To the Graduate Council:

I am submitting herewith a dissertation written by Patricia Frances Duffley-Renow entitled “Individuals with Age-Related Vision Loss: Experiences of Learning to Use Assistive Technology.” I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy with a major in Education.

_____
Ralph Brockett, Major Professor

We have read this dissertation
and recommend its acceptance:

_____
S. Wayne Mulkey

_____
Sandra P. Thomas

_____
Mary F. Ziegler

Accepted for the Council:

_____
Carolyn R. Hodges, Vice Provost and
Dean of the Graduate School

(Original signatures are on file with official student records.)

INDIVIDUALS WITH AGE-RELATED VISION LOSS: EXPERIENCES OF LEARNING TO USE ASSISTIVE TECHNOLOGY

A Dissertation Presented for
the Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Patricia Frances Duffley-Renow

May 2008

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DEDICATION

This dissertation is dedicated to my husband, Mark, who encouraged me to follow my dream.

ACKNOWLEDGEMENTS

I begin by thanking the men in my study. They shared their experiences of learning to use assistive technology in order to adapt to vision loss. I also thank them for their military service to our wonderful country.

I was honored to have been surrounded with an extraordinary dissertation committee. Dr. Ralph Brockett, Chair; Dr. Mary Ziegler; Dr. Wayne Mulkey; and Dr. Sandra Thomas contributed to my doctoral education and to this dissertation. They believed in, guided, and encouraged me throughout the process.

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ABSTRACT

Vision and hearing loss are senescent changes that occur during the aging process. Assistive technology is available that can assist individuals with adapting to this new life world. Technology can be expensive and research has indicated a 24% abandonment rate. Studies have indicated successful implementation of devices have occurred when individuals have a choice in device selection and training.

The purpose of this existential phenomenological study was to explore the experiences of adults with age-related vision loss who learned to use assistive technology. A purposive sample was recruited from a Blinded Veterans Association located in Kentucky. The sample was comprised of seven male veterans with age-related vision loss, who were between the ages of 58-89. Each of these individuals participated in a phenomenological interview, which allowed me to understand the essence of the lived experience of these men.

Four figural themes emerged that characterized the learning experience against a contextual ground of others, body, and time. The themes: “They take you by the hand and take you through it”; “learning to do it in a different way”; “I found I can be self-sufficient”; and “encourage other veterans” described the process of learning to use assistive technology that began with the instructor at the center and concluded with the veteran returning to his home and sharing his acquired knowledge. Findings from the study indicate the instructors were the guides into the new life-world of a person with a

visual impairment. Learning to use assistive technology resulted in maintaining self-sufficiency and independence.

Recommendations for practice for rehabilitation teachers, adult educators, and assistive technology practitioners indicates providing a learning environment consistent with Knowles (1980) assumptions of andragogy may result in successful use of assistive technology, which may in turn reduce abandonment rate. Recommendations for research include phenomenological studies with individuals who elected not to use assistive technology to determine if choice and training were reasons they elected not to use. Finally, instructors who provide rehabilitation training need to be interviewed about the phenomenon of teaching to establish best practices for recipients of assistive technology.

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CHAPTER 1:

INTRODUCTION TO THE STUDY

Grow old along with me! The best is yet to be, the last of life, for which the first was made. Our times are in his hand who saith, "A whole I planned, youth shows but half; Trust God: See all, nor be afraid!''

— Robert Browning

Life expectancy of individuals has increased as a result of advances in medical treatment and technology. Growing old can be a dynamic life process in which meaningful new roles and goals are identified, anticipated, or expanded. However, old age (and sensory impairments) can also produce isolation, bewilderment, resignation, regression, and loss of health, status, and dignity (Hersen & Kabacoff, 1995).

Assistive technologies can mitigate impairments of vision, hearing, or mobility. According to the Technology-Related Assistance for Individuals with Disabilities Act which was first signed into law in August 1988 (P.L. 100-407), assistive technology includes "any tool or item that increases, maintains, or improves functional capabilities of individuals with disabilities" (U.S. Congress, 1988) in such areas as seating, daily living, environmental control, and mobility. The technology spectrum ranges from "no tech" devices, such as Velcro™ or magnets, to "high-tech" devices, such as a computer system that recognizes a person's voice.

Vision technology ranges from simple magnifiers to closed circuit televisions. There is technology available that can magnify pictures and text. Computer programs can enlarge and read text to the computer user. Other devices enable individuals with visual impairments to maintain independence in their environments.

Estimates are that, worldwide, between 65–75% of the population over age 65 are visually impaired (Bailey & Hall, 1990). Physiological changes occur in the eye as part of the normal aging process. These changes are considered nonpathologic and may involve changes in visual acuity, contrast sensitivity, problems with glare, and change in color discrimination.

The four major causes of vision loss in people over 65 are age-related macular degeneration, glaucoma, cataract, and diabetic retinopathy. Other conditions may occur, but the previous four are the most common. These conditions affect different parts of the eye. As a result, individuals must learn to adapt to these changes. Most individuals who acquire a disability experience changes in their lifestyle and older individuals with acquired visual impairments must learn compensatory skills to prevent additional injuries.

There is assistive technology available that may assist the individual during this transition; however, low vision evaluations, training, and trial usage are components of the rehabilitation process that must be completed before a device is recommended. The two major losses usually experienced with developing low vision are the ability to read and the ability to drive (Bishop, 1996). The loss of the ability to read print limits some activities of daily living, such as reading the information on medicine bottles, recipes,

looking at photographs, and seeing instructions. Social interactions decrease as a result of the inability to drive (Lighthouse International, 2001), and depression and a decline in independence occur as a result of these changes (Horowitz & Reinhardt, 1998).

Assistive technology is available that may assist individuals with acquired vision loss. Most equipment is costly, and research studies (Philips & Zhao, 1993) have indicated a 24% abandonment rate. Other studies (Strong, Jutai, Bevers, Hartley, & Plotkin, 2003; Copolillo & Teitelman, 2005) found training and individual choice in device selection as components of successful implementation but a gap in the literature exists where individuals describe their actual experiences learning to use assistive technology.

In an effort to understand this experience, I explored the learning experiences of men who are members of a local Blinded Veterans Association who attended rehabilitation training at a Department of Veterans Affairs Blind Rehabilitation Center and learned to successfully use assistive technology.

Purpose and Research Question

The purpose of this qualitative descriptive phenomenological study was to explore the experiences of older individuals with age-related visual loss (visual impairment) who have learned to use assistive technology. The question that guided this study is: What are the learning experiences of adults with age-related vision loss who successfully use assistive technology?

Significance

The significance of this research is that the information I receive may benefit more individuals with age related visual impairments who would benefit from assistive technology. Participants' experiences of learning to use assistive technology will add to the knowledge base of program planning and development of blind rehabilitation device training programs. Facilitators of rehabilitation and device training programs may need to adapt teaching methods and training materials to accommodate the needs of this population. This modification, in turn, may provide a more positive learning experience for the assistive technology recipient. Ultimately, the technology abandonment rate might be lessened.

Assumptions

The assumptions I bring to the study are (1) that the individuals will think technology is difficult to learn to use and decide not to receive training (2) many of the participants will need to attempt the learning process several times. (3) They will want to learn more about technology and want additional technology once the learning process has been successful. (4) I assume that a percentage of individuals will choose not to use specific technology because of the amount of training time that is required.

Delimitation

Participants in this study were delimited to members of a Blinded Veterans Association, ages 55 and older, who have an age-related vision loss, reside in the state of Kentucky, and received training at a Veterans Administration Blind Rehabilitation Center.

Limitations

In this qualitative study, I began with a purposive sampling procedure to recruit adults with age-related vision loss who have learned to successfully use vision assistive technology. The study is not intended to be generalizable to all individuals with age-related vision loss or to other types of assistive technology. However, the experience is one that may occur among other individuals learning to use assistive technology.

Stance of the Researcher

At the beginning of this research, I was employed as an Assistive Technology Practitioner. I conducted evaluations and training with assistive technology. The studies I have explored indicated a high abandonment rate for assistive technology and I wanted to know the reason for this occurrence. Previous studies indicated one reason for this abandonment was inadequate training (Strong, Jutai, Bevers, Hartley, & Plotkin, 2003; Copolillo & Teitelman, 2005). I wanted to know what training components resulted in

continued use of a device. As an adult education student, I wondered if blind rehabilitation centers utilized an adult learning model, specifically, Knowles (1980) model of andragogy, during training.

I wanted to hear the learning experiences from the user's perspective. The approach I utilized in this study is an existential phenomenological approach that was pioneered by Pollio, Henley, and Thompson (1997) and further developed by Thomas and Pollio (2002). The approach is a compilation of contributions from existential philosophers such as Heidegger, Husserl, Merleau-Ponty, and Buber. Thomas and Pollio (2002, p.9) define *existentialism* as a philosophy about who we are and how we may come to live an authentic life. The purpose of this study is to explore the experiences of older individuals with age-related vision loss who have learned to use assistive technology. In phenomenology, views and beliefs are not drawn upon; only the lived experience is emphasized. I chose this method because I want to understand the learning experiences of my participants who have lost their vision and successfully use assistive technology. What are his learning experiences? I cannot get those answers from a questionnaire. The intention of using phenomenological methodology is best described by Polkinghorne (1989, p.48), "the purpose of phenomenological research is to describe the structure of the experience, not to describe the characteristics of a group who have had the experience."

Definitions of Terms

For the purpose of this study, terms are defined as follows:

Age-related vision loss (visual impairment)-Vision loss that increased since the age 55 requiring assistive technology to perform activities of daily living such as reading and writing.

Blinded Veteran's Association-A service organization that serves Veterans who have visual impairments classified as low-vision or blind. The association provides legislative advocacy and field service to individuals who have served in the military.

Closed circuit television-An assistive technology device that is used to increase the magnification and/or contrast of reading and writing materials.

Low vision-Central visual acuity equal to or less than 20/70 but greater than 20/200 in the better seeing eye with the use of corrective glasses, (Department of Veterans Affairs, 2005).

Screen enlargement software -Software that is used to enlarge font size on a computer screen. It may also have speech output. Zoom Text™ is one brand of this software.

Veterans Administration Blind Rehabilitation Centers-Ten rehabilitation facilities that provide comprehensive rehabilitation to veterans with significant visual impairment.

Summary

Chapter 1 provided an explanation of the research problem and the method that will be utilized to obtain the participant's experiences learning to use assistive technology.

The introduction discussed the types of visual impairments that can occur during the aging process and assistive technology that is available. I concluded the chapter with an explanation of why I chose individuals with age-related vision loss.

In the following chapter, a review of the literature will focus on age-related vision loss, assistive technology, history of Veterans Administration's blind rehabilitation program, and the adult learning model that guides the study. Chapter 3 provides a comprehensive explanation of the method utilized in this study. Findings in Chapter 4 are presented using words extracted from participant interviews to present the thematic structure of the phenomenon of learning to use assistive technology. Finally, Chapter 5 concludes the study with a discussion of the findings and recommendations for future research.

CHAPTER TWO:

LITERATURE REVIEW

This chapter provides a discussion of age-related vision loss and the use of assistive technology. An overview of assistive technology and the history of Veterans Administration Blind Rehabilitation program are presented. Current literature on the types of research that are currently being conducted in this area is provided. A model of adult learning developed by Malcolm Knowles (1968) is discussed because of its relevance to the research problem. The chapter continues with a discussion of the key assumptions of Knowles' adult learning model and finally, program planning for adults is discussed.

Prevalence of Age-Related Vision Impairment

Biological changes occur in the eye as part of the normal aging process. These changes are considered nonpathologic and may involve changes in visual acuity, contrast sensitivity; problems with glare, and change in color discrimination. Worldwide, estimates are that between 65–75% of the population over age 65 is visually impaired (Bailey & Hall, 1990). Individuals with age-related vision loss may experience the loss of self-confidence, self-worth, self-esteem, autonomy, independence, environmental

security, and the ability to participate in recreational activities, meaningful interpersonal relationships, and social support (Hersen & Kabacoff,1995).

Most individuals who acquire a disability experience changes in lifestyle. People need to be able to have the time to mourn their loss. The two major losses usually experienced with developing low vision are the ability to read and the ability to drive (Bishop, 1996). Loss of the ability to read print limits activities of daily living and independence. As a result, individuals with age-related vision loss often withdraw from society. The use of assistive technology to accomplish daily living tasks may increase independence. Using adult learning concepts during the instruction phase of training may result in the ability to successfully use assistive technology and a decrease in abandonment rate.

Assistive Technology

Canes, eyeglasses, and crutches are early forms of assistive technology. Injured soldiers were the initial users of devices known as prosthetics. These were created to assist the soldier who lost a limb due to military combat. According to the 1982 Office of Technology Assessment Study, the Veterans Administration led the way in disability-related research. Rehabilitation Services Administration (RSA) started funding federal Rehabilitation Engineering Research Centers (RERCs) in early 1970. Since the 1970s, laws have been passed to expand the availability of assistive technology devices. Today

individuals with age-related vision loss have access to an array of devices to assist in accomplishing day to-day activities such as reading the paper and mail, which in turn promotes independence. Ability to read may help individuals adjust to his vision loss (Trudeau, Overbury, & Conrod, 1990). Magnification devices or software can assist with reading ability but training is required before an individual can use them successfully. Feely, Vetere, & Myers, 2007 conducted a qualitative phenomenological study with seven individual with age-related macular degeneration (AMD). Individuals were provided one hour of instruction in a technique called eccentric viewing and page navigation with magnifiers. They were required to complete additional exercises at home and asked to record information about the difficulty of the exercises and any additional comments. Results indicated that some participants gave up because their eyes became tired and the extra effort needed to read outweighed the benefit. Another study, (Stelmack, Massof, and Stelmack, 2004), found that eccentric viewing requires persons to be highly motivated and the instructor needed to be skilled in conveying how to locate the preferred viewing site. Conrod and Overbury's (1998) study indicated participants preferred one-on-one training when learning to use devices. Phillips and Zhao (1993) utilized interview style surveys to acquire information about predictors of assistive technology abandonment rate. The survey was administered to two hundred and twenty-seven adults with physical disabilities. Questions related to selection, acquisition, performance and use of assistive technology devices. Results indicated that the individuals in the study wanted more involvement in the selection of the device. The

researchers proposed that training in the environment where the device was going to be used would decrease the likelihood of abandonment. Finally, the researchers' reevaluation to determine effectiveness of the device should occur at scheduled intervals.

History of Department of Veterans Affairs Blind Rehabilitation

The Department of Veterans Affairs Blind Rehabilitation Centers have been instrumental in the development of blind rehabilitation methodology. On July 4, 1948, Hines Blind Center at Edward Hines, Jr. VA Hospital in Hines, Illinois opened to rehabilitate the blinded veterans of World War II. (Miyagawa, 1999). Russell C. Williams, a veteran blinded in France in 1944, became the first Chief of Blind Rehabilitation. He describes the purpose of the facility:

> *A Blind Center is where faith is strongest: that blind people deserve hope, respect, and freedom. These are accorded first, followed by the means of achieving them. Our civilization permits wholesome living when blind, and here, one learns how.*

Two other individuals, Cpl. Richard Hoover and Sgt. C Warren Bledsoe, had developed the long cane technique used for foot travel. Because other obligations kept Hoover and Bledsoe away from Hines, Williams had to train his staff to use the long cane. As part of this training, staff were blindfolded. "Through his own experiences with

mobility lessons (without the use of a cane) at Old Farms, Avon, Connecticut, Williams quickly recognized the intrinsic value of utilizing the sensory faculties of hearing, smelling, and detecting air pressure and temperature change as an absolutely indispensable key for interpreting one's environment. (Miyagawa, 1999, p. 106)." This technique permitted the staff to recognize the amount of environmental stimuli that was present. This resulted in the new program of Orientation and Mobility.

Hines Blind Center has been renamed the Central Blind Rehabilitation Center and is one of ten Veterans Administration Centers that serve veterans who are legally blind due to an array of conditions. The men in my study received training at one or more of the rehabilitation centers and a glimpse into their experience learning to use assistive technology will be provided in Chapter 4. Adults often learn to use assistive technologies in training and education programs. The next section reviews a landmark theory of how adults learn.

Knowles' Adult Learning Model

In 1968, Malcolm Knowles' model of andragogy appeared in the field of adult education. This model provides assumptions about how adults learn. Despite controversies as to the validity of the assumptions, research has been limited. Studies that have been conducted include: inquiries relating to teaching behavior (Beder and Darkenwald, 1982), learner involvement (Courtenay, Arnold & Kim, 1994), and efficacy

of andragogical versus pedagogical instructional design (Rachal, 2002). Knowles' model of andragogy lists self-directed learning as one of the components. Knowles proposed that, as learners mature, they become increasingly self-directed (Knowles, 1978, p.44). Knowles' early model included four key assumptions:

1. As individuals become older, they move from being dependent to more self-directed (Knowles, 1978, pp.44-45).
2. An adult brings his prior experiences in life to the learning environment. (Knowles, 1978, p. 45).
3. Social roles dictate adults' readiness to learn. (Knowles, 1978, p.45).
4. Time is factor that changes as individual become older - from postponed application to immediacy. (Knowles, 1978, p. 45).

Additional assumptions were added later by Knowles (1984) that included:

5. Adults are motivated to learn by internal factors, rather than external ones (Knowles & Associates, 1984, pp. 9-12.)
6. Adult have a desire to know why they need to learn something (Knowles, 1984.)

Knowles' model of adult learning provides an orienting framework for my study although it is not used to guide data analysis. I will utilize this model in Chapter 5 as I reflect on my research findings. Following is a historical overview of self-directed learning and review of self-directed learning research that pertains to acquired disabilities and aging.

Historical Overview of Self-Directed Learning

Self-directed learning in adults had its beginning in the 1800s, but it was not until the 1960s that empirical research appeared extensively in adult education literature. In 1961, Houle's research that explored learning orientation held by adults was published in his book, *The Inquiring Mind*. Houle's research focused on typology of goal, activity, and learning orientations of adult learners (Brockett & Hiemstra, 1991). He conducted his research with 22 participants using in-depth interviews to determine each participant's history of learning, factors that led them to continue to learn, and how they viewed themselves as learners (Merriam & Caffarella, 1999).

Houle's work was followed by Tough, who provided the first comprehensive definition of self-directed learning as a form of study (Merriam, 2001). Tough's term, *self-planned learning*, is used synonymously with self-directed learning. A learning project is defined as a series of learning episodes. Learning episodes are periods of time that individuals spend acquiring knowledge that they will retain for at least 2 days. Tough and his students interviewed individuals from seven different populations to determine what type and how many projects individuals complete in a year. These populations included professors, politicians, white-collar men, factory workers, white-collar women, teachers, and mothers. Results indicated that individuals spend an average of 700-800 hours a year in self-planned learning projects. This amounts to an average of eight different projects per year per individual. Another interesting result is that less than 1% of

all learning projects were conducted for credit, such as a grade, pay increase, or promotion. Tough interviewed 66 adult Canadians to determine their self-directed learning projects. Tough's research revealed that the learner planned 70% of all learning projects themselves.

Tough's research has been replicated about 55 times. Tough's research was replicated to determine if adults in other localities learned the same way as the Canadians. The studies have produced similar results, and there appears to be a common learning pattern - informal learning just seems to be a natural component of life (Tough, 1979). It is interesting to note that one study was conducted in an adult nursing facility. This study was not consistent with the previous studies. It was determined by the researcher that lack of resources was the reason the adults did not participate in any learning activities.

Different goals of self-directed learning have been developed since its initial inception. Depending on the theoretical orientation of the researchers, goals may be related to a humanistic philosophy, transformational learning experience, or social action learning. A model based on a humanistic philosophy is the Personal Responsibility Orientation (PRO). This model, developed by Hiemstra and Brockett in 1991, focused on personal responsibility (Hiemstra & Brockett, 1994). Their focus is that adults take a proactive approach to the teaching-learning process. This model identifies self-direction as an "umbrella concept" and was intended to clarify and synthesize some of the different elements of self-direction that had been previously identified (Stockdale, Forgerson, &

Brockett, 2001). The PRO model has four components: personal responsibility, learner self-direction, self-direction in learning, and self-directed learning. Self-directed learning in the PRO model refers specifically to the teaching-learning process and centers on the planning, implementation, and evaluation of learning activities where learners assume primary responsibility for the process (Hiemstra & Brockett, 1994).

Candy's (1991) self-directed learning model presents self-direction as goal and a method. When viewed as a goal, self-direction is perceived as having two components: personal autonomy and self-management. As a method, the learner controls the educational process in the instructional domain, this usually occurs in a formal learning environment whereas the autonomous domain occurs outside a formal setting and the learner is responsible for all components of the learning (autodidaxy).

Historically, self-directed learning has been defined as a model, theory, and a learning methodology. Brookfield (1995), in his overview of adult learning, stated several critical perspectives of self-directed learning. One area of concern is the research that has been previously conducted with adult middle-class subjects. He believes the samples are too homogeneous and different results may occur with other populations. He addresses the need to study how deliberation and serendipity intersect in self-directed learning. Use of computer technology in the self-directed learning arena seems to be increasing.

Self-Directed Learning Research

The current literature on self-directed learning in adults with age-related vision loss is nonexistent. However, studies have been conducted on self-directed learning of adults with other conditions. For example, Rager (2003) used a qualitative research approach, to study women with breast cancer. She selected her participants based on the following criteria: They were English speaking, were within 3 years of breast cancer diagnosis, and had engaged in a minimum of 7 hours of self-directed learning about breast cancer. A semi-structured interview was used to collect the data. The findings in the study added to the knowledge base of self-directed learning in a crisis situation.

Two other studies were conducted that related self-directed learning and breast cancer. Murphy-Ende's (1996) quasi-experimental study was conducted with 100 women who were randomly assigned to receive cancer information via a computer program or to a control group. Findings of the study indicated that there is a relationship between self-directed learning and self-efficacy. These results may be transferable to individuals with vision loss who are learning to use assistive technology.

A case study of ten Alaskan breast cancer patients (Alexander, 1997) indicated self-education was used as a coping mechanism. This process began as a result of receiving conflicting medical information. Findings indicated learning and sharing were an integral component of the healing process.

Roberson & Merriam (2005) examined self-directed learning of older, rural adults. The researchers looked at the process older adults engage in when conducting a self-directed learning project. Results of this study added to the knowledge base on self-directed learning in older adults by describing the process used to complete a self-directed learning project. The process begins with a reason to learn which can be internal or external. An internal reason is a desire one has to learn something, whereas, external involves other individuals asking for something to be done. A person must have an interest in the project in order for learning to continue. Individuals must access resources, which can include books, newspapers, or other individuals. The process continues with the goals of the project becoming a priority. This is defined as systematic attention. Often during the process, mistakes occur and individuals must adjust to the event. The process concludes when the project comes to a close. Findings indicate, "SDL is often a response to developmental issues of that particular life stage" (Roberson & Merriam, 2005, p.284) meaning life changes were often the reason a learning project started.

Program Planning

Studies (Strong, Jutai, Bevers, Hartley, & Plotkin, 2003; Copolillo & Teitelman, 2005) have indicated that inadequate training is one reason assistive technology is not used. Program planning offers many models, but an eclectic approach appears to be necessary when working with adults. Hampshire (1981) summed it up,

> *A man becomes more and more a free and responsible agent the more he, at all times, knows what he is doing in every sense of the phrase, and the more he acts with a definite and clearly formed intention.* (p.177)

The participants in this study have physical limitations .Using adult education theories and strategies in the learning environment may promote positive outcomes and eliminate some barriers faced by individuals on the margins. I will return to program planning as I discuss the findings in the study.

Chapter 2 provided a literature review of age–related vision loss, assistive technology and VA blind rehabilitation. Components of Knowles' adult learning model, which guided this research, were explained. The chapter continued with a summary of self-directed learning and aging research. Program planning for adults concludes the chapter. The method used in my study is discussed in detail in Chapter 3.

CHAPTER THREE:

METHOD

The purpose of this study was to explore the learning experiences of individuals who have learned to use assistive technology by using an existential phenomenological approach. The University of Tennessee method pioneered by Pollio, Henley, and Thompson (1997), and further developed by Thomas and Pollio (2002), allowed me to understand the essence of the lived experience of my participants. This method is a compilation of contributions from such existential philosophers as Heidegger, Husserl, Merleau-Ponty, and Buber. Phenomenological research begins with an open-ended question. Phenomenological studies utilize interviews, observation, and protocol writing as forms of data collection to obtain the essence of a person's experience of a phenomenon. Researchers conduct a bracketing interview to become familiar with their own biases.

Upon completion of the interview, the material is transcribed and the data is mined for metaphors and themes. Variations occur in the different orientations. Following is a discussion of the method used in my research.

Thomas and Pollio (2002, p.9) define *existentialism* as a philosophy about who we are and how we may come to live an authentic life. This method is a compilation of contributions from such existential philosophers as Heidegger, Husserl, Merleau-Ponty, and Buber.

Phenomenology is a philosophy, as explained by Merleau-Ponty in his 1945 book:

> *What is phenomenology? It may seem strange that this question has still to be asked half a century after the first works of Husserl. The fact remains that it has by no means been answered. Phenomenology is the study of essence; and according to it, all problems amount to finding definitions of essences: the essence of perception or the essence of consciousness, for example. But phenomenology is also a philosophy which puts essences back into existence, and does not expect to arrive at an understanding of man and the world from any starting point other than that of their "facticity." It is a transcendental philosophy which places in abeyance the assertions arising out of the natural attitude, the better to understand them: but it is also a philosophy for which the world is "already there" before reflection begins—as an inalienable presence: and all its efforts are concentrated upon re-achieving a direct and primitive contact with the world and endowing that contact with a philosophical status.* (Maurice Merleau-Ponty, *Phenomenology of Perception*, (1945/1962), p. vii).

Based on this philosophy, researchers in psychology, education, nursing, and other disciplines have developed a research method that allows participants to speak of

their lived experiences without constraints posed by questionnaires. My study explored the experiences of individuals with age-related visual impairments who learned to use assistive technology. Each participant provides his life-world perception before and after sensory loss.

Participant Selection

A purposive sample included men who were members of the Blinded Veterans Association who had learned to use assistive technology at a Veterans Administration Blind Rehabilitation facility. Other criteria included being age 55 or older and having an age-related vision loss. Age-related vision loss for purposes of this study included conditions that had progressed since age 55 and each participant's visual loss was classified as legally blind according to Department of Veterans Affairs Administration Guidelines, meaning 20/70 to 20/200 or worse visual acuity and/or significant visual field loss, (Department of Veterans Affairs, 2008).

Participants were recruited using purposive sampling. Purposive sampling criteria include individuals who experienced the phenomemon and they were willing to talk about the experience

My bracketing interview, two pilot interviews, and two additional interviews were presented to the University of Tennessee Phenomenology Group. This interdisciplinary group is composed of researchers and students who are familiar with the method of Thomas and Pollio (2002) for analyzing phenomenological data. The group meets every

Tuesday in the nursing building located on the campus of the University of Tennessee, Knoxville.

Prior to beginning the study, I made initial contact with a Department of Veterans Affairs Vision Impairment Service Team (VIST) Coordinator who referred me to the local President of the Blinded Veteran's Association. I contacted this individual and discussed my project and he started asking other members of this organization if they would like to participate. He would then notify me and provide email addresses and or phone numbers for contact purposes. I contacted one participant who agreed to ask other members and this resulted in snowball sampling.

In all, I interviewed seven individuals. Appropriate sample size is determined when no new themes emerge from individual interviews. This is known as data saturation. Thomas and Pollio (2002) typically recommend a sample size of 6-12 individuals. Pollio et al. (1997) recommend that once themes are recurrent, a researcher should interview two additional participants, and if no new themes occur, the lived experience has been described.

The Setting

Individual interviews were conducted in two different locations. Two individuals preferred to be interviewed in an area of the facility where they performed volunteer work. The other individuals were interviewed in their homes. Privacy and confidentiality were assured in both locations.

Characteristics of the Participants

Participants in the study consisted of seven men who were members of the Blinded Veterans Association and had received training at one or more Department of Veterans Affairs Blind Rehabilitation Centers. The participants' ages ranged from 58-89. Among this group, six were Caucasian and one was African American. Five participants were married and lived with their spouse and two lived alone. Each participant had an age-related visual impairment that was progressive and, as such, was diagnosed as legally blind according to Veterans Administration requirements. The participants had received assistive technology training at a Department of Veterans Affairs (DVA) Blind Rehabilitation Center on one or more occasions. Two individuals had been to two or more DVA training centers. Upon successful completion of their training, they were given the technology they had learned to use. Each participant used an average of 5 pieces of technology. Technology included screen enlargement software, handheld magnifiers, CCTVs, scan and read programs, and white canes.

Bracketing Interview

Prior to beginning my research, a bracketing interview was conducted. The purpose of bracketing is to make the researcher aware of her own biases. A member of the University of Tennessee Phenomenology Research Group conducted my bracketing interview. This interview was transcribed and presented to the University of Tennessee Phenomenology Research Group. During the group process, the interview was read line

by line and group members would discuss some of the preconceived ideas I had about assistive technology and the learning experience. I became aware of my experiences learning to use assistive technology and I had preconceived reasons why individuals should use assistive technology. I also felt women were more receptive to using the technology because I saw so few men in my practice. Bracketing was continued throughout the study to ensure I interpreted the participant's data from his experience, which ensured a valid interpretation of the participant's experience.

Pilot Study

A pilot study was conducted with one participant to determine the appropriateness of the research question, "Can you tell me your experience using assistive technology?" The pilot interview was analyzed with the help of the University of Tennessee Phenomenology Research Group to ensure interpretations of the data were supported by text, thus maintaining methodological rigor. The wording of the pilot study question elicited information about individual pieces of assistive technology. I wanted to know about the experience of learning to use the technology so the research question was re-worded. As a result, I changed the wording to include learning experience. I was interested in knowing about the actual learning experience because I wanted to know if the learning experience affected the decision of using or not using the technology. A second pilot interview was conducted using the revised question, "Can you think back to a time when you were learning to use _____ (name of assistive technology) and tell me what stood out for you?"

The objectives of the study included:

1. Obtain learning experiences of successful assistive technology users who have an age-related vision loss using a phenomenological approach.
2. Analyze these descriptions using Thomas and Pollio's (2002) phenomenological methodology.
3. Identify themes regarding the learning experiences of seven male veterans who are successful assistive technology users.

The interview was transcribed and presented to the University of Tennessee Phenomenological Research Group where it was read line by line and discussed by the members of the group. Based on the feedback I received from the research members, I decided to proceed with acquiring IRB approval with the new question. Once IRB approval was received, I began the data collection process.

Participant Recruitment

When recruiting individuals for this study, I contacted the Veterans Administration Vision Impairment Services Team (VIST) Coordinator and the State Blind Rehabilitation Office to discuss my research and seek participants. I obtained permission from the State Blind Rehabilitation Office and conducted the one-person pilot study mentioned above. The process to obtain permission from the Veterans Administration is arduous so I was referred to the President of the local Blinded Veterans Association. He discussed my project with members and contacted me by phone to relay

information when an individual agreed to be a participant. I made initial contact with each individual by phone and arranged to meet them at the volunteer site or his home. Participants were recruited using snowball sampling. Snowball sampling is where one participant tells the interviewer of other individuals who have experienced the phenomenon.

Data Collection

For each interview, I traveled either to the facility where the participant volunteered or to the individual's home. After establishing rapport with each individual that included describing our experiences in the military, I began recording the interview process. The informed consent form (Appendix A) was read and approval was recorded. I chose this method so the participant would not have to access his assistive technology during the interview process to read the consent form. I began the interview by asking one open-ended question, "Can you think of a time you were learning to use _____ (name of assistive technology) and tell me what stood out for you?" As each individual described his experience, I used probes to obtain additional information or clarify previous comments.

When I finished conducting the interview, I spent time with the participant who demonstrated his assistive technology to me. At the close of our interview, I returned to my car and I immediately wrote field notes. These notes included information about the participant, the technology he used, affect of the participant during the interview, and

location of interview. These field notes were called upon to refresh my memory during the data analysis process.

I maintained a blog off and on during my dissertation process. Initially, it was accessible to others online but as time went on; I used it as a reflective journal and chose to make it inaccessible. Using a blog allowed me to reflect on my experiences as a researcher as well as the struggles and triumphs of my experience being in a doctoral program.

I chose to transcribe the interviews myself so I could listen to the voices of my participants again. This process provided transcripts that were very detailed and indicated the inflection and tone of each participant's voice. Transcripts were read a third time while listening to the audiotapes to ensure my transcription was accurate. During the reading, metaphors would be highlighted for extraction from the data. Once extracted, metaphors would be utilized to convey the experience of learning to use assistive technology in the thematic structure. As I mined the data, I would write questions or comments to myself that would later be shared with the phenomenological group members. Upon completion of each transcription, I would read each transcript and select words that described the participant's experience. These words would be later grouped together to become themes. Interviews were analyzed individually for themes. Upon completion of this initial analysis, a second analysis was conducted to define themes that occurred across interviews. There is qualitative software available to assist in this process but I chose to manually write each theme on a colored sticky note and place on a wall in my home. I would read, relocate and read again, arranging themes in patterns.

Similarities would be placed on one side of the wall and differences would be on the opposite wall. I then chose participants' words from the data to name each theme. Upon completion, I focused on the four major existential grounds of human existence: others, body, time, and world. Experience and human life always emerge among these contextual grounds (Thomas and Pollio 2002).

My bracketing interview, two pilot interviews, and two additional interviews were presented to the University of Tennessee Phenomenology Group. It has been in existence since 1992. This group is composed of researchers and students who are familiar with the method of Thomas and Pollio (2002) for analyzing phenomenological data. The group meets every Tuesday in the nursing building located on the campus of the University of Tennessee, Knoxville.

During the past year, I drove from Kentucky twice a month to attend these meetings. The long haul was a time for reflection on my study. I often listened to participant interviews making mental notes until I could stop and write notes for future reference. Upon arrival at the meeting, the camaraderie and support kept me going when the light at the end of the tunnel seemed so far away. Being able to sit with peers and experts and discuss research, obtain feedback, share life stories, and celebrate successes are memories that will remain long after my dissertation is finished.

The purpose of this group is twofold: Members of the group listen to the researchers' bracketing interview and are able to point out if the researcher's assumptions resurface in the interviews or analyses and interpretation of the data must be supported by text.

The summary of steps in conducting an existential phenomenological study (Figure 1) (Thomas & Pollio, 2002) provides a sequential guide during the research process. The researcher's focus is divided among self, participant, and text during the study.

Upon completion of the study, the focus is redirected as the researcher prepares a final report for the research community.

After my initial analysis, I presented the thematic structure to the phenomenology research group for their feedback. Using words from the participants to describe the thematic structure provides an additional layer of methodological rigor. Thomas and Pollio's (2002) methodology recommends presenting the thematic structure using a diagram and textual description. This process is used to depict a visual representation of the thematic structure and the relationship of the themes. I will present this diagram in Chapter 4 as I discuss the learning experiences of the veterans that I interviewed. Following is a flowchart of the suggested steps in conducting an existential-phenomenological study utilizing the Thomas and Pollio method (2002):

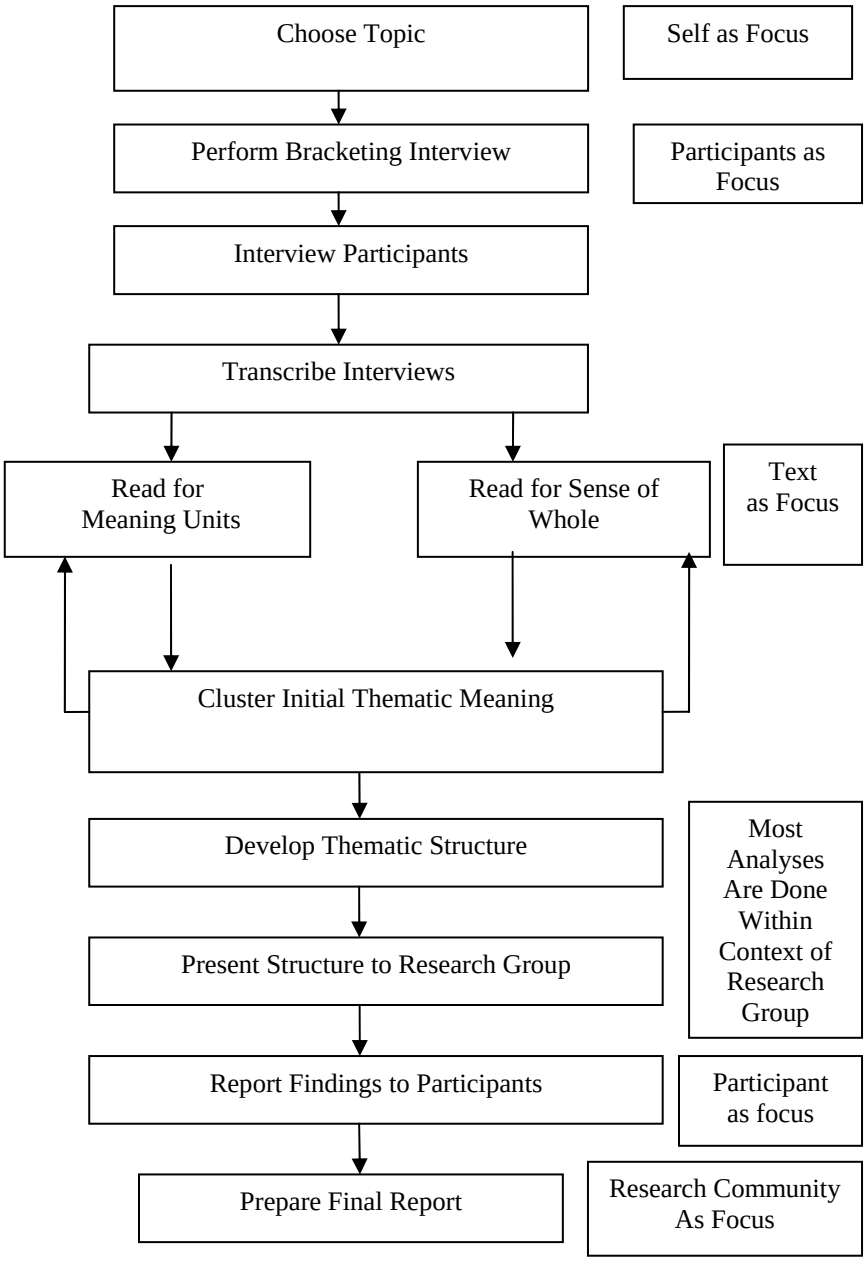

Figure 1. Summary of steps in conducting an existential-phenomenological study. From Thomas, S.P. and Pollio, H.R. (2002). *Listening to Patients: A phenomenological approach to nursing research and practice.* Reproduced with permission of Springer Publishing Company, LLC, New York, NY 10036.

Validity

Validity is a term that is used in qualitative and quantitative research, but has different definitions for both methodologies. Janesick's (1998) definition of validity in qualitative research suggests that explanation and description of the information obtained be credible in order to be valid. Hammersley (1987, p. 69) describes qualitative validity as "an account is valid or true if it represents accurately those features of the phenomena, that it is intended to describe, explain or theorise." Thomas and Pollio (2002, p.41) state, "Validity resides in the researcher's confidence in the meaning proposed." Validity was obtained in this study by presenting interviews in the University of Tennessee Phenomenology Group, using participants' words to define themes and finally returning to the participants with the thematic structure to obtain their feedback. One of the participants replied, "Yeah, you are right on track."

Summary

This chapter provided an overview of the existential phenomenological method used for this study. As previously stated this method was pioneered by Pollio, Henley, and Thompson (1997), and further developed by Thomas and Pollio (2002). Recommended steps (Figure 1) were followed which resulted in methodological rigor. Validity was achieved as research group members agreed with this researcher's thematic structure of the lived experience of the veterans with age-related vision loss who learned

to successfully use assistive technology. Participants confirmed the interpretation of the experience of learning to use assistive technology.

CHAPTER FOUR:

FINDINGS

An existential phenomenological study using Thomas and Pollio's (2002) methodology was conducted to understand the lived experiences of seven men with age-related vision loss who learned to use assistive technology. In this chapter, I will begin by describing the background of the participants including: age, visual impairment, and the assistive technology they have learned to use. Additionally, contextual information is provided for each participant. Next, I present the thematic structure, along with a visual representation depicting relationships among the themes. Finally, another layer of validity will be established by presenting comments made by the participants who supported the description of their experience.

Description of Participant Demographics

Participants ranged in age from 58 to 89 years. Visual impairments included Retinitis Pigmentosa, Diabetic Retinopathy, Histoplasmosis, Macular Degeneration, and Glaucoma. Of the seven participants, six were Caucasian and one was African American. Assistive technology devices used by participants in this study included closed circuit televisions, screen enlargement software, magnifiers, scan and read programs, medication bottle readers, GPS systems, and the white cane. Each individual used an average of five devices. Following is a table of the participant's demographics (table 1):

Table 1. Demographic Data for Study Participants

Name	Gender	Race	Age	Visual Impairment	Technology Used
Arnold	M	AA	69	Histoplasmosis	CCTV, ZoomText, Trekker, white cane, JAWS, talking watch
Barnes	M	C	68	Diabetic Retinopathy	CCTV, ZoomText, Trekker, white cane, Jordy
Brown	M	C	58	Retinitis Pigmentosa	CCTV, ZoomText, Trekker, white cane
Collier	M	C	85	Glaucoma	CCTV, ZoomText, white cane, handheld magnifier
Johnson	M	C	88	Macular Degeneration	CCTV, ZoomText, white cane, scanner
Jones	M	C	89	Macular Degeneration	CCTV, ZoomText, white cane, Open Book, Script Talk, talking books
Smith	M	C	83	Macular Degeneration	CCTV, Trekker, Script Talk, SARA, JAWS, Magic, white cane

AA=African American
C=Caucasian

Commonalities are that each man served in the military, he is a member of the same local Blinded Veterans Association, and he volunteers at the same Veterans Administration Medical Center (VAMC). In addition, the experience of learning to use assistive technology was accomplished at a Department of Veterans Affairs Blind Rehabilitation Center.

Study Participants

The following pages offer a brief introduction to each participant. These are presented in order to set the context for the study, share additional information about each participant, and provide a snapshot of his life-world. All names used in the following descriptions are pseudonyms.

Mr. Arnold

Mr. Arnold lives alone in a huge house. He has all types of technology. Prior to losing his vision, he was in the real estate business and is technologically savvy. When I arrived at his home, a friend of Mr. Arnold, who I followed into the kitchen, greeted me. Mr. Arnold was making a pot of coffee and followed my voice as he extended his hand. .I informed him that he had a fan club as several participants told me I must interview him. He chuckled as he felt for the back of the chair to locate his seat. I commented about the openness of his house floor plan and he proceeded to tell me about some of the technology he used because he lived alone. A computerized voice announced that the front door had opened and I observed a head turn in that direction. He informed me the

voice was a part of the alarm system that let him know someone had entered the house. We heard voices in the foyer as his friend called out that she had answered the door.

Our discussion continued and I was not surprised when informed Mr. Arnold had been in a leadership position in the military. His voice and stance provided a profile that depicts someone who is a leader. When discussing his experience about learning to use assistive technology, he reflected on individuals who have not achieved the same level of independence that he has because as he stated, “They are not motivated.”

Mr. Barnes

Mr. Barnes was supposed to meet me at the VAMC. The weather did not cooperate as we experienced a downpour. I attempted to contact Mr. Barnes and did not receive an answer on his phone, so after waiting an hour and leaving a message with one of the volunteers I left the facility. I found out the following day that Mr. Barnes did arrive and I felt horrible knowing he had endured that horrible weather. I scheduled our next appointment at his home. I arrived at a dimly lit house on a deserted street and knocked repeatedly on his door. When I did not get an answer, I called his number on my cell phone and when he answered, he informed me he was upstairs and would be down.

The door opened and a huge smile and an outstretched hand greeted me. He escorted me into his kitchen, casually mentioning the clutter and explained to me he had never been married. Prior to losing his vision, he had acquired computer technology skills by taking electronic coursework through correspondence courses. At the onset of his vision loss, a large monitor and screen enhancement software had been purchased and skills were acquired independently. Descriptions of learning to use assistive technology

included: "*I became a hood ornament.*" He sensed the anxiety in my voice as I questioned him about this remark and laughingly explained he had been hit by a car when independently practicing mobility skills using a white cane. Mr. Barnes travels two miles independently to the grocery store using his white cane, in spite of this accident. He is seeking employment in the computer field.

Mr. Brown

At age 58, Mr. Brown was the youngest participant. He chose to be interviewed at the hospital where he was volunteering. Mr. Brown is married and volunteers at the Veterans Administration Medical Center several times a week. He appeared nervous during the interview and would tell jokes apparently to elicit a laugh from me. Reluctance was a term used to describe his initial feeling about using assistive technology. Acceptance and dependence portray current feelings about assistive technology use. He is proud of his accomplishments learning to use technology and is often invited to be a beta tester of new assistive technology. Prior to attending training at the rehabilitation center, Mr. Smith had never used a computer.

Mr. Collier

Mr. Collier is a Veteran of World War II. I arrived at his home on New Year's Day and was led to his study after being introduced to his wife. After showing me his assistive technology, he began his story by explaining his initial unwillingness to give up driving when diagnosed as legally blind. He shook his head when describing his "stupidity" using a grandchild to read road signs and report obstacles as he was driving.

Learning to use public transportation is one component of training at the rehabilitation center. Upon returning from the training, Mr. Collier decided to practice these newly acquired skills. He describes a scenario where he decided to take a bus to the VAMC where he volunteers. After about five futile attempts at getting on the correct bus, Mr. Collier was able to reach his destination. He contacted the transit authority and requested maps of the local area. Pursuit of this desire resulted in a volunteer position on the advisory board in public transportation, which ultimately led to part-time employment.

As he spoke, he appeared humble about his knowledge of assistive technology. When discussing the learning experience, his voice was empathetic as he described the veterans who were sent home without technology because they did not meet the requirements of the training.

Mr. Jones

Mr. Jones lives in an apartment with his wife. When I knocked on the apartment door a short man, who appeared bashful, answered it. As I followed him to the table, the first words I heard sounded apologetic, “I hope I can tell you something that will help your study.” I assured him that anything he told me would be a benefit. He was aware I was a veteran so several minutes were spent discussing our military backgrounds. Mr. Jones served during World War II and I asked him if I could return in the future and talk about his experiences being in the military. “Oh, yes, anytime” was the response. He went on to explain that he had become an introvert because in addition to vision loss, he used hearing aids. His demeanor changed when speaking of the difficulties recognizing

individuals in the apartment complex hallways. Talking about his experiences learning to use technology prior to the vision loss indicated learning was acquired by reading a manual.

Mr. Johnson

Mr. Johnson lives with his wife and when I arrived at his home after getting lost trying to locate it, he greeted me at my car with open arms and hugs. It was evening when I arrived and I was a little apprehensive watching Mr. Johnson navigate his long entranceway without his cane as I followed behind him into his house. He introduced me to his wife and directed me to the dining room table. He began by telling me about his duty during World War II. This was briefly interrupted by his wife who said, " She doesn't want to hear about that" and continued by telling me every time they go somewhere he has to tell someone about his time in the military. I responded that I in fact would like to hear about his adventures and would visit again in the future. Mr. Johnson had previously been a teacher and an attorney. He appeared excited about the interview but his appearance changed as he spoke about his vision loss. He fumbled with the microphone that had been placed on the table and apologized once he realized what he was doing. He started the interview by saying, "First thing, you go blind, you can't see and nothing works. I have macular degeneration and they decided they cannot do a thing in this world for me, nothing, other people say they can get their eyes fixed but they cannot get mine. I wanted to go in a corner and cry." Volunteer work at the hospital is part of his life-world. He also walks daily in his neighborhood. Mr. Johnson uses his computer to type letters, pay bills and maintain records.

Mr. Smith

I met Mr. Smith in the Blinded Veterans Association volunteer office and he guided me to the conference room. Using his cane to navigate the crowded hospital corridors, we entered the elevator and exited when the elevator speaker announced “third floor”. Upon entering the conference room, I began discussing the research project and Mr. Smith agreed to provide informed consent on the audiotape. He informed me that his daughter had a Ph.D. and he was glad to assist me in this endeavor. His interview began with information about his life before his vision loss and concluded with his life now. Mr. Smith was an accountant before his retirement. He was computer literate prior to his visual impairment. Building intricate dollhouses is a hobby that Mr. Smith continues to perform using assistive technology. Mr. Smith travels several times a year to Florida and he uses a screen enlargement program on his computer to reserve airline tickets.

Solitary walks along the beach are part of his daily agenda when traveling and using his portable voice enhanced GPS system has allowed this ritual to continue. Exuberance was detected in his voice as he spoke about his independence. Mr. Smith continues to work part-time as an accountant. He uses screen enlargement software on his computer so he can see the screen.

These brief snapshots of the study participants provide a foundation for the thematic structure of the research study. Each participant began the interview talking about his life before and after vision loss. While listening to each story I noted periods of grief, denial, and finally adjustment of the impairment. Individual learning experiences were documented and themes were constructed using the participants’ own words.

Following is a description of the thematic structure that was presented to two of the participants for validation. One participant stated, “Yes, that is it”. The other participant’s comment was, “Yeah, you are right on track.”

The Contextual Ground

When a person experiences vision loss they leave a familiar life-world and enter a new, foreign one. The new world is the life-world of a visually impaired person. This life-world differs from the world that existed prior to vision loss. Participants spoke of his life-world (Schutz, 1989) before and after vision loss. This discussion included how the two worlds differ. They spoke of modifications they needed to use in order to complete activities of daily living. Introduction to this new life-world began with learning to use assistive technology such as a white cane, CCTV, and computer technology. This was followed by a discussion of changes that were necessary because of the impairment. The men in the study indicated that not being able to drive bothered them the most. Most of the men in the study indicated they used public transportation such as buses. A few utilize transportation that is available for use by individuals with disabilities; this service will come to your door and pick you up. Individuals who chose not to use that service gave reasons that included, “They’re not dependable”, “They’re not nice people”, as the reasons they chose to use the regular bus. In some instances, a walk of a mile of more was necessary to access the transportation system.

The experience of individuals with age-related vision loss was grounded in others, body, and time. Each interview was clearly contextualized in the ground of others:

Others include how each participant was perceived by other people because of being visually impaired. Instructors are others that teach the individual with vision loss how to adapt to their new world. Finally, talking with other people who acquire vision loss is a constant ground in the learning experience. The second ground of the learning experience was body. An individual perceives the world through one's body (Merleau-Ponty, 1962). Because of this change in the physical body, learning needs to occur in a different modality. Participants had to learn to use other senses. They described learning how to use the senses of hearing, feeling, and touch and residual vision to access their new assistive technology. Learning to use a white cane required listening to sounds that resonated when the cane was tapped on different surface. Berndtsson (2005) interviewed individuals to determine the learning experiences of using a white cane. Results indicated, "Learning to use a long cane and to use it in public has in this inquiry stood out as a complicated process involving the whole body being in the world (Berndtsson, 2006, p. 6)."

The contextual ground of time was constant as participants described the time needed to learn how to use assistive technology, time before loss of vision, and they spoke about going back in time when they learned how to walk with a cane. One man stated, "It was like watching my grandchildren learn to walk."

Thematic Structure

Through my interviews with the seven participants, I was able to identify four themes. The first theme centered on the importance of the instructors, which I refer to as "They take you by the hand and take you through it." The second theme is "Learning to do it in a different way". Several of the participants had used computers previously but as a result of his visual impairment, they had to re-learn how to do things. The third theme is "I found that I can be self-sufficient". After the participants learned how to use assistive technology, they were able to maintain independence. "Encourage other veterans" is the fourth theme, which focuses on sharing acquired knowledge with others. Some individuals with visual impairments experience depression when they receive the diagnosis of visual impairment. The veterans in the study obtained skills and encourage other veterans to learn to use assistive technology in order to maintain self-sufficiency.

The experience of learning to use assistive technology begins upon arrival at the rehabilitation facility. Participants' narratives included the importance of the instructors, as seen in the description, "They take you by the hand and take you through it." (Theme One). Instructors were perceived as encouraging, accepting, and non-judgmental.

The learning experience was described by participants as: "Learning to do it in a different way." (Theme Two). Several of the participants had used computers previously but because of his visual impairment, they had to re-learn how to do things.

Once the participant learned to do it differently, a sense of accomplishment was achieved and confidence was returned as one participant expressed his accomplishment, "I found I can be self-sufficient." (Theme Three). The men in the study expressed their

concern for other veterans who did not successfully complete the program or did not attend training at a rehabilitation facility for one reason or another by “Encouraging other Veterans.” (Theme Four) This camaraderie was seen at the rehabilitation facility and upon return to the volunteer site. Discussing the rehabilitation program and demonstrating technology to other veterans with visual impairments support the benefits of assistive technology. As one looks at the visual depiction of the thematic structure, it is possible to see that the existential ground of the experience is others, body, time. The thematic structure is depicted in Figure 2.

. The participants in the study had a period of time to decide if they wanted to attend a rehabilitation facility to learn to use assistive technology. Once this decision was made and they decided to attend training they were met by instructors who “take you by the hand and take you through it” (Theme One). Arrival at the facility is placed in the center because time had passed since a decision was made to attend training. An arrow points to the left to indicate going back; the learning experience was described by one participant as “learning to do it (things) in a different way” (Theme Two). “I found I can be self-sufficient” (Theme Three) is placed above and to the right to indicate the passing of time that occurred during the training process. Finally, “Encourage other veterans” (Theme Four) is indicated by an arrow to show a progression in time during the learning process. I will discuss each theme in further detail and provide words from the participants to describe this phenomenon.

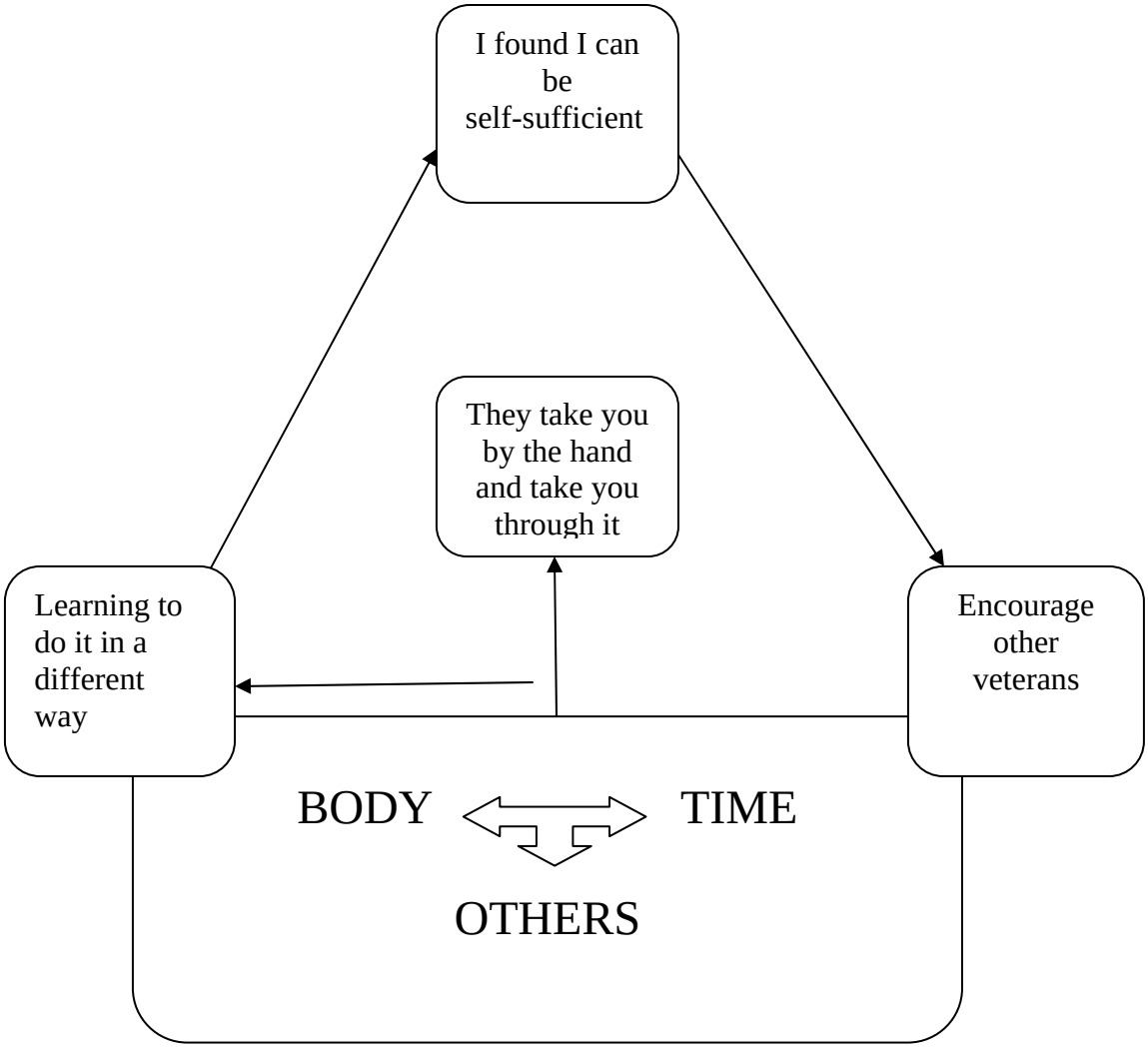

Figure 2. Thematic Structure of the Learning Experience

Theme One: "They take you by the hand and take you through it"

All participants traveled to a Blind Rehabilitation Center which was located about three hundred miles from Kentucky. They left a familiar life-world; one where sight was used as a method of perception and entered a new life-world with uncharted territory. The theme,"They take you by the hand and take you through it", describes the instructors at the Blind Rehabilitation Center. One of the principal elements of this theme was that instructors provided individualized instruction.

The words of Mr. Arnold illustrate this well:

> *You have a one-on-one in most areas, as far as mobility, as far as visual, different things, you have different instructors all the way through and to me it was taking you step by step. In fact, the original training was a total of nine weeks. Just strictly learning the basics. Another six weeks at the blind center itself so it was very, very helpful. I've got nothing but high praise for them. Really, they were very patient, they take their time, and it is one on one. I found them super. My instructors were very good. I think what was good about them was their patience and willingness to go out of their way. To see that you got everything from this training that you could. But I thought their patience and their willingness to work with you up to whatever level you wanted to go to, with the*

computer. I think that was the key to the whole training. They didn't try to put everyone in the same cookie jar. (Mr. Arnold)

Another important element was the egalitarian approach that Mr. Johnson describes:

Well, I like them because they're not above me, they accept, when you ask them a question, they'll go with you here and there and cooperate with you. I don't know that I had a bad teacher. They were very good. They send me up there for something else and I'd learn it, they'd teach me and it was very good. (Mr. Johnson)

Several aspects of the training appeared to use a pedagogical versus an andragogical teaching approach (Knowles, 2004) but comments from the participants indicate instruction wasn't presented in a condescending mode. Mr. Brown shared the following comments:

Well, I would summarize it to the point of the experience of watching my grandchildren when they start from the point of the crawling stage, to the walking stage, to the desire to learn things, what things are. (Mr. Brown)

The experience of learning how to use a closed-circuit television is explained in the following example of teaching:

> *The way they start teaching you is real elementary. They give you a little card. (Pause) I'm trying to remember one of them. It was like a little story and you read the story on the CCTV and they give you a test on it. You can blow it up as big as you like. They do that until you can read I think 75 words a minute. I got up to 180, something like that. 'Course I cheated. See that brown thing, I use that, they put glass on theirs and that kills time. I can take that thing and move it myself and could move that thing in a hurry. And that is basically all they do. The original one didn't have all the things this one has. They made big improvements.* (Mr. Collier)

Mr. Collier's words describe a scenario and it is possible to visualize the learning environment. His description depicts an environment that is conducive to learning. Some of the instructors were blind and opinions varied among participants as to whether or not the instructor was effective in teaching as a result of this limitation. One participant felt that the instructor with the visual impairment was more understanding because he "walked in his shoes":

> *Most sighted instructors, now not all of them, just some of them, expect you to pick up things too quickly. Now there was a blind instructor up there and he taught JAWS, but, um, I think he was more considerate. I only had him for one day. It was a different situation because he understood our problem*

> *better, that one instructor did. He knew it was by feel. The tactile senses. Whereas the sighted person sometimes they don't quite get that. Like on my keyboard. I have a piece of Velcro on the f, j, shift keys, 1, and 0 on the number bar. I find it if I get my forefingers on the f and J. In fact they taught me to touch type up there*. (Mr. Jones)

Another participant had a different opinion related to a situation that occurred with another person who was at the facility receiving training.

> *They did him a terrible injustice. They gave him a blind instructor. A blind instructor can't teach a sighted person. I don't care what they say. They can't do it. They can teach blind people. It's difficult for a sighted person to teach a blind person.* (Mr. Collier)

It appears there are different views on the potential effectiveness of an instructor who is blind.

In summary, the participants entered the rehabilitation facility with a feeling of uncertainty. They had been previously presented with a diagnosis of a visual impairment that disrupted their life- world. Upon entering the rehabilitation facility, they were met by instructors who guided them through the process of learning to use assistive technology. This new life-world required training on using different methods and technology as participants "started life over" as an individual with a visual impairment. Although new

skills were needed, acquired skills were maintained by learning how to do it in a different way.

Theme Two: "Learning to do it in a different way."

Most individuals with age-related visual loss have some residual vision. Prior skills such as cooking, sewing, and using power tools can be continued by adapting or modifying some piece of the process. Using remaining senses is one way of adapting to loss of vision. Sensory loss occurs as part of the aging process; as a result, individuals must learn to develop sensory awareness by doing things in a different way. At the facility, an exercise using blindfolds is used to demonstrate this learning process. Participants experienced different emotions during this demonstration that included fear of being "blind" to building confidence. Mr. Collier shared his initial experience of having to use blindfolds when he was learning to use a white cane to travel independently:

> *Well, let me explain just a little bit about going to the rehabilitation facility. Going to the facility their philosophy is they treat you, irregardless of what your position is when you get there, they treat you as if you are going to go blind. They put a blindfold on all of us that could see and make you start using the cane just as if you are totally blind. And you just start in the hospital and you get very confident just knowing how to navigate within the hospital, through air current on*

your cheeks, feel the different materials with the cane and what not, so that you get very confident. Then they take the blindfold off, then they take you out and start you on outdoor training and I was very reluctant at that time on the big 10 lane streets, and so they work you up. They start you out on the two lane, four lane, so forth, till they finally take you to the ten lane and there you go across, stoplight, stoplight, stoplight until you feel real comfortable on how to cross streets. That is the first thing in orientation and mobility and in so doing; it gave you a lot of confidence. (Mr. Collier)

Another participant explains his experience paying attention and using his sense of hearing:

Well again, my experience was paying attention; they take you out, extensively, to the point of hanging stuff in trees, to the point you have to identify objects so you don't run into it. The curbs even show shadows you can tell even if you can't see. The cane is an extension of your hand. You got it out there and you don't have to look down to know where you're at. When I'm using it I'm steady tapping side to side where I know where the grass is at, etc and try to stay to the right. Using it, learning the commands, people know you are visually impaired. I can pick up shadows but I can't tell what it is.

> *Then too, listening to sounds, I don't think I'm as good at that as a lot of people are. A lot don't use the cane the way they should.* (Mr. Arnold)

Initially, reluctance to learn to use a cane was a common occurrence among participants. Several participants felt using a cane would draw attention to them; others felt they didn't need it yet. The following quotes portray reluctance in the participants' words:

> *I went there and I knew my vision was bad but I wouldn't admit it was bad enough to use a cane and people could tell I was blind for GOD sakes. I won't say I resisted using it but I had a very good instructor. I don't know if you ever have done cane training but they put you under blindfolds. I got put under blindfolds, it gave a whole new appreciation of trying to get around without being able to see, and without the cane, you can kill yourself pretty much. I really did learn how to use the cane, the more I used it the more comfortable I became with it and I began to realize by having a cane in my hand just made life a lot easier. Without any peripheral vision and it's crowded you tend to bump into people and with a cane in your hand, this may sound a little selfish, I'd say sorry didn't see you and they'd say don't worry about it. It's not a problem. Other than, "Watch where the hell you're going". So, that*

became, I carry the cane, well now I can't really get around, For awhile I'd carry the cane as much for people to know I was blind as I did to find out where I was going. Now I use it for both things because my visions gotten so bad, now I don't navigate real well without the cane at all. (Mr. Brown)

Learning to use the computer required the addition of specialized software, ZoomText™. This is a screen enlargement program that has audio output if needed. Participants who had already acquired computer skills discuss this learning process:

There's a lot to remember, the commands, and other things along this line and different keystrokes but you have to learn not to use your sight to type. Going online, it takes a lot more listening. You have to learn to use your hearing, and you have to remember a lot. Well again, my experience was paying attention. (Mr. Arnold)

Mr. Brown had never used a computer before going to the blind rehabilitation center. His experience is provided:

I never really used a computer before. I didn't know how to turn it on. So a session pretty much was, once you knew how to turn it on, when the instructor got there it was just like a regular class except the computer talked to you, and we'd go through the different functions on the computer. They would

say, This is how you turn the computer on, this is how you open a file, this is how you open a new file, open an old file. This is how you bring up word. This you bring up. This is how you set it up so ZoomText automatically comes up so you don't have to mess with the keyboard every time you turn the computer on which is really helpful (chuckles). Because until ZoomText comes on you can't see the screen, you can see it but you can't read it. It was just like that . It was new stuff. We started off with just the basic until we learned what ZoomText did. Then we started to learn the computer just like anyone else would. The Microsoft because it was a Microsoft XP system and you just start and go through and learn what was on it. How to use Word, how to use Excel. The different programs or systems that were on the computer. And we actually had homework at night because you have access to the computer 24 hours a day. So you'd come in at night and they'd give you things to do on the computer, learn how to print stuff out, how to use the scanner. How to make it read to you. That was pretty much the six hours. You'd sit there and learn how to use it by doing it. They would explain to you how to do it but they made you sit there and learn how to do it yourself. Nobody typed for you, nobody pushed the buttons for

you, you'd sit there and do it yourself until you got it right. There were two of us in the class. That's the largest class they have and both of us were learning the same system. Yeah, the way they teach computers up there, it's a two person class and one teacher and it's pretty much one on one instruction which is the way the rehab center works with all the classes. But yea it pretty much was one on one instruction. And it was a classroom but a two person classroom. It was all set up for you but you had to take it apart and put it back together so you would know how to do it when you got home by yourself. (Mr. Brown)

Participants did learn to do a number of things in a different way and acquired new skills as a result of learning to use assistive technology. This learning experience restored confidence when individuals realized they could be self- sufficient.

In conclusion, individuals acquiring a visual impairment experience a roller coaster of feelings and emotions. Most are unaware that modifications and adaptations are available to ease this transition. Rehabilitation and training in modifications and adaptations can provide independence and self-sufficiency. Theme Three, "I found I can be self-sufficient" is the 'aha' moment in the learning process.

Theme Three: "I found I can be self-sufficient"

Throughout the rehabilitation process participants learned how to use assistive technology and, as a result, maintained independence. Mastery of each device is required before the participant is provided with the equipment. Participants are required to complete tasks independently prior to leaving the facility. Pride and confidence are apparent in Mr. Smith's words when discussing this accomplishment.

After learning how to use a magnifier, Mr. Smith relates his experience going to McDonalds:

> *It was finding out that I didn't have to walk in with someone else, you know, and say, What are they serving?, What do they have*? (Mr. Smith)

His discussion continues:

> *I found I can be self- sufficient, I can do my own cooking, my own washing, and the only thing I had to give up was driving the automobile. But everything else, with all the technology I learned how to use, it was opening up; I was not sitting at home twiddling my thumbs*. (Mr. Smith*)*

Mr. Johnson wanted to be able to read his mail and after learning how to use a CCTV proclaimed,

> *Then the CCTVs, they put me in the chair and taught me how to use that and I had to redo it and when they got through with the lesson I had to do it to prove to them I could do it and all and so anyway I followed up on anything that they taught me to do and I did learn to do it and I was able to use it*.(Mr. Johnson)

Mr. Barnes lives alone and has family in the area but being independent and self-sufficient is important to him because he believes,

> *There's a limit to how much you depend on someone else*. (Mr. Barnes)

He travels 30 miles by bus to volunteer at the VAMC and walks a mile or more to the grocery store and carries groceries home in a backpack.

Theme Four: "Encourage other veterans"

Throughout the interviews, participants described how they felt when they learned about training and equipment they could receive if they went to the Department of Veterans Affairs Blind Rehabilitation Centers. Just knowing that training was available boosted morale and hope in each man. One participant described the anguish he felt the day he was told his sight could not restored:

> *The doctor called me in and said Mr. Johnson, you have macular degeneration and you're not going to be able to see nor do things or read or do things that you are used to doing and he went on to say, you'll never have your sight again or see again like you have done and so he said this to me and I just felt like getting over in the corner and crying. The doctor called me in and told me that. So then I just went home and Mr. White called me and said, I want you to come down here, we're going to help you. I was amazed. He said you are going to go to a Blind Rehabilitation Center and learn all this equipment and things.* (Mr. Johnson)

Throughout the training, reciprocity was apparent. This resulted in a collaborative learning environment. Knowledge was shared among students. This is illustrated in the following scenario.

> *I worked with the other veterans and kept them out of trouble. I learned a little. Nobody knows everything and the best way to learn is try to teach it to somebody else, cause they'll think of something you never thought of.* (Mr. Barnes)

Mr. Jones tells about a situation he had with a veteran who was undecided about attending the Blind Rehabilitation Training Center in the following exemplar:

> *I told one fellow you need to change your attitude, you'll never see again, they want to teach you how to use what you have left so you can be independent*. (Mr. Jones)

Gratitude was expressed by all the participants in the study. As they spoke about their experiences, they talked about sharing their new skills with other veterans who lose their vision. This unspoken code of "paying it forward" is illustrated in Mr. Johnson's words:

> *I would say that what I learned not only helped me but I pass it on to other people the ones that didn't go or want to go, and those I could help even though I am legally blind , I did. I did everything in the world trying to help people, I did.* (Mr. Johnson)

The men in my study are all volunteers at a Veterans Affairs Medical Center (VAMC). When other veterans are diagnosed with visual impairments, they are called upon to tell others the story of learning to use assistive technology. Mr. Johnson shares these words of encouragement:

> *I'd tell them to go, go quickly, go, go, go. I recommended several guys to go up there. I was successful at learning and you can learn a lot. I'd tell them to do that.* (Mr. Johnson)

Summary

The goal of this study was to explore the experiences of older individuals who have learned to use assistive technology for age-related visual impairment. Analysis of the interviews revealed a life-world change that occurs over a period of time. Individuals experience a period of transition when they are diagnosed with an age-related visual impairment and require Blind Rehabilitation in order to maintain self-sufficiency. The experience was described as starting over as individuals acquired skills using assistive technology. Participants spoke of the reluctance they initially experienced, but proudly shared their successes with other individuals who had not received the training.

Chapter 5 will provide a discussion of the relevance this study has to adult educators, rehabilitation professionals and assistive technology practitioners. Finally, recommendations for future research will be provided.

CHAPTER 5:

DISCUSSION

The question that guided this study is: What are the learning experiences of adults with age-related vision loss who successfully use assistive technology?

Major Findings

The diagnosis of an age-related vision loss for a person began the journey of learning to use assistive technology. From the moment he received the news that his condition was not reversible, he started to think about the things he would not be able to do. Vivid images entered his mind as he thought about his future and the possibility of being blind. He was unaware that assistive technology was available that would allow him to continue most activities. However, he is a Veteran and had endured other obstacles during his lifetime. Some of the men engaged in battle during World War II, others served knowing they could be called into battle at any time. He was able to adjust to adverse situations. He would just need to learn about life as a person with a visual impairment. Being a Veteran is one requirement of receiving services in a Veterans Administration Blind Rehabilitation Center. Other requirements include meeting certain visual acuity and visual field parameters. Once a diagnosis of low vision is made, the veteran is referred to a Visual Impairment Service Coordinator who begins the process of assessment and referral into the life-world of the visually impaired.

When diagnosed with a visual impairment the men entered a new life-world. This being the world of an individual with a visual impairment. Each participant spoke of his life-world (Schutz, 1989) before and after vision loss. The men expressed initial fears

about vision loss increasing and several have undergone surgery to curtail further loss. One participant talked about how he felt when he was informed that nothing could be done to help him regain his sight. He stated, “I just wanted to go into a corner and cry.” However, none of the men in the study experienced prolonged depression or lack of independence as other studies have indicated (Horowitz & Reinhardt, 1998). This may be a direct result of the programs that are in place at the Department of Veterans Affairs that immediately route veterans with visual impairments to the Visual Impairment Services Team (VIST) Coordinator for evaluation and referral.

The experience of individuals with age-related vision loss who learned to use assistive technology was grounded in others, body, and time. Each interview was clearly contextualized in the ground of others: Others included peers in the learning environment, instructors at the rehabilitation center, family members, and individuals without visual impairments.

The second ground of the learning experience was body. Participants had to learn to use other senses. They described learning how to use the senses of hearing, feeling, and touch and residual vision to access their new assistive technology. Learning to use a white cane required listening to sounds that resonated when the cane was tapped on different surfaces. Berndtsson interviewed individuals to determine the learning experiences of using a white cane. Results indicated, “Learning to use a long cane and to use it in public has in this inquiry stood out as a complicated process involving the whole body being in the world (Berndtsson, 2006, p.6).”

Finally, the contextual ground of time was constant as participants described time spent learning how to use assistive technology, time before loss of vision, and abstractly as they spoke about future endeavors.

The thematic structure consisted of four themes. The theme, “They take you by the hand and show you how to do it” introduces the role of the instructor. Instructors were perceived as guides into the visually impaired life-world. They facilitated the learning process, which began with an inquiry into the wants and needs of the visually impaired veteran.

Instructors provided instruction on the assistive devices by, “Doing it in a different way,” which is the second theme to emerge from the data. This method involved attuning the sense of touch, hearing, and smell. “Paying attention” to traffic sounds, “feeling with the tip of a cane” to distinguish curbs, grass, or a tile floor, and “smelling items ” such as liquids in containers introduced different learning modalities. One-on-one instruction, group instruction, learning by doing, and repetition were utilized in the learning environment.

Mastery of each device promoted confidence and hope as described by theme three, “I can be self-sufficient.” Demonstration of device use to family members, who wondered about the future, evoked memories of life before vision loss for the veterans. Learning continued even after the training was finished. Participants practiced skills and acquired new ones as they adjusted to doing things differently.

Upon returning home, computers were set up by the veterans and letters or emails were sent to family and friends using screen enlargement software with audio output. Knowledge and experiences were shared with other veterans who were diagnosed with a

visual impairment. Theme four, “Encourage other veterans” provided information about the rehabilitation center to other veterans from individuals who had completed the training.

Discussion and Conclusion

We live in an aging society. It is estimated that more than 3 million Americans have low vision (National Advisory Eye Council, 1998). Worldwide between 65–75% of the population over age 65 are visually impaired (Bailey & Hall, 1990).

Previous studies of adults with age-related vision loss (Hersen & Kabacoff, 1995) indicate a decline in quality of life. Results from my study indicate that the men who learned to successfully use assistive technology pursued hobbies, work, and traveling by adapting how the tasks were accomplished. The inability to read or drive a car increases the risk of isolation and depression (Bishop, 1996). The men in my study learned to use the local transportation system. One became a board member and then was hired to train the bus drivers on how to assist individuals with visual impairment. Ability to read may help individuals adjust to his vision loss (Trudeau, Overbury, & Conrod, 1990). There is assistive technology available to assist an individual with reading. Magnification devices or software can assist with reading ability but training is required before an individual can use it successfully. Studies (Strong, Jutai, Bevers, Hartley, & Plotkin, 2003; Copolillo & Teitelman, 2005) indicate training or lack thereof is a primary reason for technology abandonment. Individuals in my study indicated that they were given a choice in the type of technology they wanted to learn to use. Training was provided with equipment that

was provided to the veteran upon completion of his training program. This allowed the participants to adapt the technology to meet their individual needs. Self-direction and self-efficacy were apparent as descriptions of learning to use technology were described.

The participants in my study were individuals with age-related vision loss who learned to use assistive technology successfully. They are able to continue working with tools they previously used in a different way. This study of learning to use assistive technology utilized an existential phenomenological approach which enabled the participants to describe the experience of learning to assistive technology from the life-world view of the visually impaired and the analysis of the transcripts provided insight into the learning process of these men.

The men in the study learned to use assistive technology in a learning environment that generally reflected assumptions of Knowles'(1984) model of andragogy, even though the actual terminology associated with andragogy was not specified. The experience of learning to use assistive technology for the participants occurred in an environment where facilitation of instruction was adapted to meet the wants and needs of each individual.

Acquiring a visual impairment resulted in a change in social role and an urgency to learn how to adapt to this new life-world. Self-direction was evident as the men guided the learning process adapting devices to accommodate their learning style. They wanted to acquire skills to be able to maintain self-sufficiency and independence. They adjusted to a change in learning modality and as a result became successful users of assistive technology with support from facilitators and peers. Next, I provide recommendations for

practice targeted at adult educators, rehabilitation professionals, and assistive technology practitioners.

Recommendations for Practice

The men in the study acquired an age-related visual impairment at some point in adulthood. Facilitators of adult learning need to be aware that assistive technology is available to support individuals with disabilities. They also need to recognize that many individuals with disabilities may not want to go to a specialized center to acquire skills. Instead, they may want to learn at a local college or adult learning facility.

The following recommendations are targeted to facilitators of Adult Education including rehabilitation professionals and assistive technology practitioners:

1. Foster a learning environment that includes the assumptions of andragogy (Knowles, 1984) that includes allowing the learner to guide the learning process by discussing needs and preferences; inquire about prior experiences to determine styles and learning modalities; be receptive to questions about why something has to be done.
2. Listen to the life-world experiences of your students. Remember that this is a new life-world and relearning, modifications, and or adaptations may be required during this transition.
3. Be aware that adults with acquired disabilities come to the learning environment with an immediacy to acquire skills to maintain social roles. Time is crucial and teaching methods may need to be modified.

Recommendations for Research

We live in an aging society. It is estimated that more than 3 million Americans have low vision (National Advisory Eye Council, 1998). Worldwide between 65–75% of the population over age 65 are visually impaired (Bailey & Hall, 1990). Access to assistive technology for individuals who are not veterans can be costly. States provide limited services such as rehabilitation teaching but CCTVs, computers, and other technology usually has to be purchased by individuals. Having access to this equipment may permit an individual to remain in the home environment. Vision assistive technology is usually not considered to be a durable medical piece of equipment so it is not covered by health insurance. As a result, individuals who acquire an age-related vision loss must purchase the equipment themselves. Providers of assistive technology need to be informed about adult learning methods and philosophies that have been used successfully in order to reduce abandonment rates.

Following are recommendations for research:

1. Additional studies need to be conducted with individuals who use other types of assistive technology to determine if choice and training have an effect on assistive technology usage or abandonment rate.
2. Life-worlds need to be studied to learn about different cultures, gender, and race to find out if technology is culturally acceptable.

3. Finally, individuals who have stopped using technology need to tell about their experience to determine if appropriate device and training were received.

Conclusion

Existential phenomenology was the method chosen to explore individuals with age-related vision loss who learned to use assistive technology. The men in the study shared their stories of adapting to a vision loss with the use of assistive technology. They indicated that learning to use technology increased self-sufficiency and promoted independence. These individuals recommended that others who acquire this impairment seek rehabilitation services immediately.

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APPENDIX: INFORMED CONSENT STATEMENT

INFORMED CONSENT STATEMENT

Participation in a Research Study about Learning to Use Assistive Technology

INTRODUCTION

You are invited to participate in a research study. The purpose of this study is to describe individual's experiences learning to use Assistive Technology such as CCTVs.

INFORMATION ABOUT PARTICIPANTS' INVOLVEMENT IN THE STUDY

If you decide to participate in this research study, you will be asked give some information about yourself and answer questions about your experiences with assistive technology.

RISKS

The anticipated risk of harm to you by participating in this research study is no greater than risks ordinarily encountered in daily life or during the performance of routine psychological examinations or tests.

BENEFITS

The results of this study will be used to provide adult educators with information to assist in developing training programs for adults with vision impairments.

CONFIDENTIALITY

The information in the research study records will be kept confidential. Data will be stored securely and will be made available only to persons conducting the study unless you specifically give permission in writing to do otherwise. No reference will be made in oral or written reports which could link you to the study.

COMPENSATION

If you participate in this study, you will receive a small gift certificate after the interview is completed and reviewed.

EMERGENCY MEDICAL TREATMENT

The University of Tennessee does not "automatically" reimburse subjects for medical claims or other compensation. If physical injury is suffered in the course of research, or for more information, please notify the investigator in charge, Patricia Duffley-Renow (502) 425-2003.

CONTACT INFORMATION

If you have questions at any time about the study or the procedures (or you experience adverse effects as a result of participating in this study), you may contact the researcher, Patricia Duffley-Renow at (502) 425-2003. If you have questions about your rights as a participant, contact Research Compliance Services of the Office of Research at the University of Tennessee (865) 974-3466 or Dr. Ralph Brockett, Dissertation Chair at (865) 974-2222.

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed.

_____

CONSENT

I have read the above information. I have received a copy of this form. I agree to participate in this study.

Participant's name (please print)_____

Participant's signature _____Date_____

Investigator's signature _____Date _____

VITA

Patricia Duffley-Renow obtained her GED in 1973 and 12 days later entered the United States Woman's Army Corps where she served as a Medic for 8 years. She entered the University of Tennessee in 1982 to pursue a Bachelor of Arts Degree in Academic Psychology, which she obtained in 1985. Her academic pursuits continued and she was awarded a Master of Science in Safety Education & Service in 1993, a Master of Science in Rehabilitation Counseling in 1995, and received her Ph.D. in Education in May 2008. She is employed by the Department of Veterans Affairs as a Rehabilitation Counselor.