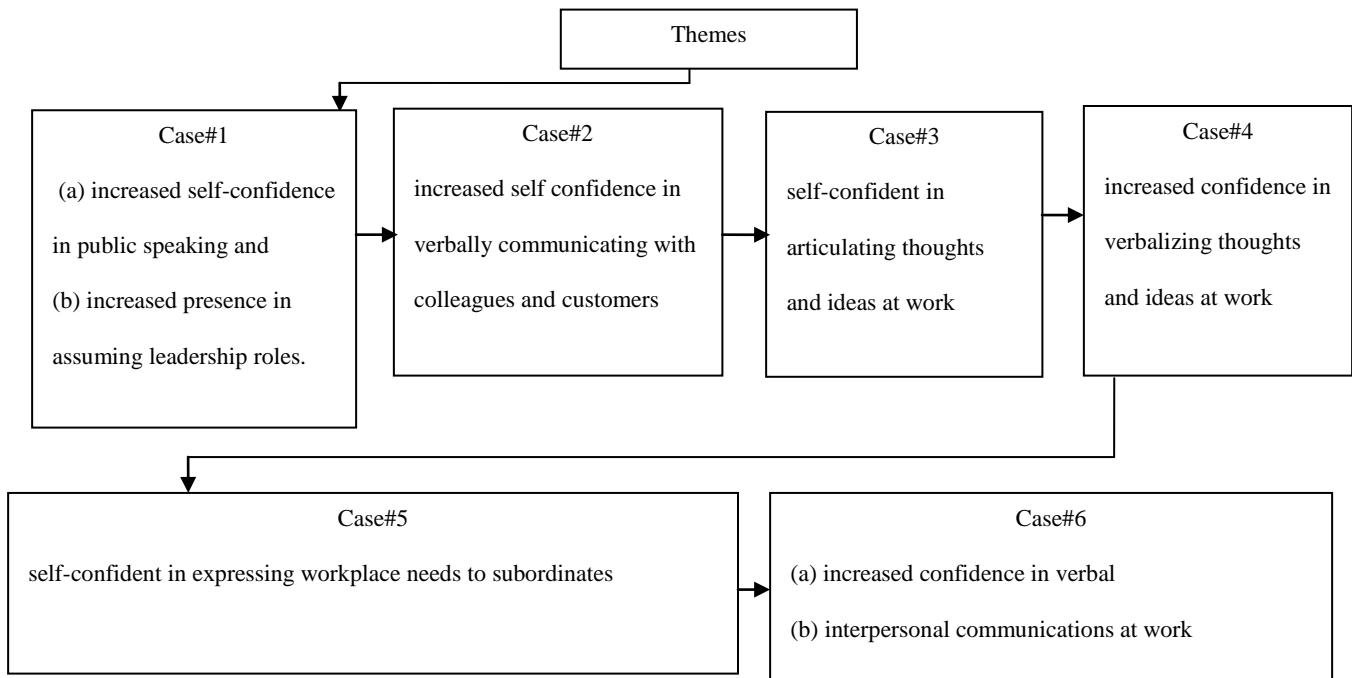


Figure 24. Diagram of cross-case analysis of themes post-30 journals—experiences with the SpeechEasy Device

Figure 24 illustrates that with the exception of the first case, all the participants revealed an increase in self-confidence in their ability to articulate their thoughts and ideas with their peers, subordinates, and superiors at work within 30 days of employing the SpeechEasy® device. The reported increased ease of communicating ideas and concepts was attributed by the participants' reduction in stuttering from using the SpeechEasy® device. The participants found the reduction in stuttering derived from using the SpeechEasy® device was made easier for them to be contributors at staff meetings and training sessions, and as a facilitator of group discussions.

Online Journals Post-60 Day—Experiences with the SpeechEasy Device

The same process of analysis performed in the previous analyses of journal submissions was employed for the cross-case analysis of the post-60 day online journal submission. These overarching themes were derived from the extracted first level codes,

categories, and themes of the post-60 online journal submissions for all six cases. Figure 25 illustrates the summary of the first level codes visually for the post-60 online journal submissions. Figure 26 illustrates the summary of the categories visually for the post-60 online journal submissions. Figure 27 illustrates the summary of the themes visually for the post-60 online journal submissions.

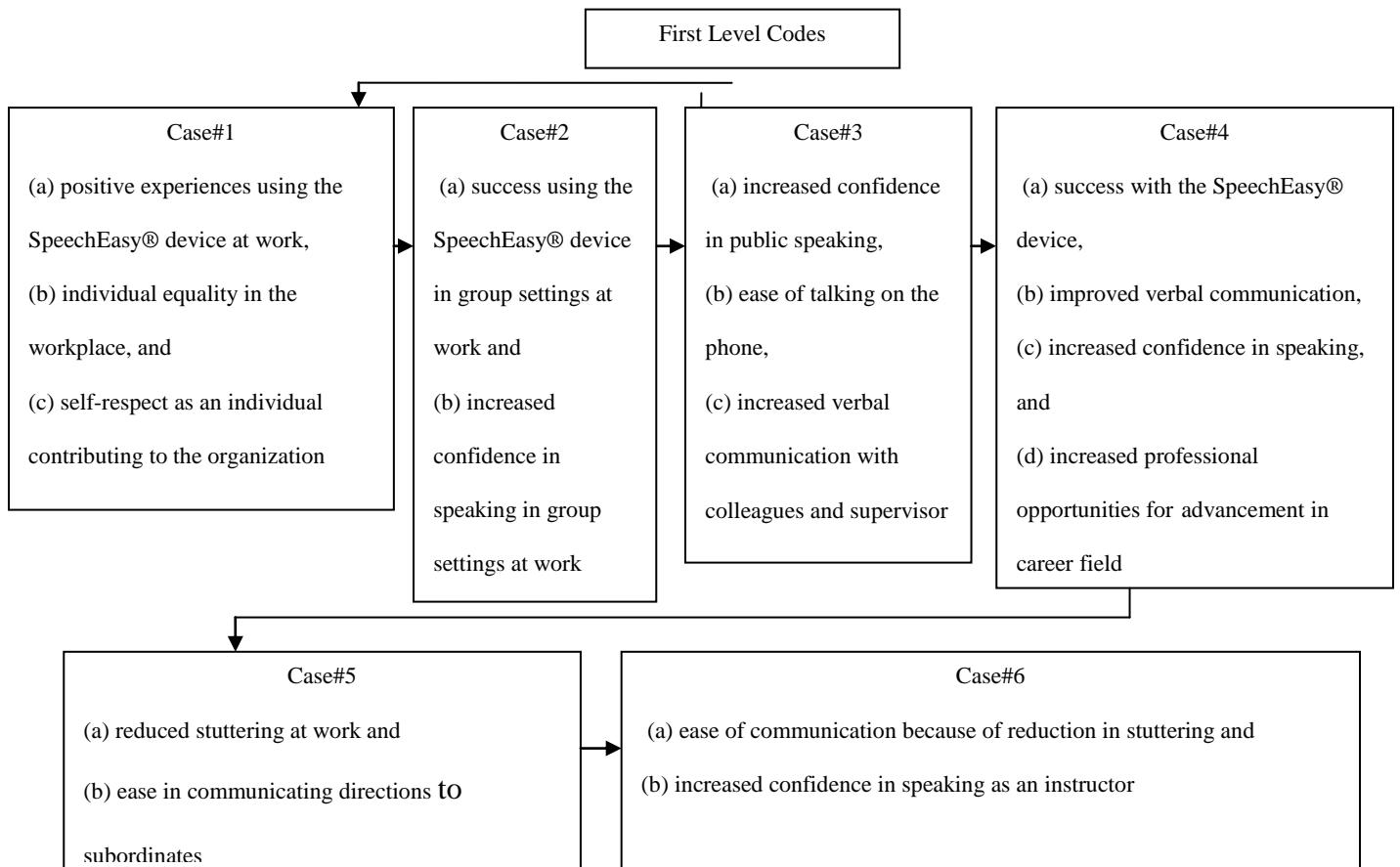


Figure 25. Diagram of cross-case analysis of first level codes post-60 journals—experiences with the SpeechEasy Device.

Figure 25 illustrates that all participants revealed an increased self-confidence in communicating with others at each of their respective jobs because of the reduction in their stuttering derived from the SpeechEasy® device within 60 days of employing the SpeechEasy® device. For all the participants, this newfound confidence and ease in

articulating speech has provided the participants with the opportunity to be evaluated for the quality of their contributions to their organizations without being judged because of their stuttering. As shown in Figure 25, the reduction in stuttering experienced by the participants from using the SpeechEasy® device revealed an overall reduction of speech disfluencies at work. As reported by the participants in their post-60 journals, the reduced disfluencies have made it easier for the participants to accomplish their required daily tasks in order to be successful at their jobs.

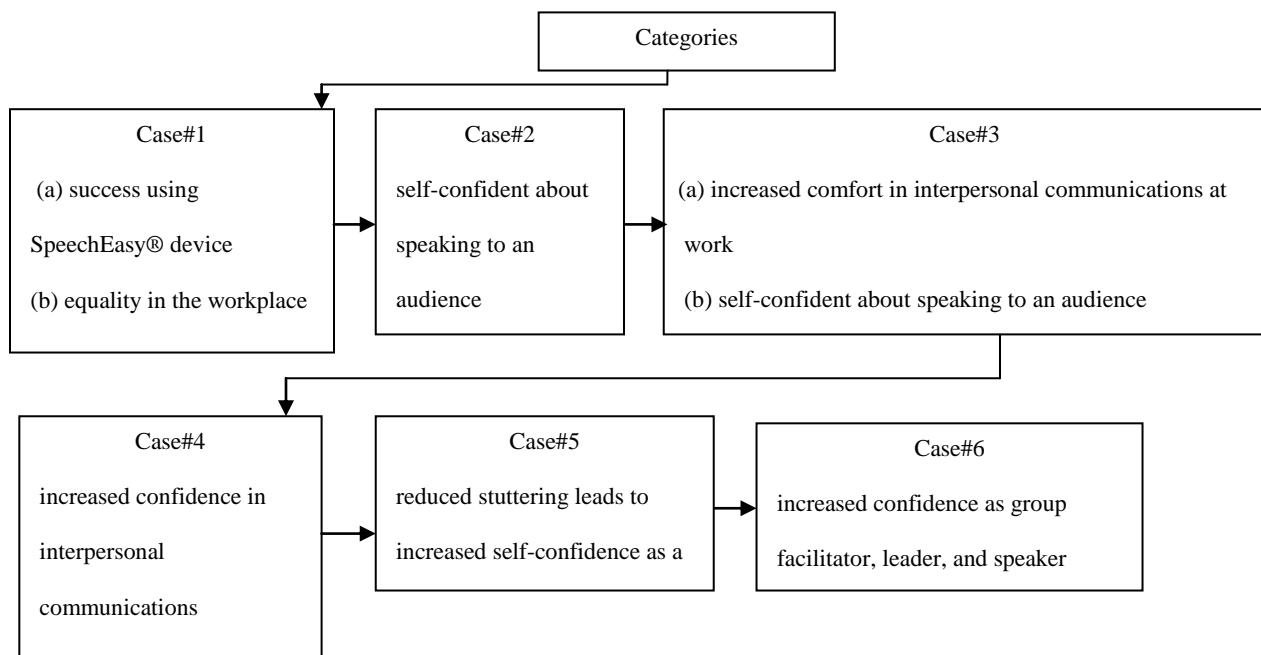


Figure 26. Diagram of cross-case analysis of categories post-60 journals—experiences with the SpeechEasy Device.

As shown in Figure 26, Cases #2, #3, #4, and #6 revealed in their journal submissions an increase confidence related to speaking to others in various roles at their jobs within 60 days of employing the SpeechEasy® device. Case #6 found he was more confident as a group facilitator for his students. Likewise, Cases #2, #3, and #4 developed the needed confidence

to speak in front of an audience and not have to worry about whether or not their stuttering will create noise in the communication channel between the speaker and the audience.

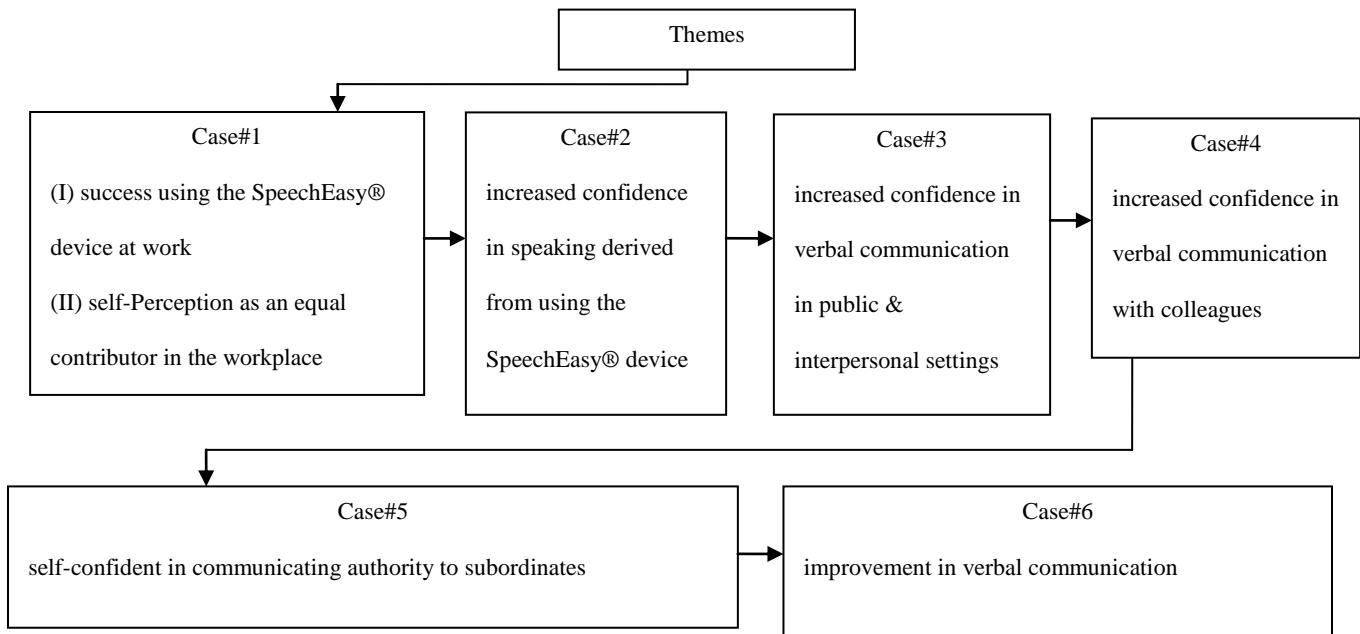


Figure 27. Diagram of cross-case analysis of themes post-60 journals—experiences with the SpeechEasy Device.

Figure 27 illustrates that all the participants within post-60 day interviews cross-case analysis provided details on their reported increased confidence in verbal communication with their colleagues and supervisors at work within 60 days of employing the SpeechEasy® device. All the participants discussed in their journal submissions how they found it easier to put their thoughts and ideas into clear cohesive speech. Case #1 reported how she perceived her improved speech fluency as the primary reason she is an equal contributor at various settings at work. These settings include staff meetings, presentations, forums, conferences, and leading/participating in training sessions.

Day 60 Interviews—Experiences with the SpeechEasy Device

Overarching codes, categories, and themes emerged from the cross-case analysis of all the Day 60 interviews. These overarching themes were derived from the extracted first level codes, categories, and themes of the Day 60 interviews for all six cases. The same process of analysis performed in the previous analyses of journals and in the Day One interviews was employed for the cross-case analysis of the Day-60 interviews. Several themes emerged from the cross-case analysis of the Day 60 interviews. The same process of analysis that occurred in the Day One interviews and the online journal submissions was replicated for the Day 60 interviews. These overarching themes were derived from the extracted first level codes, categories, and themes of the Day 60 interviews for all six cases. Figure 28 illustrates the summary of the first level codes visually. Figure 29 illustrates the summary of the categories visually. Figure 30 illustrates the summary of the themes visually.

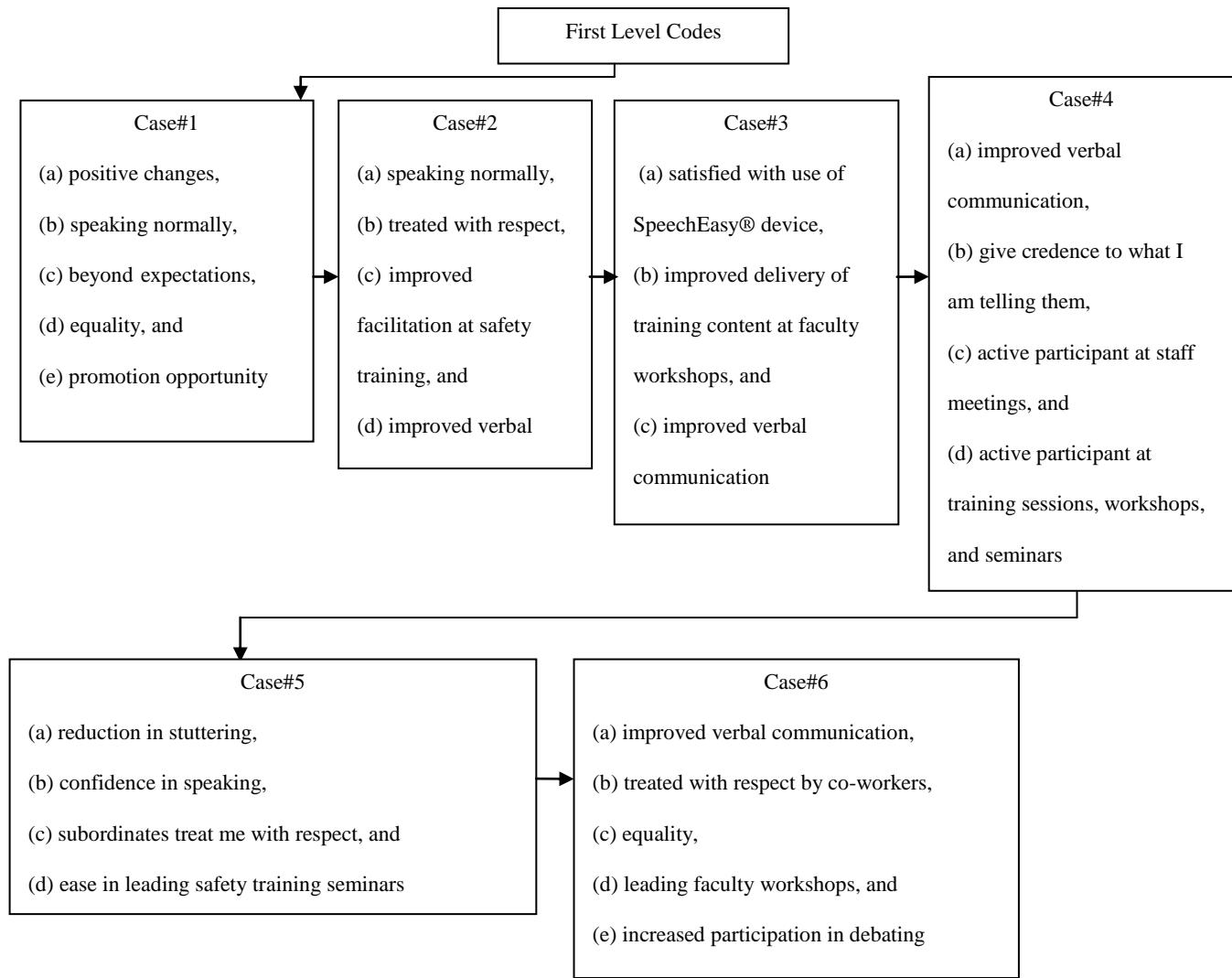


Figure 28. Diagram of cross-case analysis of first level codes post-60 interviews—experiences with the SpeechEasy Device.

As displayed in Figure 28, all the participants reported positive changes in the reduction in the fluency in their speech within 60 days of employing the SpeechEasy® device. Cases #1 and #2 reported during the interviews that they were speaking with little to no disfluencies in their speech. In Cases #2, #4, and #6, the participants reported how they were given credit for jobs well done and they are not being overlooked for the work they put into projects and other tasks. Case #4 reported how he has taken more of an active speaking role at staff meetings and training sessions. The other participants reported varying degrees

of their increased active participation at staff meetings and training sessions. Case #3 reported how she is a better facilitator because of the reduction in her disfluencies derived from the SpeechEasy® device.

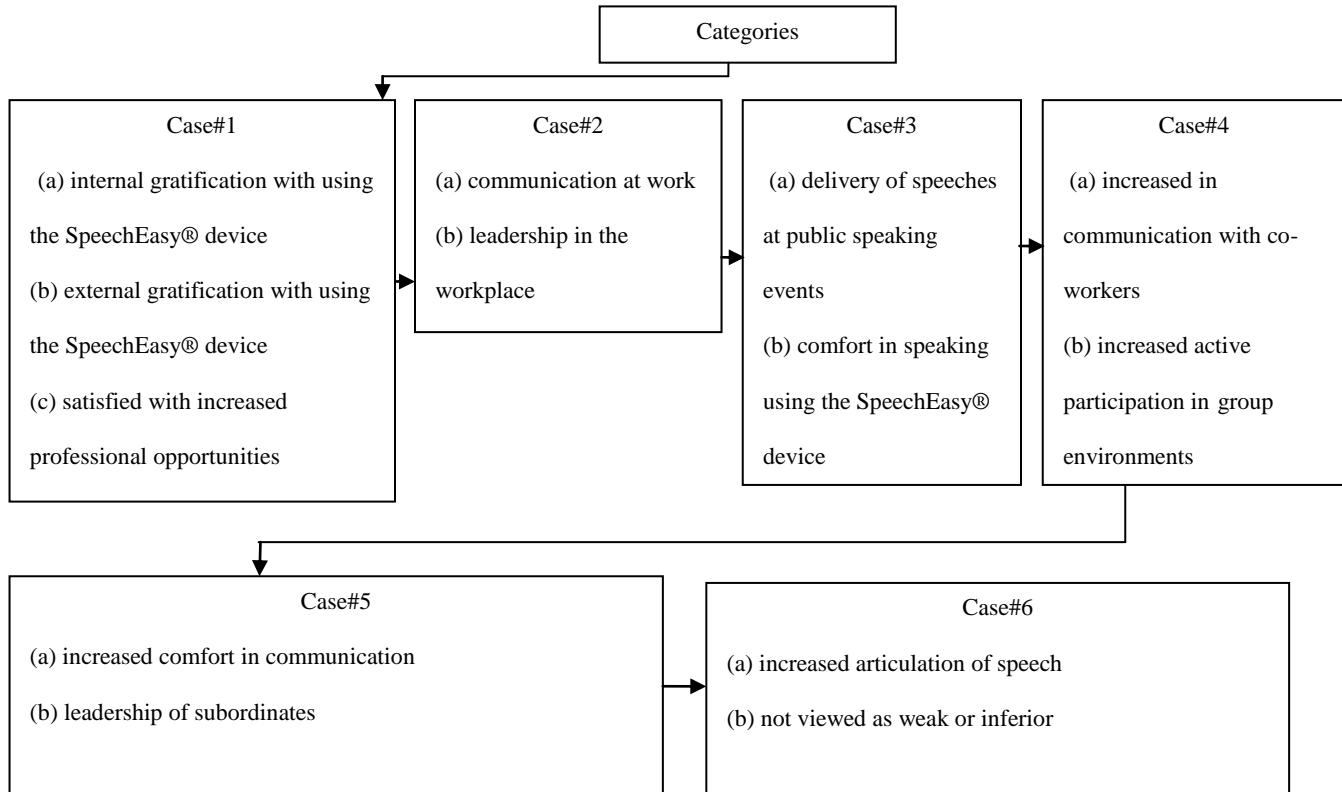


Figure 29. Diagram of cross-case analysis of categories post-60 interviews—experiences with the SpeechEasy Device.

As shown in Figure 29, the participants have experienced life-altering changes from using the SpeechEasy® device. The participants have increasingly accepted leadership responsibilities that require significant verbal communication with colleagues, subordinates, customers, and supervisors within 60 days of employing the SpeechEasy® device. The participants throughout each of the Day 60 interviews suggested that they are not treated like they are inferiors to their own colleagues. Rather, the participants' articulate speech derived from the SpeechEasy® device has afforded them with many opportunities within their

respective organizations. These opportunities included promotions, leading a training seminar, giving public speeches and presentations to the senior management, and accepting responsibilities as a salesman and negotiator for contracts. Overall, the categories reveal both an internal and external satisfaction from the participants with the SpeechEasy® device.

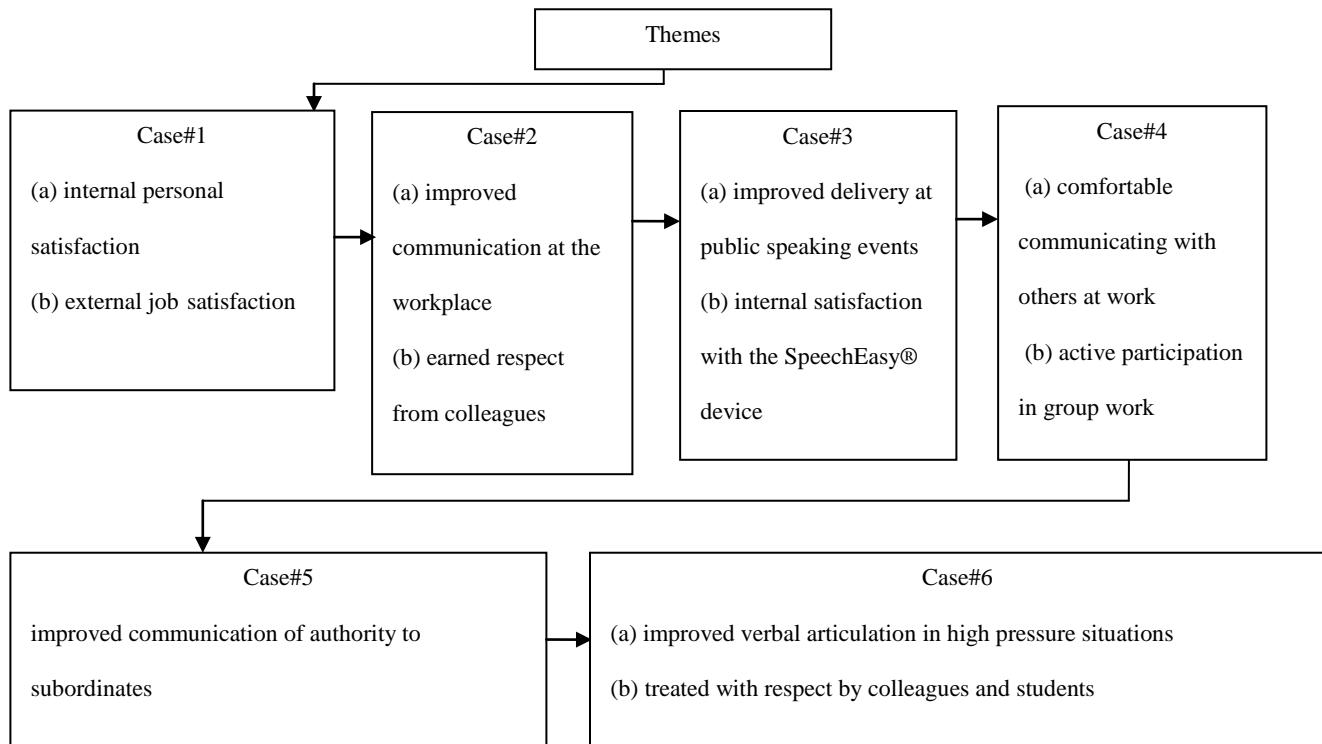


Figure 30. Diagram of cross-case analysis of themes Post-60 interviews—experiences with the SpeechEasy Device

As illustrated in Figure 29, all the participants reported near elimination of their stuttering at work within 60 days of employing the SpeechEasy® device. The improved verbal communication derived from using the SpeechEasy® device has provided these participants with an avenue for increasing their participation in group work by assuming roles that required significant public speaking. In each of the Day 60 interviews, the participants reported an overall satisfaction and success using the SpeechEasy® device.

Cases #1 and #3 reported an internal satisfaction using the SpeechEasy® device. They both talked about how meaningful and personal their success using the SpeechEasy® device was to them. Cases #2, #6, and to some degree Case #5, were able to gain the respect from their colleagues and subordinates because of the reduction in their stuttering brought on from using the SpeechEasy® device. These participants reported how they were more comfortable and ready to assume leadership roles in group settings and other various related tasks that required public speaking to an audience.

Summary of Internal and Cross-Case Analysis

To summarize, both the in-case and cross-case analysis for this study revealed the participants were successful in employing the SpeechEasy® device to reduce their stuttering. The participants' reduction in their stuttering brought on from employing the SpeechEasy® device aided in gaining respect for these participants' contributions to their respective organizations and not having their stuttering hinder their contributions. In addition, the participants' reduced stuttering brought on by their use of the SpeechEasy® device created promotional opportunities for these individuals within their organizations. Also, using the SpeechEasy® device to reduce their stuttering at work allowed the participants to become active in their organizations and not externally or self-restrict themselves to responsibilities that do not require speaking in front of a large audience. Moreover, the participants were reportedly at ease in tasks that required public speaking because of their reduction in stuttering. Overall, the participants were successful in reducing their stuttering in their employment and workplace education activities because of their use of the SpeechEasy® device. Finally, both the internal and cross-case analysis revealed that the SpeechEasy® device assisted the participants in this study in advancing their careers. Most of the

participants in this study were offered and accepted promotions into more visible jobs such as corporate vice-presidency, negotiating work contracts for construction sites, and other occupations within their organization that required articulate speech as a job requirement.

CHAPTER 5

DISCUSSION OF THEMES AND FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Overview of the Study

This study addressed the issue brought forward by Lincoln, Packman, and Onslow (2006) regarding the need for a study to gauge an individual stutterer's speech in everyday life using an anti-stuttering device like SpeechEasy®. Specifically, this study explored how the SpeechEasy® device impacted the participants in the context of the workplace and workplace education. This study did reveal positive outcomes for the six adult participants' experiences regarding the efficacy of the SpeechEasy® device. Specifically, this study revealed that the participants reduced their stuttering by using the SpeechEasy® device. The reduction in their stuttering brought about positive changes in psychosocial identity. As reported by the participants, the reduction in their stuttering aided in the refining of the language component of their interpersonal competence (Chickering, 1969; Chickering & Reisser, 1993). Language competence is required in order to lead a group effectively. The change in the participants' language competence allowed them opportunities to develop mature interpersonal relationships with their co-workers, supervisors, customers, and their subordinates. The participants' clarity in their speech allowed them to move their careers forward by taking on roles that required articulate speech.

The development of the participants' language component of their interpersonal competence facilitated positive change in their interpersonal communications (Chickering, 1969; Chickering & Reisser, 1993). Specifically, the enhancement in the language component of their interpersonal competence was needed in order to begin changing their self concepts. Specifically, these changes were related to all five components of effective interpersonal communications (Jones & Pfieffer, 1974). As the participants' self concepts evolved they allowed themselves to become more effective listeners. The participants were no longer distracted by the channel noise that they were being prejudged because their stuttering (Bolton, 1986; Fujishin, 2001; Jones & Pfieffer, 1974; Rogers, 1961). Not being distracted by channel noise helped the participants to decode messages accurately. Being able to decode messages accurately allowed for the correct encoding of response messages. Thus, the participants were able to clearly articulate their thoughts and concepts to their co-workers. Being able to articulate their thoughts facilitated opportunities for coping with feelings and self disclosure (Jones & Pfieffer, 1974).

Discussion of Themes

This section provides a discussion of the overarching themes extracted during the cross-case analysis in the previous chapter. As previously noted in Chapter 4, the overarching themes extracted from the cross-case analysis are (a) internal personal satisfaction, (b) external job satisfaction, (c) improved communication at the workplace, (d) earned respect from colleagues, (e) improved delivery at public speaking events, (f) internal satisfaction with the SpeechEasy® device, (g) comfortable communicating with others at work, (h) active participation in group work, (i) improved communication of authority to subordinates, (j) improved verbal articulation in high pressure situations, (k) treated with respect by

colleagues and students, and (k) increased opportunities for job advancement. To simplify the contents of this chapter, similar themes were merged to develop overall themes. (See Figure 31, p. 159.) Based on these merged themes, a model was developed about the effectiveness of the SpeechEasy® device as it pertains to the workplace and workplace education. (See Figure 32, p. 160.) The purpose of workplace education is to improve individual on-the-job performance. Workplace education takes several forms. The most common examples of workplace education are training seminars, workshops, or other training sessions that are work related (Rothwell & Kazanas, 2003). As a note, this chapter is relatively short because the extensive cross-case analysis in the previous chapter provides a full description for each of these overarching themes

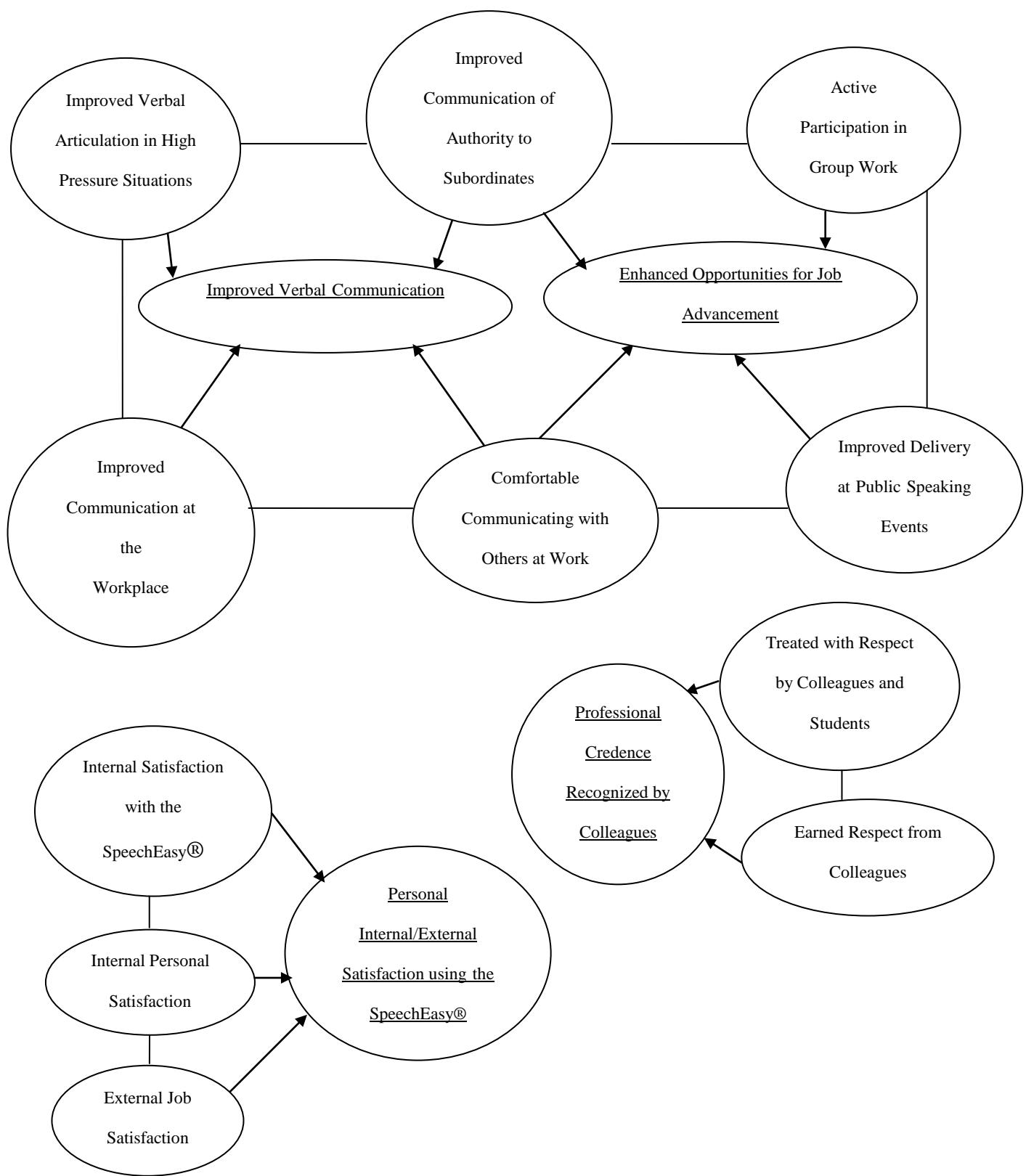


Figure 31. Diagram of overall merged themes.

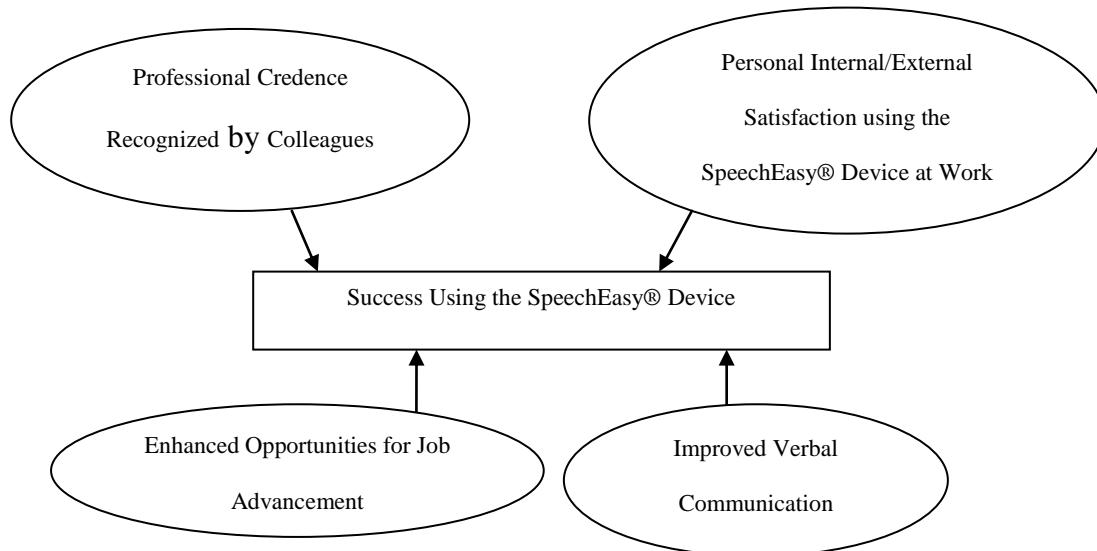


Figure 32. Diagram of success with SpeechEasy® device model

Analysis of Three Overarching Themes

The three extracted overarching themes (a) personal internal/external satisfaction using the SpeechEasy® device, (b) improved verbal communication, (c) professional credence recognized by colleagues, and (d) enhanced opportunities for job advancement are the components of the success using the SpeechEasy® device model. (See Figure 32.) In order to give meaning to the aforementioned model, a review of literature related to the four themes identified in Figure 32 were reviewed and applied as the theoretical framework for this model. Several theories were explored and applied to these themes. Erickson's (1959/1980) Psychosocial Identity Development and Chickering Seven's Vectors of Identity Development (Chickering, 1969; Chickering & Reisser, 1993) were applied to the first overarching theme: personal internal/external satisfaction using the SpeechEasy® device at work. In addition, interpersonal communication theories, specifically, (a) the communication transmission model (Bolton, 1986; Fujishin, 2001; Luft, 1984; Rogers, 1961; and Rogers & Roethlisberger, 1952) and (b) the five components of interpersonal communications were

applied to the second and third overarching themes of the success using the SpeechEasy® device (Jones & Pfieffer, 1974): (a) improved verbal communication and (b) professional credence recognized by colleagues. (See Figure 32.)

Analysis of Themes Related to Psychosocial Theories

By first assessing the psychosocial impact of using the SpeechEasy® device, the information gathered in this study revealed that using the SpeechEasy® device to reduce the participants' stuttering provided an opportunity to develop as an individual. Specifically, the participants developed competence in their language abilities (Chickering & Reisser, 1993; Chickering, 1969). In addition, the SpeechEasy® device facilitated a transition from Stage 2: Autonomy vs. Shame and Doubt, Stage 3: Initiative vs. Guilt, Stage 4: Industry vs. Inferiority, Stage 5: Identity vs. Confusion, Stage 6: Intimacy vs. Isolation, and Stage 7: Generativity vs. Stagnation of Erickson's Eight Stages of Identity Development. As previously mentioned, each of the participants reported how they were more productive and increased their verbal communication contributions to each of their organizations because they elected to employ the SpeechEasy® device as a means to remedy their stuttering in order to have the opportunity to become fully engaged members of their organizations.

Next, the study investigated the effects experienced by the participants from using the SpeechEasy® device at work and in workplace education. The information gathered provided an opportunity for participants to change positively their self-concepts. The participants' self-concepts were changed because of using the SpeechEasy® device. The shift in the participants' self concept is similar to Chickering's (1969) first psychosocial vector, developing competence. By developing competence in their language abilities, the participants experienced a positive change in their self-concept.

Analysis of Satisfaction Using the SpeechEasy® Device Theme

The participants reported their personal satisfaction using the SpeechEasy® device at work. Prior to using the SpeechEasy® device, the participants reported that they were often treated as inferiors because of their stuttering. The participants who reported experiences of not being treated as inferiors but as industrious are aligned with Stage 2: Autonomy vs. Shame and Doubt, Stage 4: Industry vs. Inferiority, Stage 5: Identity vs. Confusion, and Stage 6: Intimacy vs. Isolation of Erickson's eight stages of development. Prior to using the SpeechEasy® device, the participants doubted their own abilities to be successful in their chosen professions because they did not receive recognition for the contributions to their organizations. The participants received little encouragement to take the initiative because they thought others perceived them as inferior to their colleagues. Even though all the participants in this study were chronologically adults, they all fell within Stages 2-6 of Erickson's eight stages of development. According to Erickson, individuals falling within these early stages of development are stuck in an adolescent level of psychosocial identity development (Erickson, 1959/1980). Individuals stuck in these lower stages experience difficulties in developing self-confidence, are unsure about themselves, harbor self-doubt, lack initiative, and have a poor self-image believing that others perceive them as inferior.

Since the participants began using the SpeechEasy® device, they were not treated as inferiors but as equals and with respect. This is evident in the Sherry case. She gained the respect of her subordinates because of the reduction in her stuttering derived from the SpeechEasy® device. All the participants experienced acceptance by their colleagues as equals because of their reduced stuttering brought on from the use of the SpeechEasy® device. These participants advanced in their psychosocial identity development since using

the SpeechEasy® device. The participants became more active contributors within their organizations. According to Erickson (1959/1980), these individuals are at Stage 7: Generativity vs. Stagnation of his eight stages of development. These individuals are self-confident in their abilities to excel in their profession. As noted in the cases, the participants have taken the initiative to move forward in their careers. This initiative was derived from increased self-confidence in their own capabilities. In addition, these cases revealed a positive change in their self-image. These participants no longer perceive themselves as inferiors to their colleagues but rather as competent equals because of increased self-confidence in their abilities to execute the duties of their jobs.

As previously mentioned, the participants reported that their colleagues, because of their stuttering, often treated them as inferiors and they wanted to be accepted as equals in the workplace. This need to be accepted by others and not be treated or perceive themselves as inferiors coincides with Stages 2 through 6 of Erickson's (1959/1980) psychosocial identity model. Clearly, the participants were insecure about their ability to interface with their colleagues. The perceived insecurity about individual ability to communicate verbally with their colleagues prior to using the SpeechEasy® device led to the development of a poor self image that led to isolation from their colleagues at each of their respective places of employment. In addition, the perceived insecurity about their ability is damaging to the participants' mental and emotional well-being (Chickering, 1969; Chickering & Reisser, 1993; Erickson, 1959/1980, 1968). Likewise, Chickering and Reisser suggest that the participants are stuck at the first vector of their psychosocial development. The participants perceive themselves as incompetent because of the difficulty in interpersonal communications. Unless the participants are able to move beyond their inferiority complex

associated with Stage 4 of Erickson's (1959/1980, 1968) identity development, they will not be able to move beyond Chickering's (1969) and Chickering and Reisser's (1993) first vector, developing competence, because they have not fully developed the interpersonal component of their competence.

Two months after beginning their use of the SpeechEasy® device, each of the participants reported events that indicated a transition to Stage 7 of Erickson's psychosocial identity model. Each of the participants reported how they were more productive and increased their verbal communication contributions to the each of their organizations because they elected to employ the SpeechEasy® device as a means to remedy their stuttering in order to have the opportunity to become fully engaged members of their organizations. At the time, each of the participants developed interpersonal competence (Chickering, 1969; Chickering & Reisser, 1993). According to Chickering, interpersonal competence is an essential skill to possess to effectively communicate, lead, and work with others.

Analysis of Themes Related to Interpersonal Communications Theories

The newfound ease in interpersonal communication was based on the previously mentioned communications transaction model (Fujishin, 2001) and the five components of effective communications (Jones & Pfieffer, 1974). The message the participants were sending was that for the first time they were being decoded accurately by the receiver (Bolton, 1986; Fujishin, 2001; Rogers, 1961). In all cases, the participants' communications were not distracted by the channel noise caused by stuttering. The participants' verbal messages were evaluated by the receivers without prejudice toward their stuttering. All cases revealed that the reduction in their stuttering brought about from using the SpeechEasy® device allowed the receivers to decode messages that were encoded by the participants.

By having clarity in speech derived from using the SpeechEasy® device, the participants were afforded opportunities for job advancement. The following are a few examples of how the clarity in speech obtained from using the SpeechEasy® device is linked to the fourth theme: enhanced opportunities for job advancement. First example: Michael was provided opportunities to take on sales roles in which he has to negotiate with potential sub-contractors on prices for goods and services. Second example: Sheila was promoted to a corporate vice-presidency position in which one of her primary duties was to debrief senior executives on the information systems division of her company, which she now oversees. A final example related to the fourth theme, enhanced opportunities for job advancement, in which Jeremy's newfound fluency derived from using the SpeechEasy® device provided him with several opportunities for advancement within his organization. The clarity in his speech has made him less anxious about how customers will respond to his stuttering because his stuttering was reduced considerably. The clarity in speech reported by these participants coincides with Jones and Pfieffer's (1974) third component of effective communication: clarity of expression.

As noted by Jones and Pfieffer (1974), effective communicators are competent of clarifying and expressing thoughts and feelings so that it is clear to both the sender and the listener. In addition, the participants reported that prior to using the SpeechEasy® device, the listeners would try to guess the meaning behind the words and finish their sentences. As reported by the participants, the receivers of the messages sent by the participants were no longer distracted by their stuttering.

The participants reported how their self-concepts of themselves changed because of their newfound clarity in the SpeechEasy® device. This self-reported revelation by the

participants is aligned with Jones and Pfieffer's (1974) first component of effective communication: self-concept. The clarity in the participants' speech, derived from using the SpeechEasy® device, provided an opportunity to change their self-concepts. The participants' self-concepts about themselves were changed because of using the SpeechEasy® device. Prior to using the SpeechEasy® device, the participants revealed that because of their stuttering the participants did not feel like they could adequately contribute to their respective organizations because of their poor self-concepts. The participants reported how they were not confident in engaging in conversations at work and experienced difficulty in expressing ideas and thoughts at work. The participants reported how they were more confident at their jobs due to their new articulate speech, brought about from using the SpeechEasy® device.

In summary, the previous section presented how the communication transaction model (Bolton, 1986; Fujishin, 2001; Luft, 1984; Rogers, 1961; and Rogers & Roethlisberger, 1952) and the five components of effective communication (Jones & Pfieffer, 1974) were related to the second, third, and fourth themes: (a) improved verbal communication, (b) professional credence recognized by colleagues, and (c) enhanced opportunities for job advancement. First, overviews of theories or models were discussed at length. The remainder of this section integrates the themes with each of the theories. In this section, the four extracted overarching themes used to develop success using the SpeechEasy® device model were presented (See Figure 32.): (a) personal internal/external satisfaction using the SpeechEasy® device, (b) improved verbal communication, (c) professional credence recognized by colleagues, and (d) enhanced opportunities for job advancement. These components, a result of success in using the SpeechEasy® device, were

applied to the psychosocial theoretical framework (Chickering & Reisser, 1993; Chickering, 1969; and Erickson, 1959/1980, 1968) and to interpersonal communication theories. Specifically, the two models discussed were the communication transmission model and the five components of effective communication as shown by Bolton (1986), Fujishin (2001), Jones and Pfieffer (1974), Luft (1984), Rogers (1961), and Rogers and Roethlisberger (1952). By integrating psychosocial theories developed by Chickering (Chickering & Reisser, 1993; Chickering, 1969) and Erickson (1959/1980, 1968) with interpersonal communication theories by Bolton (1986), Fujishin (2001), Jones and Pfieffer (1974), Luft (1984), Rogers (1961), and Rogers and Roethlisberger (1952), this study was able to investigate fully the impact that using the SpeechEasy® device had on the participants in the workplace and in workplace education.

Findings

The findings are summarized as follows: (a) internal/external satisfaction, (b) improved verbal communication, (c) professional recognition, (d) enhanced job opportunities, (e) job contentment, and (f) participation in workplace activities.

Personal Satisfaction using the SpeechEasy® Device

The participants reported internal satisfaction with their experiences with the SpeechEasy® device. One participant, though, reported that during the first 10-days of using the SpeechEasy® device he was dissatisfied using the SpeechEasy® device because he was expecting his stuttering to disappear entirely within minutes of using it. In the same participant's 20-day online journal submission, he reported how the SpeechEasy® device had reduced stuttering and that he was satisfied with it.

This study revealed that the SpeechEasy® device offered these individuals a sense of normalcy and the ability to fit in with the rest of society and within their respective places of employment (Levitt, 1989; Wisniewski & Sedlak, 1992). Normalcy is a component of the first vector of Chickering's psychosocial development: developing competence (Chickering & Reisser, 1993; Chickering, 1969) and Stage 7: Generativity vs. Stagnation of Erickson's stages of development (Erickson, 1959/1980, 1963, 1968). Individuals with a perceived sense of normalcy are contributors to their communities and organizations because of their language competence (Chickering & Reisser, 1993; Chickering, 1969; Erickson, 1959/1980; Levitt, 1989; Wisniewski & Sedlak, 1992). The improvement in language competence indirectly provides an opportunity for improvement in their self-concepts (Chickering & Reisser, 1993; Chickering, 1969; Jones & Pfieffer, 1974). These individuals perceive themselves to be competent in articulating thoughts to their co-workers because of the clarity in their speech. Clarity of expression is critical for both the sender and the listener so as to avoid any misunderstandings or ambiguity in their daily verbal communications (Bolton, 1986; Fujishin, 2001; Jones & Pfieffer, 1974, 1978; Luft, 1984; Rogers, 1961; Rogers & Roethlisberger, 1952).

Improved Verbal Communication

The study revealed that the participants' improved verbal communication skills were derived from using the SpeechEasy® device. Participants reported how they found it easier to articulate their ideas. The improved verbal communication led to an increase in self-confidence in their ability to lead and take on roles such as instructor or group leader without fear of prejudgment based on their speech. The participants were more comfortable being in high-pressure situations such as giving a presentation to a large audience. One participant

who held a supervisory role noted that she was much more at ease with communicating to her subordinates. Overall, the participants were confident that their improved verbal communication would help them in their future endeavors.

Professional Credence Recognized by Colleagues

In all the cases, the participants were recognized for their contributions at work. As reported by the participants, they earned the respect of their colleagues. The participants reported that they were being asked for more contributions to various projects than before using the SpeechEasy® device. The general consensus reported by the participants was that using the SpeechEasy® device helped them to gain acceptance of competence by their colleagues and were not being treated differently because of their stuttering.

Enhanced Job Opportunities

The study revealed that the participants received opportunities for advancement because of the clarity in speech derived from using the SpeechEasy® device. The participants were more active in group activities such as training sessions and group projects. For one participant, her newfound fluency provided the motivation to take a leadership position on a group project. By taking this leadership position, she was given an opportunity to show off her new found fluent speech which was the catalyst for her promotion. With the exception of one, all the participants reported some type of advancement or anticipated advancement in their careers.

Job Contentment

The job contentment literature focuses on individuals with disabilities that employ assistive technology (AT) in the course of their employment. Using the SpeechEasy® device made work less stressful for the participants. The clarity in their speech made it easier for the

participants to focus on their doing their job related duties. The participants enjoy going in to work and interacting with their colleagues face-to-face without fear of stuttering. Job contentment is an important characteristic for being gainfully employed (Akerboom & Maes, 2006). High levels of job contentment result in increasing one's self-concept and developing competence in language intelligence (Chickering, 1969, Chickering & Reisser, 1993, Erickson, 1959/1980; Madaus, Ruban, Foley, & McGuire, 2003).

Workplace Activities

The study revealed that the participants increased their participation in workplace activities because of their use of the SpeechEasy® device. In all the cases, the participants were more active in everyday workplace activities. The increased willingness to participate is motivated by their redefined self-concept of themselves and the changes in self-image (Bryen, Carey, & Cohen, 2004; Jones & Pfieffer's, 1974). One example derived from the Jeremy case, in which he revealed how he was confident in answering the phone at work. Another example of workplace activities that were noted in all the cases were increased on-the-job productivity.

Conclusions

At least five conclusions follow from this study. First, ethnographic narrative research methodology was suitable for obtaining data for this specific phenomenon, exploring the experiences of people who stutter and decide to use an assistive technology.

Second, due to increased workplace satisfaction, improved verbal communication, and job contentment, individuals who employ the SpeechEasy® device bring greater morale and efficiency to the workplace. For example, for Jeremy, his supervisor and colleagues observed how his improved verbal communication was a factor in his increased job

contentment. In addition, this newfound contentment in his job brought about an overall improvement in morale and increased productivity.

Third, due to increased confidence brought about through the professional recognition given to them by colleagues and supervisors, the participants could fulfill more roles in their organizations than previously. Thus, they were able to enhance the needs and goals of their employers.

Fourth, in noticing increased participation in the workplace by these individuals, supervisors became aware of abilities that may have been masked by stuttering and thus they promoted them to higher positions. For example, in the Sheila case, her supervisor became aware of her abilities as leader and she was promoted to a position of high visibility within her organization.

Fifth, while this study intended to explore workplace education, lack of findings in this area may mean that for individuals who stutter, workplace education is not as important as for individuals who do not stutter. Rather, workplace opportunities can be attributed to the use of the SpeechEasy® device.

Implications

The following implications are drawn from the above conclusions.

(I) Employers of people who stutter should be aware of the increased potential that individuals who stutter can contribute to their organizations when they are able to use a SpeechEasy® device.

(II) This information is important for SLPs who counsel individuals who have difficulty in their workplaces or are dissatisfied with their employment. Lack of fluency often

leads to dissatisfaction in the workplace. Thus, assistive technology such as the SpeechEasy® device may benefit these individuals.

(III) Individuals who stutter should be aware that using a SpeechEasy® device to mitigate their stuttering will enhance their psychosocial development. For example, increased confidence helps individuals to develop mature interpersonal relationships. Increased verbal expression is critical for entering the intimacy vs. isolation stage of Erickson's identity development. As found in this study, such individuals also can find increased workplace participation opportunities.

(IV) For the researcher, this study has provided the evidence to begin the process of acquiring a SpeechEasy® device for himself. In addition, the researcher has increased confidence in the integrity of the SpeechEasy device. This project has provided a scholarly means to explore the reasons why he should purchase this device for himself. For the researcher, purchasing the SpeechEasy® device is going to be beneficial for his own psychosocial development. By using the SpeechEasy® device, he will be able to process through Stage 6: Intimacy vs. Isolation of Erikson's psychosocial development model. By being able to communicate clearly, the researcher will be able to develop more mature interpersonal relationships with his colleagues and supervisors. In addition, the researcher will be able to develop more mature interpersonal relationships with his own family. The development of mature interpersonal relationship is derived from the positive self-image of himself that can be brought about from using the SpeechEasy® device. No longer will the researcher view himself or the quality of his work as inferior to others because of his stuttering. Rather, he will better be able to see himself as equal to everyone else because of the positive self-image that can derive from using the SpeechEasy® device. Admittedly, it

will be strange not trying to anticipate what words or sounds will make me stutter. The researcher, for the majority of his life, has few memories of speaking fluently. Similar to the participants in this study, the researcher likely will have increased job opportunities. He should have less fear about going on job interviews without having to worry that the interviewer could be prejudicial towards his stuttering.

Recommendations

Recommendations for Practice

Two recommendations for practice stand out:

- (I) Employers should consider funding the purchase of the SpeechEasy® device or offer it at a reduced cost to employees who stutter.
- (II) SLPs need to consider using the findings from this study in constructing a treatment plan for working professionals.

Recommendations for Future Research

The following five modifications should be considered for future studies on adult individuals who use the SpeechEasy® device in the workplace.

- (I) Include participants from various cultural backgrounds in future studies.
- (II) Observation of individuals in their workplace environment could be used to pick up rich clues about attitudes and behaviors that cannot be fully captured through online journals.
- (III) Provide in-depth directions for online journal submissions in order to elicit rich details surrounding the influence of the use of the SpeechEasy® device in the workplace.

(IV) Additional research needs to be conducted on the use of the SpeechEasy® device, especially for high school students and the impact this device could have on their psychosocial development.

In summary, this study indicates both professional and personal advantages that individuals who stutter may gain when they begin using the SpeechEasy device. No longer will such individuals feel isolated and confined to a personal environment that prohibits them from attaining their fullest potential.

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APPENDIX A

Interview Protocols

Screening Questions

(1) How do you feel today?

Prompts

- a. If a negative response is provided (i.e., sad, angry, upset) then the respondent will be asked why he or she gave a negative response.
- b. If a positive response is provided (i.e., happy, joyful, relieved) then the respondent will be asked why he or she gave a positive response
- c. If a neutral response like ‘I’m tired’ is provided then the respondent will be asked why he or she gave a neutral response.

(2) Would you say that you are generally happy?

Rate yourself on a scale of 1-10 indicating your general happiness.

First Interview Protocol –Day One Prior to the fitting of the SpeechEasy® device

(1) Can you describe for me how stuttering has influenced your relationships with coworkers?

Prompts

- a. Are you treated differently by your family because of your stuttering?
- b. Do your friends finish your sentences for you? How does it make you feel?

- i. How about family members and other relatives?
 - ii. What about co-workers?
- c. Describe for me your experience of forming professional relationships?
- i. Were there any obstacles you encountered in forming professional relationships?

(2) How has stuttering affected your interactions in the workplace?

Prompts

- a. Taken into account your stutter, tell me how you have facilitated meetings or conversations at work?
- b. How does your stuttering affect you when you have to deal with difficult situations?
 - i. Describe for me a difficult speaking situation and how stuttering affected you in that particular situation.

(3) Explain in detail how/why you decided to purchase the SpeechEasy® device?

(4) Explain in detail your expectations and desired outcomes from using the SpeechEasy® device?

Second Interview Protocol—Post 60 Days since using the SpeechEasy® device

(1) Have you noticed changes in your stuttering since you started using the SpeechEasy® device?

Prompt: If you have noticed changes please describe for me each one in detail.

(2) Since you began using the SpeechEasy® device, do others treat you differently?
Explain.

(3) Describe how the SpeechEasy® device has fulfilled your expectations?

- a. Tell me the story of how the SpeechEasy® device has fulfilled your expectations?
 - b. Can you elaborate on that point?
 - c. Can you explain to me who, what, where, when, how, and/or why?
- (4) Describe how the SpeechEasy® device has changed your experiences in workplace training sessions?
- a. Tell me the story of how the SpeechEasy® device has changed your experiences in workplace training sessions?
 - b. Can you elaborate on that point?
 - c. Can you explain to me who, what, where, when, how, and/or why?

APPENDIX B

Exemplar Case Study

Interview	Notes/Coding
<p>Day One Interview Transcription of Sheila</p> <p>15-July-2009</p> <p>Birmingham, AL</p> <p>(1) Today is July 15th and I am interviewing Sheila for my dissertation study involving the SpeechEasy device. Sheila has been explained her rights as a participant in this study and that she is welcome to withdraw from the study at any time. Sheila consented to be in this study. Sheila I am going to ask you a couple of screening questions. Is this okay with you?</p> <p>(2) Yes</p> <p>(3) Are you generally a happy person?</p> <p>(4) Overall I am a happy person it just depends on the situation.</p> <p>(5) If you were to rate your happiness on a scale of 1-10, one being lowest and 10 being the highest, how would you rate yourself?</p>	

<p>(6) I feel like an eight today.</p>	
<p>(7) How do you feel today?</p>	
<p>(8) I feel pretty good today. I woke up in a happy mood today which is unusual in any given day.</p>	Pleasant and responsive
<p>(9) Why is it unusual for you?</p>	
<p>(10) Its like some people bother me from the previous day. People say certain things to me and it bothers me and makes me angry. I tend to keep it in and it frustrates me until I unload my feelings on someone.</p>	Keeps feelings bottled up
<p>(11) I am glad you are in a good mood today and you feel well today</p>	
<p>(12) Thank you</p>	
<p>(13) Prior to using the SpeechEasy device can you tell me how stuttering impacted your relationships with co-workers?</p>	
<p>(14) Its like you don't talk more because you are afraid your speech being noticed. Basically its like you try to cover it up by using hand gestures and simple words. You keep conversation short and to the point.</p>	Fear of speech being noticed Fear of speaking Fear of being teased
<p>(15) Hmm interesting...Are you treated differently by your co-workers because you stutter?</p>	
<p>(16) Some of you will look at you and like you just mental or some are more patient. It all depends on the person. The average person does not know anything</p>	

about stuttering. Basically, it is like if you were to see a person who is handicap on the street they would feel sympathy towards them. But its like a person with a speech problem look at you differently. Some people tell me I stutter to get attention.

Teased

(17) I understand where you are coming from.

Mocked

(18) Which I don't.. It is the complete opposite. I don't want the attention put on me.

Treated differently

She appeared really irritated

(19) I am curious to know do co-workers and others finish your sentences?

(20) Yes! All the time. When people finish my sentences it makes me feel small and insignificant. They actually think they are helping and being accepting of you when in reality they are harming you.

Appeared irritated

(21) How does make you feel when co-workers finish your sentences?

(22) To be frank it really irritates me

Treated differently

Rejection

(23) Understandable. Has stuttering impacted you on forming professional relationships?

Teasing

(24) Doing group presentations I won't speak because its like I am afraid of stuttering severely. Instead of speaking I take on more of the behind the scenes work for group projects.

Irritated

(25) Have you received your SpeechEasy device yet?

(26) Yes, just got it today. (-Turns her head showing me the device in her ear--

)

(27) I was wondering how stuttering has impacted your interactions in the workplace?

Fear of public speaking

Fear of rejection

(28) You really like stay behind the scenes. You're not really out going and you keep to yourself.

Behind the scenes work

(29) Does stuttering affect you when you have to deal with difficult situations?

(30) I guess it does

(31) Can describe specific examples for me?

**(32) When a client calls you and asks you certain questions about a product they get frustrated and angry with me because of my stuttering. They want to be..
hmmmm** (--Noticed hesitation)

Behind the scenes work

(33) Be honest and direct! Just to remind you, I am changing names so nobody will know that it is you. Your identity is safe with me.

(34) Honestly, it really pisses me the hell off because its like just because you speak more clearly it doesn't make you smarter than me. People think because of the way I talk that I am stupid and that is not true.

Frustration

(35) I can empathize with you on that issue. Explain in detail to me how and why you decided to purchase the SpeechEasy device?

Treated differently

Mocked

(36) Personally, I was talking to this guy in a personal relationship and you don't want to tell this person you have a speech problem.

(37) I see	Rejection Treated differently Stereotyping
(38) You basically can't conceal it. Something ain't right with you. You are hiding something from me. In the business world people noticed it too. It's like a person is not a fully 100% so I eventually told my boss I have a speech problem. She sent me an email with information about the SpeechEasy device. I did some research on it and studies show that SpeechEasy doesn't cure stuttering but it helps you pace your rate of speech better and it helps you speak better. The device is very expensive. I paid \$4,750.00 for my SpeechEasy.	Fear Rejection
(39) Wow!	
(40) Most insurance companies will not pay for it because they think it is experimental. In reality, insurance companies pay for chemo for people with cancer to help that person out. Why then can't they pay for the SpeechEasy device? It doesn't make sense.	Rejection Treated differently Stereotypes
(41) Good point. And you know insurance companies cover hearing aids.	Hope Motivated
(42) That is true! A hearing aid helps you hear better and a SpeechEasy helps you speak better. Both devices look similar and yet the insurance companies won't pay for the SpeechEasy devices.	
(43) Explain in detail your expectations and desired outcomes from using the SpeechEasy.	
(44) My expectations and goals are to able be more outgoing and not hide my speech problem. Just to be able to hold a normal conversation with a person. I try to be two different people. You live two different lives. In the business world, you don't want to go into a meeting and stutter the whole time. I am hoping that it	Treated Differently

pays off hearing myself speak (--auditory feedback). Personally, I hope to speak well so I can let someone in.

(45) I understand. Well, I hope SpeechEasy fulfills your expectations and hopes. Now I have to ask some demographic data before we conclude this interview. Obviously, you are female. If you don't mind me asking, how old are you?

Irritated

(46) 27. By the way, I forgot to tell you this earlier, I am enrolled in graduate school

(47) Where?

(48) Troy University

Hope

(49) What degree are you pursuing?

(50) Masters degree in Management Information Systems

Hope

(51) Thank you for participating in the interview today. I look forward to getting your first journal 10 days from now. If you have any questions please feel free to contact me.

Sheila's Online Journal Submission

Post-10 Journal Submission

So far I am happy with the SpeechEasy® device. I have noticed a decrease in my stuttering. I was talking on the phone with a customer early this morning and it felts great to be able to talk on the phone without worrying whether or not my stuttering will get in the way.

Post-20 Journal Submission

It has been 20 days and a lot of my colleagues are giving me lots of compliments about my reduced stuttering. It is like every day I have received a compliment about the improvement with my stuttering from my co-workers. Just yesterday my supervisor complimented me on how much my stuttering has improved. I pointed out to my supervisor the SpeechEasy® device in my ear. Also, my boss took the time to tell me that she has received several compliments from my assigned customers on how much easier it is to communicate with me on the phone and in-person. I mean I have never had any one say anything positive about the way I talk until recently. At times I feel overwhelmed with the positive compliments I have received from my co-workers, customers, and my supervisor.

Post-30 Journal Submission

I am still using the SpeechEasy® device and it has made an impact on my success at work. This was best \$4,700.00 I have ever spent. It was worth every penny. Since I started using the SpeechEasy device a month ago, my supervisor has directed me to take the lead at department briefings. My manager said she feels more comfortable with me giving briefings at department meetings. It has been so much easier to give presentations because I am not

worried about stuttering. Recently, the VP of Information Systems asked me to give a company-wide presentation on a new ordering system the company was using in the customer service department. This was first time I have ever given a company-wide presentation. I began my presentation and I was shocked! I did not stutter at any point in time during the presentation. After I gave the presentation, Michelle, a co-worker complimented me how well I delivered the presentation. I was shocked because I don't like Michelle because she was always disrespectful to me all the time and was impatient with me. I could tell she did not think very highly me because I would notice Michelle rolling her eyes.

Post-60 Journal Submission

I am still using the SpeechEasy® device and I plan on continuing to using it until the device falls apart. Then I plan to buy another SpeechEasy® device to replace it. I no longer feel like an outsider at work. Everybody treats her with equality and dignity. For the first time I feel like I am normal and that I am treated with dignity. I do not get strange looks any more when I speak. More of my co-workers have asked me for my opinion on work matters. I am not brushed off any more. I am getting more assignments that involve speaking. I believe my co-workers see me as an equal.

Day 60 Interview Transcription of Sheila

5-September-2009

Camp Hill, AL

Interview	Notes/Coding
(1) Today is September 5th and I am doing my final interview with Sheila for my dissertation study involving the SpeechEasy device. I reiterated her rights as a participant and that she is welcome to withdraw from the study at any time.	

(2) How are you doing today?

(3) Pretty good. I am very happy it's a holiday weekend.

(4) I hear you on that. Hey can you believe it has been 2-months since you started using the SpeechEasy® device?

(5) The time has gone by so fast. A lot has changed in the last 2 months.

(6) By the way, sorry to hear about your transmission.

(7) Its okay. Gave me an excuse to buy a new car and thank you for coming out to my home to do this.

(8) No thank you. I am grateful you and the other 5 participants have not opted out of the study. Makes the data collection go a lot easier. We should get started because I know you are having family over at lunch.

(9) Yes I am.

(10) Have you noticed any changes in your stuttering since you started using the SpeechEasy® device?

(11) Yes I have noticed a lot of positive changes in my stuttering. As you know work has been going well for me since I started using the SpeechEasy® device.

(12) Yes, I read your journals. It would appear using the SpeechEasy® has been successful for you?

Positive Changes

(13) It really has. Because I feel so much more comfortable speaking and no worrying about whether I am going to stutter. Beyond anything I expected when I first investigated the SpeechEasy® device.

(14) Sounds like it has been a great relief for you not having worry about whether or not you are going to stutter.

Success using
SpeechEasy®

(16) Oh it is. I like being able to talk like everybody else. The ability to speak normal is something I am not taking for granted. I feel equal to everybody else.

Beyond Expectations

(17) What do you mean by that?

Speaking normal

(18) It would be like if somebody who deaf was granted the ability to hear. An obstacle for having a normal life has been removed. Its like I have the same equipment as everybody else. I don't feel handicapped

Equality

(19) I see. Well I am glad for you. So is it fair to say people at work treat differently?

Speaking normal

(20) Yes. Nobody finishes my sentences anymore. My co-workers appear to be more interested in what I have to contribute at meetings or training sessions.

Equality

(21) Speaking of training at work, can you tell me a story of how the SpeechEasy® device has changed your experiences in workplace training sessions?

Speaking normally

(22) Sure, I was in a training class on group dynamics and the facilitator handed out hats with signs on them. I couldn't look at my own hat but I could see everybody else's hat. Everybody was asking me for my opinion and agreeing with me in this role playing exercise. I was given verbal direction to everybody else in the role playing exercise.

(23) Did you stutter at all?

(24) No, I wasn't worried about whether I was going to stutter. In fact, it never crossed my mind.

(25) So continue on, you were giving verbal direction to everybody else in the role playing exercise.

Speaking normally

(24) Yes, after the exercise ended we all took off our hats and I saw why everybody was agreeing with me.

(25) Oh

Speaking normally

(26) My hat said I was the boss. In fact, after the training session was over my supervisor and the HR director stopped me in the hall and asked me to come to their office for a minute.

(27) I see. So what happened?

(28) I was offered and accepted a promotion to Assistant VP of Management Information Systems.

(29) Congrats!!! You must be so happy

(30) I am I am. I was told that they were impressed with the way I was able to assume a leadership role without thinking about. Also, they said I was an effective communicator and that my improved speech was a big part of that decision.

(31) I am so happy for you. I cannot even begin to imagine how they made you feel.

Promotion Opportunity

(32) Thank you.

(33) On that note let me ask you this, describe for me how the SpeechEasy® device has fulfilled your expectations?

Leadership

(34) I was hopeful that the SpeechEasy® would help me but not the extent that it has. I never expected this much success with the SpeechEasy® device. I feel like I have just started living. The success I have experienced with the SpeechEasy® device is beyond my expectations.

Speaking normally
Promotion Opportunity

(35) Well I'm glad for you. You deserve all the success you have experienced.

(36) One last question that just thought off, do you see the SpeechEasy® device as a worthwhile investment?

(37) It was worth the \$4,750.00 for my SpeechEasy. By the far the best investment I have ever made.

(38) I'm glad you feel that way. Listen, I know you are expecting company soon. I just want to say thank you for participating in this study. Your contribution to this study is both helpful and appreciated.

Beyond Expectations

(39) Oh and sorry about my mother asking if you were married. She means well and is always worried about me.

(40) Don't worry, I have a mother too. I understand.

APPENDIX C

Guiding Questions for Participants' Reflective Journals

Participants were asked to submit online journals to the researcher via email. As a way to stimulate rich and thick descriptions of these participants' experiences the following questions were developed to guide and prompt responses.

Post-10

- (1) Are you happy with the SpeechEasy® device? Why/Why not?
- (2) What kind of changes about your stuttering have you noticed in the last 10 days?

Post-20

- (1) Are you still using the SpeechEasy® device? Why/Why not?
- (2) Have any of your co-workers or your supervisor noticed/not noticed a change in your stuttering? Please provide a detailed description.

Post-30

- (1) Describe for me how communicating with your co-workers and/or supervisor has been impacted?
- (2) Describe any changes of your participation in staff meetings?
- (3) If your job requires you to work with customers, tell me how interacting with customers has changed since beginning your use of the SpeechEasy® device?

Post-60

- (1) Are you still using the SpeechEasy® device? Why/Why not?

APPENDIX D

Institutional Review Board Approval

IRB Project #: 08-OR-101

**UNIVERSITY OF ALABAMA
INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS
REQUEST FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS**

I. Identifying information

	Principal Investigator	Second Investigator	Third Investigator
Names:	David J. Horgan, M. Ed.	Patricia A. Bauch, Ph.D.	
Department:	ELPTS	ELPTs	
College:	College of Education	College of Education	
University:	University of Alabama	University of Alabama	
Address:			
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E-mail:	djhorgan@gmail.com	pbauch@bamaed.ua.edu	

Title of Research Project: A Multiple Case Unit Study of the Use of the SpeechEasy Device: Applications to Employment and Workplace Education

Date Submitted: June 30, 2009

Funding Source: N/A

Type of Proposal	<input type="checkbox"/> New	<input checked="" type="checkbox"/> Revision	<input type="checkbox"/> Renewal Please attach a renewal application	<input type="checkbox"/> Completed	<input type="checkbox"/> Exempt
	Please attach a continuing review of studies form				
	Please enter the original IRB # at the top of the page				

UA faculty or staff member signature: _____

II. NOTIFICATION OF IRB ACTION (to be completed by IRB):

Type of Review: _____ Full board _____ Expedited

IRB Action:

____ Rejected Date: _____

____ Tabled Pending Revisions Date: _____

____ Approved Pending Revisions Date: _____

____ Approved-this proposal complies with University and federal regulations for the protection of human subjects.

Approval is effective until the following date:

Items approved: ____ Research protocol (dated _____)
____ Informed consent (dated _____)

Recruitment materials (dated _____)
 Other (dated _____)

Approval signature _____ Date _____