Accommodation Needs for Teachers Who Are Blind and Teach Students with Visual
Impairments in the United States of America

by

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Abstract

This study was intended to explore and understand the experiences and perceptions of teachers who are blind concerning what accommodations they use or need to teach students who have visual impairments (VI) and to establish their opinions on what can be done to make their situations better. The study was necessitated by the fact that many studies have been conducted on accommodations for general education teachers who are blind, but specific literature on teachers who are blind and teach students with visual impairments is scant. In addition, information on the strategies that teachers who are blind that teach students with visual impairments can use is limited, hindering the supports that teacher preparation programs can provide to their teacher candidates who are blind and preparing to be teachers of students with visual impairments.

A qualitative case study approach was used, and the participants were four teachers who are blind and teach students with visual impairments in public and residential programs in the United States of America. Data was collected through interviews, observations, and document analysis.

Through the data obtained, this study has illuminated the strategies that teachers who are blind use to teach their students who have visual impairments, the importance of having teachers who are blind work in the programs for students with VI, the perceived challenges that the teachers experience, and the possible ways in which the situations can be improved.

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CHAPTER I

INTRODUCTION

This chapter defines the different conditions of visual impairments and describes the background of the study, the statement of the problem, the purpose of the study, the research questions, the potential significance of the study, and the limitations. A definition of terms is also provided.

Visual impairment (VI) includes low vision and total blindness. The Individuals with Disabilities Education Act (IDEA) of 1997 (as cited in Belson, 2003) defines a visual impairment as “impairment in vision that even with correction adversely affects a child’s educational performance” (p. 170). Individuals with blindness do not have usable vision, but they may have some light perception and rely on their tactile and/or auditory senses to get information (Belson, 2003). People with low vision use their vision as the primary mode of getting information. Their ability to accomplish visual tasks can be enhanced through using compensatory visual strategies, low vision devices, and environmental modifications (Corn & Koenig, 1996).

In the United States of America (U.S.A.), the Rehabilitation Act of 1973 mandated that individuals with disabilities should not be discriminated against in places of employment on the basis of their disabilities (Osborne & Russo, 2003). Section 504 of the Act prohibits exclusion from participation, discrimination against, or denial of benefits to persons with disabilities, under any programs or activities that receive federal funding (Fiedler, 2000). Similarly the Americans with Disabilities Act (ADA) of 1990 mandated that individuals with disabilities be provided with reasonable accommodations

in their workplaces (Osborne & Russo, 2003). The Technology-Related Assistance to Individuals with Disabilities Act (Tech Act) (1988) is another piece of legislation that mandates the federal government to fund states so that they can create systems to deliver assistive technology and devices to persons with disabilities (Turnbull, Turnbull, Wehmeyer, & Shogren, 2013). If the laws are implemented as mandated, the people who are blind (e.g., teachers) should function at comparable levels with their sighted colleagues.

Mnyanyi (2009) identified teachers as learning environment creators, hence they should possess the knowledge and skills to: identify and address learners' needs, identify their role in curriculum accountability (plan lessons, assess, and report); design and implement teaching methodology, and manage the learning environment. Teachers for students with visual impairments are expected to make accommodations for their students to enable them to function like their peers who are sighted. In the situations where teachers who teach students with visual impairments also have a visual impairment or blindness, the teachers need to use accommodations to compensate for their visual conditions and enable them to carry out the responsibilities expected of them.

Background

Making accommodations for students with visual impairments involves visual inputs with materials and strategies that must be adapted for the students. As noted earlier, teachers who are blind and teach students with VI need to use accommodations to compensate for their blindness and teach their students effectively. Studies have been conducted on making accommodations to enhance learning for students who have VI. Cases of teachers who are blind and teach students with VI are scant. Lewis, Corn, Erin

and Holbrook (2003) noted that studies have been done on accommodations for general education teachers who are blind but less has been written specifically for people with VI who have chosen to be teachers of students with VI (TVIs). Merri and Monties-Cabot (2005) refer to a case in which new teaching practices had to be built for a teacher who was blind to suit both the common teaching requirements and the VI. They also had to modify the classroom teaching materials. Further research needs to be conducted in the area; hence, this study intends to explore the accommodations that TVIs with blindness receive or need to enable them to function effectively as they teach students with VI. It is anticipated that this research study will provide useful information that may guide policies concerning accommodations made for TVIs with blindness so that they can work more effectively with their students who have VI.

Statement of the Problem

Teachers who have visual impairments in the United States of America have reported frustration resulting from lack of “autonomy, control and freedom to make choices” (Lewis, Corn, Erin, & Holbrook, 2003, p. 161). The teachers have reported that, at times, they have to depend on other people to reach their places of work or to observe students during assessments. In addition, they have to deal with carrying heavy and bulky equipment and materials such as brailers, portable video magnifiers, handheld magnifiers, and braille paper that they need to use. Some assistive technology that may increase accessibility to learning resources for persons with VI are not as readily available as they are to their colleagues who are sighted because of cost implications and copyright restrictions (Perkins, 2012). Therefore, in spite of the fact that teachers who are blind can perform and achieve like their peers who are sighted, they may not be able to

do so because they do not always receive the disability-specific accommodations in accessible formats and in a timely manner. Lewis, et al. (2003) noted that information on the strategies that TVIs with VI can use is limited, and this lack of information hinders the advice and supports that teacher educators can provide to their teacher candidates who are blind and are preparing to be TVIs. It is my feeling that the gap that exists between the teachers who are blind and those who are sighted needs to be narrowed so that the playing field is leveled for every teacher.

Purpose of the Study

This study was intended to explore and understand the experiences and perceptions of teachers who are blind concerning what accommodations they use or need to function effectively as they teach students who have VI and to establish their opinions on what can be done to make their situations better.

Research Questions

The research questions for this study included:

- (1) What accommodations do the teachers who are blind use or need to function effectively as they teach students with VI?
- (2) What are the perceptions of teachers who are blind concerning the accommodations they ought to receive so they can effectively work with students who have VI?
- (3) What perceived accommodation challenges do the teachers who are blind face when teaching students who have VI?
- (4) What strategies do the teachers use to overcome their perceived challenges?

Significance of the Study

The anticipation was that the results of this study would provide useful information that can guide policies to ensure that accommodations are made for teachers with blindness to enable them to teach students with VI more effectively. The results can also be used to inform teacher preparation programs about some adaptive approaches that may be useful to their candidates with blindness who are preparing to be teachers of students with VI.

Limitations

Blindness is a low incidence disability and, as such, the population of teachers who are blind (participants for the study) is small and sparse. Conducting a qualitative study with such participants came with time and cost implications that were spent to reach the participants. I had to buy air tickets and hire taxis or rent cars to access my participants. I also spent many hours travelling to my participants to conduct interviews and observations. This definitely affected the number of participants that I could access and include in the study.

Another limitation may have resulted from the reactive and investigator effect (Toshakkori & Teddye, 2003). There could have been a possibility of response effect where the participants intentionally gave inaccurate or incorrect responses because of personal issues they did not want to reveal (Borg & Gall, 1988). Instances occurred where participants responded in such low tones that I could hardly hear what they were saying because of the fear of the administration hearing their comments. In addition, as a professional in the education of children with VI, I may have tended to seek answers that support my preconceived ideas, and in the process, ignored information that was

important for the study. Borg and Gall (2003) suggested that these sources of error can be reduced if the researcher carefully studies the target population, identifies the likely predispositions, and designs the study to eliminate the errors. However, these options were not possible in my case, considering that all my participants were not known to me, and I had neither met nor talked to any of them before.

Definition of Terms

Accommodation: According to the U.S. Equal Employment Opportunity Commission (EEOC) (ADA, 2008), accommodation refers to making adjustments to a person's environment or organizational practices so that a person with a disability is able to use resources and services in the organization at the same level with nondisabled peers in a more accessible format. Accommodation may call for change in presentation of information, response, setting or scheduling (Grossman, 2001). Accommodation, for a teacher with VI may require, for example, that he/she be provided with large print/braille copies of the same material that the rest of the staff members are using. For this study, I will use the term in reference to the modifications made to the teachers' working environments and the resources, services, and personal support they receive to enable them to function effectively as they teach the students with VI.

Low vision: According to World Health Organization (WHO) (2006-2011), a person with low vision has a visual acuity of less than 6/18 but better than or equal to 3/60 with the best correction or a visual field of less than 20 degrees in the better eye with best correction. For this study, some of the students with VI had low vision. I intend to explore the accommodations that the teachers who are blind use to make learning accessible to these students.

Blindness: Blindness refers to total blindness and legal blindness. Total blindness implies that a person has little or no visual sensitivity to light. The condition is rare, and people who have total blindness typically have severe physical damage to their eyes or the optic nerves. Legal blindness is a term used to determine eligibility for government funded services in the U.S.A. It has limited educational or rehabilitation value (Holbrook & Koenig, 2000). A person who has legal blindness has a visual acuity of 20/200 or less in the better eye. This acuity means that the person can see what a person with normal visual acuity (20/20) sees at 200 feet only when he/she is within 20 feet or a visual field that is less than 20 degrees at the widest diameter (Belson, 2003). WHO (2006-2011) defines blindness as visual acuity of less than 3/60 or a corresponding visual field of less than 10 degrees in the better eye, with best correction. I will use the term in this study to refer to the participants who have severe visual impairment and can only access information through the auditory and tactual senses.

Students with visual impairments: The term refers to students who have impairment in vision that, even with correction, adversely affects their educational performance. According to Belson (2003), the term is used to denote mild to severe vision loss, rather than defects in the eye itself.

Residential schools: Residential schools are a placement option in which students attend school as well as live there. According to the U.S. Office of Education (cited in Friend & Bursuck, 2012), few students with disabilities are educated in this manner. They are often students with severe multiple disabilities. Some students with visual impairments fall in these categories and are educated in residential schools.

Assistive technologies: Adaptive technologies for persons with VI include the mobility cane, dog guides, and assistive computer applications among others. Adaptive technologies help the individuals with VI to access information in a timely manner (Holbrook & Koenig, 2000). Belson (2003) observed that persons with VI need training and practice to use the assistive technologies efficiently.

Teachers of students with visual impairments (TVIs): Teachers of students with visual impairments (TVIs) are professionals who have been prepared at university undergraduate or graduate programs with a specialization in the field of visual impairments. These professionals teach students who have VI in schools, but they have clearly defined roles in the students' educational teams (Holbrook & Koenig, 2000). The responsibilities of the TVIs include giving direct instruction to the students with VI in the expanded core curriculum areas (e. g., braille), consulting with general and special education teachers and helping them to make learning more accessible to students (e. g., making tactile learning materials), and providing indirect services such as participating in the Individualized Education Program (IEP) teams and consulting with parents.

The expanded core curriculum (ECC): The expanded core curriculum areas for students with VI are the compensatory or functional skills and knowledge that the students need to acquire to meet their disability-specific needs (AFB, 2005). Teachers should use the ECC as a framework to assess, plan, and provide instruction. There are nine unique educational needs of students with VI that include; compensatory skills needed to access the core curriculum, orientation and mobility, social interaction skills, recreational and leisure skills, career education, use of assistive technology, independent living skills, sensory efficiency skills, and self-determination.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter reviews the studies that have been conducted and reported in relation to the need for accommodations for teachers and students who have visual impairment (VI). Specifically, the chapter reviews employment issues of people with disabilities, the legislative provisions, accommodations for persons with VI, and the challenges that teachers who are blind and teach students with VI experience as a justification for need of further research in education for students with VI.

Employer's Attitudes Toward Persons with Disabilities

A survey (Unger, 2002) conducted about the attitude of employers toward individuals with disabilities; covering 8 different disability categories revealed that employers prefer to hire individuals with certain disabilities over others. Employers showed reluctance and more concern about employing individuals with mental disabilities, and blindness as compared to other disabilities. The researcher observed that this attitude may affect the willingness of individuals with the specific disabilities to disclose their hidden disabilities or request for accommodations. The same study showed that employers with more experience in supervising persons with specific disabilities (e.g., deafness) were more willing to hire other people with the same disability than employers without such experience. On the same issue, Dowler and Walls (2014) found that employers thought that, supported employment improves outcomes, but expressed concerns about the cost of providing supported employment services.

Experiences of Teachers with Disabilities

According to Lepkowska (2012), there is lack of awareness by school administrators about accommodation needs for teachers with disabilities. Most of the administrators are reluctant to hire people with disabilities. In some cases, the people with disabilities have to practically demonstrate that they can deliver, despite the academic qualifications they may have. An assistant head of a school in West Sussex confessed that she needed to see a teacher who was deaf interact with students first (seeing is believing), before she could hire him (Lepkowska, 2012). The teacher had to report and do a trial lesson before a decision could be made. Teachers without disabilities are never put to such tests. Some administrators, just like the employers mentioned by Dowler and Walls (2014), are reluctant to hire people with a disability because of concern about the high cost of their accommodations (Lepkowska, 2012).

The lack of awareness about disabilities is found in some teacher preparation programs as well. A qualified teacher with a disability narrated how some teacher training institutions did not want to admit him because they did not think he would fit in (Lepkowska, 2012). The teacher observed that both schools and teacher training systems are not equipped for teachers with disabilities, and governments have not encouraged people with disabilities to apply to teach, although thousands of them are highly qualified to pursue the profession. Interestingly, the teacher observed that new schools are being built with students with disabilities in mind but not teachers. A classroom may have built-in specialized equipment for students with vision or hearing impairments and wheelchair accessible features but not for the teacher who may have a disability. She confessed

knowing a teacher trainee in a wheelchair who quit while doing her student teaching because she could not get around the school in her wheelchair.

Statistics about Individuals with Visual Impairments

The National Federation of the Blind (2011) observed that all the data that is available about VI in the U.S. are based on estimated statistics. The Federation has estimated that there are 6,636,900 individuals in the U.S. who are none institutionalized and have varied education levels. 3,665,200 of these individuals are women and 2,971,600 are men. 3,372,400 of that population are aged 18-64 years and 2,743,600 are 65 and older.

According to Kelly (2013), 73% of all working-age individuals participate in the workforce in the U.S., but only 40% of working-age individuals who have VI participate in the workforce. The study also showed that about 10% more males with VI participate in the workforce than females.

Accommodations for Persons with Visual Impairments

Under the ADA of 1990, individuals with disabilities are entitled to reasonable accommodations for their known physical or mental limitations (The U.S. Equal Employment Opportunity Commission (EEOC), 2011). The individuals need to request the accommodations before the employers are obligated to provide them. The employer is supposed to ascertain the need for such accommodations and make a reasonable effort to determine and provide the appropriate accommodations that depend on the individual needs.

According to the EEOC (2011), a person with a VI in a working environment may need accommodations such as assistive technology (AT), written materials in accessible

format such as large print, braille, audio format or computer disk; modification of employer policies such as allowing dog guides at the place of work; modifying employment procedures such as interview expectations; having a reader; having a driver or receiving payment for the cost of transportation; an accessible website and training in the use of assistive technology; a modified work schedule (if they have to rely on public transportation); and time-off in the form of paid or unpaid leave if the person needs to go for treatment or training in the use of assistive devices to cope with a degenerative visual condition. Employers should note that employees with VI may once in a while need changes or adjustments in the accommodations they receive depending on their visual conditions. Employers should also not assume that the same accommodations can work for different individuals with the same visual condition. Individualization or differentiation of accommodations is needed.

Assistive Technology for People with Visual Impairments. Assistive technologies (AT) for people with VI are the tools that assist them to access print or electronic information, facilitate orientation and mobility (O&M), communicate to their audience through writing, and produce materials in alternate formats (e.g., braille, large print, and audio) (Corn and Erin, 2010). In the IDEA amendment of 1990, AT was defined as any item, piece of equipment or product system, whether acquired off the shelf, commercially modified, or customized, that is used to increase, maintain, or improve functional capabilities of children with disabilities (20 U. S. C. Sec. 140/ [1]. Therefore, AT services would be the services that assist people with disabilities to select, acquire, or use an AT device (Corn & Erin, 2010). As part of their accommodation, teachers who are blind may need AT services in acquiring and customizing the devices to

meet their individual needs, the maintenance, repair or replacement of the devices, and training on the use of the devices.

As already mentioned, technology assists students with VI to access information, communicate, and facilitate O&M. For the students to fully benefit from the services, the teachers who work with the students have to acquire the general knowledge about using the AT. If the teachers who work with the students who have VI are also blind, then the teachers need to be assisted to learn how to use the tools to access the information to discharge their responsibilities so they can assist the students to use these tools. Ottowitz (2013) suggested that when a teacher who is blind is to teach students with VI the use of AT (e.g., digital voice recorder), the teacher should ensure that he/she is familiar with the device (e.g., the operating buttons) before introducing it to the student. It is also important that when the students are using an AT device that has an audio output (e.g., adapted note takers), the teacher should ask them to turn on the speech so that she can follow what they are doing.

Technologies Available for People with Visual Impairments. The AT for people with VI are categorized into four major groups: the AT used for accessing print and electronic information; the AT for writing; the AT for O&M; and the AT for producing materials in alternative formats (Corn & Erin, 2010).

The first group of AT used for accessing print and electronic information are categorized as optical devices, nonoptical devices, magnifiers, tactile tools, computer-based tools, auditory devices and services, and tools for accessing a computer. Optical devices are lenses that compensate for optical defects (Corn & Erin, 2010). The devices magnify or change the shape or location of an image on the retina. They may come in the

form of eyeglasses and hand-held or stand magnifiers. Video magnifiers are also known as close circuit televisions (CCTVs). They project enlarged images on video monitors and are mostly used in close viewing tasks. Nonoptical devices are used to enhance visual functioning. They can control lighting on objects or improve contrast. Some examples include: sunglasses, black felt-tipped pens, reading stands, and desk-top lighting.

The primary tool for accessing information tactilely is braille. Braille comes in the form of raised dots that are sensed by fingertips. It can be produced in hard copy by using heavy weight paper. An electronic or paperless (refreshable braille) display is a device that contains a series of “small plastic pins that can be raised or lowered electronically” (Corn & Erin, 2010, p.106). Dedicated braille displays should be connected to a computer to provide a tactile version of what is displayed on the computer screen. Although it is a hardware function, it requires the computer to be running a screen reading program to send textual information to the braille display which in turn translates it into the braille code and raises the appropriate pins.

The computer-based tools include specialized scanning systems with audio output. People who are blind can use computers to convert information that is in print into electronic information and access it in an auditory format.

The auditory devices and services allow the people who are blind to access information in auditory formats. They can range from simple reader services to complex synthesized voices in computerized devices such as global positioning systems (GPS). The common auditory tools and services include readers, tapes, digital recorders and players, digital talking books, players, e-book readers such as MP3 players, talking calculators, talking dictionaries, accessible personal digital assistants (PDAs), scanning

systems with speech, talking computers, talking compasses, and talking GPS devices.

The tools can be used to enhance access to print and electronic information if they are paired with a braille copy of the information (Corn & Erin, 2010).

Ottowitz (2013) observed that computer devices can give a lot of feedback and information to people who are blind. To get maximum benefit from computer technology, she suggested that the person using the computer should be familiar with the equipment and material presented so as to be able to troubleshoot any issues. She also advised that the person who is blind should select familiar websites or materials such as spreadsheets and Microsoft Word documents. In addition, she suggested that when using a screen reader, a person who is blind should listen carefully, to have an idea of how to problem-solve and react to different things that come up but are not relevant to the task that he or she needs to do.

The second group of AT devices includes the tools for writing. These may range from low tech to computers and note-taking tools. The low-tech or manual tools commonly used by people who are blind include the slate and stylus which are quite portable and the mechanical braille.

People with blindness can use human note-takers, but this method has the disadvantage of denying the person who is blind the opportunity to decide on the important points that need to be noted. The person who is blind will also have the problem of having to look for a reader to access the notes. Corn and Erin (2010) recommended the use of a modified tape recorder with tone indexing or an accessible digital recorder with book-marking capabilities and a wireless microphone as an excellent method for recording lectures.

Accessible Personal Digital Assistants (PDAs) (also known as note-takers) are lightweight portable devices that can come with braille keyboards and offer braille or speech output. The device can be used together with a digital recorder to take notes.

The third group of tools is for O&M. O&M is the ability for a person to orient oneself and to move in an environment safely. The AT tools that can assist a person with blindness in O&M are the long cane, a GPS, talking or braille compass and features for accessible PDAs.

The fourth group includes the tools for producing materials in alternate formats. People who are blind can use the services of certified braille transcribers or braille translation software and a braille embosser to produce braille materials (Corn & Erin, 2010).

Video and Television as Sources of Information for People who are Blind.

One of the important sources of accessing information today is through video and television. These sources of information are, however, primarily visual, making their programming difficult to understand, especially for the audience that is only hearing it. There is often a need for explanation to individuals with VI of what is going on in movies or educational videos. Packer and Kirchener (1997) observed that as much as people with VI can watch television and videos with sighted friends who can describe to them what is going on, they often face frustrations because the person describing does not fully enjoy the show because of the responsibility. At the time of describing, other important incidences are going on, and these are likely to be missed. At times, the person describing may not be good at it, making it difficult for the person with VI to follow. Although the ADA of 1990 intended to bring people with disabilities fully into civic and community

life (Packer & Kirchener, 1997), people with VI still feel left out because they miss out or have to work harder to get the information that sighted people easily get. This lack of information puts them at a social disadvantage as they are not able to confidently discuss popular current topics.

Accommodation for people with VI to access information through video and television can be made possible through a video description technique. This technique inserts explanations and descriptions of the visual elements of the programs, while at the same time not interfering with the regular sounds and dialogues that are part of the programs. Organizations such as Descriptive Video Services (DVS) and Narrative Television Network (NTN) offer the video description services, and people with VI can access videos by buying, renting, or borrowing described video films from DVS, some video stores, and some libraries. The NTN offers its services through open description, which comes as part of the soundtrack, and any person watching the show has to get the description. DVS can deliver television programming using closed description (similar to closed captioning for people with hearing impairments), but because of limitations in videotape technology, most of the movies currently offered by DVS are available on open description.

The new “YouDescribe” is an experimental video description tool hosted by the Smith-Kettlewell Video Description Research Institute and Development Center (VDRDC). In using the tool, sighted people can view YouTube videos and record descriptions on what they see. The descriptions can be played back with YouDescribe to allow viewers who are blind to have better access to video contents. The tool uses Descriptive Video Exchange (DVX) to store the description clips and the information

about the clips. The service uses DVX to allow any person anywhere to record and upload video descriptions to the cloud (The Smith-Kettlewell Video Description Research and Development Center).

Accommodations for Students Who Have Visual Impairments by Teachers Who Are Blind

Assessment is a major area of teaching that needs to be considered for accommodations. Teachers can be flexible by enabling students to meet the standards of class requirements in different ways because individuals may require different supports in different situations. In a study by Bradsborg, Vik, and Andersen (2001), a TVI with blindness, working with a child with VI was often observed making learning very practical and consistently interacting with her student. She often gave enough time to all activities and considered tranquility and security for the student more important than completing all the activities planned. Morais et al. (1997) observed that orientation and mobility instructors who are totally blind have been successfully teaching cane travel, possibly because people with blindness have developed their own unique effective innovations for teaching the skills.

As professionals, teachers are expected to keep students safe, confident, competent, and effective in different settings. They should help the students to develop skills in different areas. Ottowitz (2013) observed that teachers who are blind have an additional responsibility of being role models to students who have VI and their families. She observed that the families, consumers, and students gain inspiration and motivation from the positive images that the teachers who are blind portray because they look upon the teachers as examples of how people who have VI can live successfully. She added

that students who have VI often base their abilities to perform tasks on how well their teachers who have VI can perform the tasks. It is, therefore, imperative for the teachers to present and reinforce the positive images.

Some of the strategies that teachers who are blind can use to make accommodations when teaching students with VI include: using organizational skills, being familiar with the material and equipment they use and the work area or room in which they are working, and being able to monitor the students as they work. Ottowitz (2013) suggested that teachers who are blind can get organized in their work by labeling (e.g., having stickers on items, folders, and envelopes that have paperwork in them). Labeling increases efficiency in locating and accessing items that are needed for lessons.

Familiarization is another important adaptation strategy for a teacher who is blind (Ottowitz, 2013). Teachers who are blind should be familiar with the materials and equipment that they use as well as the environment in which they are working. The teachers can get themselves familiar before the beginning of a lesson by physically exploring the area (e.g., table tops and edges, floor width and length, and checking for any dangerous items that may be present). However, in a new place (e.g., when a TVI goes for a home or school visit), the teacher should have a sighted person describe the environment to him or her. The teacher should lead the description by asking questions such as the arrangement of the room, how to move from one room to another, and the approximate size of the room.

The teachers often need to monitor students as they work. When teaching (e.g., tracking during braille reading), it is important for the teacher to physically identify the body positioning of the student in relation to the reading material. It is recommended that

the chair on which the student is sitting should be in line with the table, and the reading material should be flat on the table (Ottowitz, 2013). In addition, the teacher needs to be aware of the next line to be read so that she can help the student identify any tracking errors. The teacher can also number each braille line at the beginning so that the students can identify the line numbers before beginning to read. To ensure that the students develop the correct braille reading techniques, the teacher should help the students to properly position their fingers on the braille symbols during reading.

Teachers who are blind can also monitor what the students are doing (e.g., during practical activities) through hand-under-hand modeling or hand-over-hand technique. The hand-under-hand modeling is when the teacher performs the task in demonstration and the student follows along by putting his hand over the teacher's. In using hand-over-hand, the student performs the task and the teacher puts her hand over the student's to identify what the student is doing.

Limitations that Teachers who are Blind Face in Making Accommodations

As observed earlier, teachers who have VI in the U.S.A. have reported frustration as a result of lack of “autonomy, control, and freedom to make choices” (Lewis, Corn, Erin, & Holbrook, 2003, p. 161). They have to depend on other people for transportation to their workplaces and observation during assessments. In addition, the teachers have to carry bulky materials and equipment that they use to ensure productivity in their work. When they have to use sighted readers during observations or to access print material, at times it is their responsibility to pay for the services. Some participants in the study by Lewis et al. (2003) reported that it is important to identify readers who are sighted, who could be trusted to maintain students’ confidentiality.

Technology can make the work of teachers with VI more manageable, but as Merri and Monties-Cabot (2005) observed, teachers who have VI must first learn to use the technology before they can adapt it for teaching purposes. To increase the understanding of technology, the teachers need the help of a trainer.

Lesson preparation is an area of challenge to teachers with visual impairments. Because of the limitations, the teachers need more time to prepare for lessons as they cannot rely on improvisation. They must plan every step beforehand. Perkins (2012) reported that teachers of students with VI need to spend time focusing on preparing instructional materials for their students. The preparation may include finding information on the internet and rewriting it in simpler language and in braille for the students as needed. A teacher for students who are sighted may just refer the students to the website for information.

Even though a TVI can use an assistant during observation of the students, it is a challenge to prepare the assistants on what is to be observed and the level of details needed. Perkins (2012) reported that a teacher with visual impairment has to train the general education teachers and rehabilitation personnel on the most effective methods of assisting the students who have blindness and VI, in addition to corresponding to, and sharing resources with them. However, Ottowitz (2013) observed that as much as teachers who are blind can use assistants who are sighted for visual tasks, they should not let the assistants take over their responsibilities. The teachers should always remain in charge. She gave suggestions on how teachers can effectively work with the assistants who are sighted.

The teacher should ensure that she instructs the assistant on how she would like to be assisted (e.g., how to display and label items in the classroom). The teacher should work with the assistant to give her information that she needs to identify the best technique to use. When the teacher goes with a driver for school or home visits, she should instruct the assistant regarding how to respond if the teachers or parents are asking the driver questions and ignoring the teacher. The teacher should instruct the assistant on the type of important information she would like to know (e.g., hazards and the things she would like the assistant to observe and fill her in on later).

According to Ottowitz (2013), when teachers with VI train their students to use low vision devices, they should instruct the assistant to set up the environment to reduce glare, promote good posture and utilize good lighting before the lesson begins. In addition, the teacher should be familiar with the reading material that is going to be used and have a copy in accessible format to follow along as a reference. The teacher should

also use effective monitoring techniques to check how the student is holding the reading material and to monitor the posture. It is also advisable that the teacher describes to the student before the lesson begins how to use the device (e. g., by asking questions to check the student's knowledge of how to use the device).

Ottowitz (2013) suggested that when teaching an assistant who is sighted to complete paperwork, the teacher should always bear in mind that all the responsibility is with her; hence, she should know all the details of the paperwork to be completed and the timeframe. Itinerant teachers with VI in the U.S.A. do not find making accommodations a big challenge because they typically only work with one student at a time; hence, they can control activities by making accommodations that suit both themselves and the students. However the scenario is different for teachers with blindness who work in residential schools or programs for students with VI where they have more than one student at a time. Perkins (2012) pointed out that an important area of strength lies in the teachers' service as role models to the students with VI because the teachers know from experience the best ways to solve problems affecting the students. Being familiar with available resources, the teachers know in advance what could be missing so that they can advise on improvisation. As people who have been in the students' "shoes," the teachers with VI can be compassionate or reality based as they work with the students because they know what the students feel.

Providing opportunities to build self esteem to students is an important aspect of a teacher-student relationship but can be challenging to a teacher who is blind. Bradsborg et al. (2001) identified symbolic confirmation through eye contact and body language as a way in which sighted people can be made to feel valued. Lack of vision makes children

with VI miss out on this important form of feedback from their teachers who may also not be able to offer it. Ottowitz (2013) suggested that teachers can monitor what students are doing in class by getting feedback directly from the students. The teacher can use simple guiding questions that make the students describe what they are doing. The teacher can also use verbal cues (e.g., “oops, where is it?”) that come from the students as they work. Such expressions mean that there are issues to which the teacher may need to attend. Non-visual cues such as the sound of a student’s voice can be used to tell the body positioning or the direction the sound is coming from or aimed at (e.g., is the student looking down when using the keyboard?).

In Bradsborg, et al. (2001) a teacher reported that time is a factor that affects the quality of her teaching and ability to observe. She confessed performing poorer when pressed for time and explained that teachers with VI need to use almost the same amount of time as students with VI, as they depend on alternative methods of observation that are more time consuming. Griffin-Shirley, Koenig, Layton, Davidson, Siew, Edmonds and Robinson (2004) observed that there is often no time for teachers to conduct functional vision evaluations and learning media assessments. Other findings were also available in Brown and Beamish (2012) who reported that the pressure for time to carry out their dedicated teachers’ duties may affect their capacity to support students with VI who often require individual attention. In Correa-Torres and Howell (2004), teachers expressed that they just did not have enough time with the students with VI, a point emphasized by Perkins (2012) as resulting from teachers being asked to do more bureaucratic paperwork, leaving less time for preparation and teaching.

In conclusion, the literature says that legislation exists that mandates the provision of accommodations for persons with VI at their workplaces and in public places.

Although there is some information on how individual teachers with VI have managed to make accommodations for their students with VI in particular areas of education, researched literature that can be used to guide teachers who are blind is lacking. Finally, the literature has discussed the limitations that teachers who have visual impairments face when they need to make accommodations for their students who also have visual impairments.

CHAPTER 3 METHODOLOGY

The Type of Study

This study was qualitative and conducted through a comparative case study approach. According to Holloway and Brown (2012), qualitative studies give the researcher an insight into various perspectives on a phenomenon, behaviors and feelings, thus allowing the researcher deep exploration of participants' experiences. Since the participants are studied in their natural surroundings, the researcher can foster relationships that enable him or her to see the world from the perspective of the participants. I visited with each of the four participants for at least three days. This enabled me to experience the conditions under which they work by observing, interviewing and asking questions generated from observational insights as they went about their daily routines.

Silverman (2006) observed that case studies are intended to capture the complexity of an event, a program, an individual, or a place; and they rely on multiple sources of data. Case studies focus holistically on individuals or organizations, and they can use both categorizing and holistic strategies to analyze qualitative data. Similarly, Shank (2006) observed that case studies allow for an in-depth understanding of a person through listening and talking to the person. I was able to observe and listen to my participants as they performed their daily routines. In addition to the interview questions, I generated more questions from the activities and working environments that I observed. I also collected information from artifacts and documents I could access.

In comparative case studies method, the researcher systematically identifies and compares the relevant factors that characterize the different cases (Rialp, Rialp, Urban, & Vailant, 2005). My decision to use the method and compare the evidence of accommodation issues from different cases was influenced by the observation by Eisenhardt (1991) that multiple case studies can be used to create theory because they allow replication and extension among individual cases. Because different cases may emphasize complementary aspects of a phenomenon, I could piece together the individual patterns and draw a more complete theoretical picture from the different cases.

The qualitative case study inquiry befitted this study because, as Shank (2006) described, case studies are “particularistic, descriptive and heuristic” hence, they can generate detailed information about the phenomena being investigated and illuminate the reader’s understanding of the phenomenon (p. 54). It allows for thick data collection and description that demonstrate the interrelationship with the context. This process can facilitate the deep understanding of the phenomena being studied (Erlandson et al., 1993). The approach enabled me to understand the individual differences of the participants and the working environments, resources, and services that each participant can access.

Data Sources

Erlandson, et al. (1993) observed that the main reason for collecting data in naturalistic research is for the researcher to be able to construct reality in ways that are consistent and compatible with the constructions of the people in the settings. To gain this experience, the researcher needs to gather data from a variety of sources and ways. I asked my participants questions from my interview protocol, but also I engaged with them in informal conversations so that I could gain insight into their hidden assumptions

and allow constructions to surface. In addition to the interviews, I observed the participants in their daily routines, with the aim of seeing the operational meanings of what they had told me. I engaged all my senses and intuition to collect, analyze, and interpret the information, in which case, I became the primary instrument (Erlandson, et al., 1993). My other sources of data were primary sources (unpublished documents) that my participants availed to me. Additionally, I used the field notes and my experiences resulting from spending a significant amount of time in the field (Myers, 1997).

Recruitment of Participants

Creswell (2008) observed that in qualitative research, a researcher often needs to seek permission from different individuals and levels to access participants. Because the studies involve physical presence at the sights and face-to-face engagement with the participants, the researcher may need to identify and contact a gatekeeper (a person who can officially provide entrance to a sight, help in locating the participants and identifying the places to study). In this study, I started by contacting the gatekeepers (superintendents of schools for the blind) through emails. I introduced myself, briefly explained the nature of my study and requested for their assistance in identifying the potential participants in their schools (see Appendix C for the email to superintendents).

With information about potential participants from the gatekeepers, I also wrote emails to the individual participants. In the emails, I introduced myself, explained the nature of my study, and requested their participation (see Appendix D for the email to participants). Gay and Airasian (2000) advised that it is important for the researcher to build rapport and trust with participants before starting to probe the sensitive issues of the study. After receiving the initial tentative consent from the individual participants, I

contacted each of them several times through phone calls for the purposes of establishing rapport and trust, and setting up times and meeting places for the interviews and observations.

I used purposive sampling to select the participants for the study because this investigation was intended to explore and generate information on the heterogeneous patterns and possible problems that occur with teachers who are blind when teaching students with VI (Erlandson et al., 1993). Four teachers who are blind, braille readers or used media other than print, and teach students with VI in schools for the blind or public schools were recruited to participate in the study. The participants who have low vision and rely on print media were not included. I believed that the teachers who are blind were a rich source of information and had the potential to give insight into the complexities of accommodation needs for persons who have VI in teaching and learning situations. Because of their practical experiences, I thought they were better able to give advice on the best ways to make accommodations that would enhance the effectiveness of teachers who are blind and teach students with VI. Lewis et al. (2003) suggested that in resolving the issues related to managing responsibilities of the profession, one should consider the experiences of teachers with blindness who teach students with VI because many successful ones have found practical solutions to the challenges. It is on that strength that I thought it was wise to seek the opinions of the teachers who are blind to help answer the pertinent questions in my study.

Interviews

Dexter (cited in Erlandson et al., 1993) described interviews as a conversation with a purpose because, through interviews, the researcher and participant can move back

and forth in time to construct the past, interpret the present, and predict the future (Lincoln & Guba as cited in Erlandson et al. 1993; Spradley, 1980). Seidman (2006) observed that interviews can be used to explore issues in a subject area by examining the concrete experiences of people in that area and the meaning the experiences had for them. I used interviews to explore the experiences and perceptions of my participants to make meaning of the situations under which they worked and then base my recommendations on those experiences and perceptions.

Observations

Angrosino (2007) observed that observation is a fundamental base for research. He said that observation supports the interview in data collection because even studies that rely mainly on interviewing techniques employ observational methods to note body language and other gestural cues that lend meaning to the words of the persons being interviewed. Observations can be descriptive (catching all that goes on), focused (narrowing the scope of what one is looking for), or selective (looking for specific differences among categories). In this study, I used the descriptive and focused observation to derive a narrative description of the phenomena under investigation.

According to Erlandson et al. (1993), persistent observation helps the researcher to obtain relevant depths of events and relationships in the context through pursuing different ways of interpretations plus constant and tentative analysis. To achieve this quality, I observed each participant for at least two days, and each observation session took a whole day.

Documents

Documents, unlike interviews and observations, are ready-made sources of data that are usually produced for other reasons than the research at hand (Merriam, 1998). They include public records, personal records, and physical material, sometimes referred to as artifacts (Erlandson et al., 1993). Personal documents such as diaries, home videos, and photo albums can be used for the same reasons as observations. They can tell the inner meaning of everyday events or yield rare and extraordinary events in life (Merriam, 1998). Identifying the relevant documents is a systematic procedure that evolves from the study topic. I asked my participants to avail any relevant documents that could support the information that they were giving concerning the topic of study.

Researcher's Journal

In addition to the information from the documents, I kept a research reflexive journal where I recorded my schedules, decisions, observations and the insights that I made during the interview sessions. According to Lincoln and Guba (1995), a researcher should keep a reflexive journal to support the credibility, transferability, dependability and confirmability of the study. This document should be used to record information about the researcher's schedule and logistics, insights and reasons for methodological decisions. Erlandson, et al. (1993) also advised that researchers should cultivate the habit of using a reflective journal for daily recording of notes and ideas. My study required that I travel to different destinations at different times to meet the participants. During each trip, I carried a reflective journal where I recorded every detail of all that transpired during the study. For example, I indicated the date, time, and the type of data I was collecting. I described the meeting places, the resources I used, and my insights about the

participants. During observation sessions, I took notes about the number of people present, the resources and the strategies that the participants used to go about their routines. Every evening, I would read my field notes and listen to the tapes, and reflect on the uncertainties, ideas or questions that I thought still needed further clarification. I wrote these down for further inquiry in the next meeting with the participant.

Data Collection

Gaining Access

After identifying the participants and agreeing on when and where to meet for the interviews and the observations, I travelled to the venues and went through administrative procedures to have access to the teachers. I asked the teachers to read the consent forms which I had in the formats accessible to each of them and sign them if they were still willing to participate in this study. The participants and I agreed on the times and modes for the data collection activities that would not interfere with school activities. As already mentioned, I collected data through interviews, observations, documents, and my research reflexive journal.

Interviews

I used the open-ended type of interview questions that focused on specific facts of the matter and sought the opinions of the participants about the research problem (Erlandson et al. 1993). I sought the suggestions from the participants as to possible ways in which the situation under investigation could be improved. I asked the participants to respond to questions regarding their early lives as persons with a VI, the skills they possessed that helped them discharge their duties, their employment history, their work environments and support from co-workers and employers, if any, how they went about

meeting workplace expectations, any challenges faced at their places of work resulting from having a VI, and their opinions on what can be done to improve their situations. I conducted one face-to-face interview with each participant and scheduled follow-ups using questions generated from insights during formal interviews and observation sessions. I asked the follow-up questions after observation sessions to gain clear understanding of the issues that emerged. Each interview session lasted about 45-60 minutes (see Appendix A for the interview protocol).

Observations

I observed each participant for at least two days as she went about her daily routines. Some of the responsibilities included: teaching, preparing materials, performing administrative duties, travelling to work, evaluation, IEP meetings, home visits, and interacting with their assistants. Before I accompanied the participants to a session other than the regular classroom, they sought prior permission from the other members or participants in the activities to be observed, ensuring that they felt comfortable with having me observe them. During the observations, I took notes on issues that I needed clarified, and I later asked the participants questions, as appropriate, to gain insight as to why they employed particular strategies.

Documents/Records

The documents I had access to included Open Book, IEP formats, teacher evaluation form, sample curriculum standards, common core standards, and lesson plan books. The Open Book is a scanning and reading software for people who are blind. It converts printed documents or graphic texts into electronic text formats of the personal computers using quality speech and the latest optical character recognition (OCR)

technology. In using the software, one can choose between the text-to-speech software synthesizers (natural human-sounding voice) or eloquence which is better in editing and document skimming. I also accessed the individualized education program (IEP) document which has been developed to ensure that an individual student with a disability that has been lawfully identified, attending school, receives the specialized instructions and related services needed. Teacher evaluation forms are documents used in managing the performance of the teachers. The curriculum standards document provides the instructional programming designed to ensure that students reach the established desired learning outcomes. The other document accessed was the common core standards. It is a set of high quality academic standards in mathematics and English language arts (ELA). The goals in the document outline what a student should know and be able to do at the end of each grade. Common core standards were established with the purpose of ensuring that a student acquires the skills and knowledge necessary to succeed in college/career by the time the student graduates from high school. The lesson plan book is another document that I accessed. Teachers use it as a guide for a detailed description of the course of instruction for one class. The details of each lesson plan vary depending on the preference of the teacher, the subject being covered and the needs of the students. Individual schools may have their own requirements regarding this document. I also had access to sample student worksheets prepared in the formats that were accessible to the students and the teachers. Some of the documents showed accommodation practices made for the teachers and students with VI, and some were written in print, hence not readily accessible to teachers with visual impairments.

Timeline for Data Collection

Data collection in qualitative studies demands familiarization and immersion in the setting (Angrosino, 2007). As mentioned earlier, I made prior arrangements with my participants as to when interviews and observations would take place. I also conducted the observations and interviews with each participant for at least 3 days (1 day interview and 2 days observation). As per the nature of my study, I had to collect data at a period when schools were in session before closing for the summer holidays of 2013. The whole data collection period took six weeks.

Confidentiality

Confidentiality is an ethical issue in research, and Erlandson et al. (1993) observed that there are times when a respondent is put into vulnerable situations because of sensitive data that emerge from the interview. In this study, I went by the advice of Erlandson, et al. (1993) that the researcher considers the respondent a full partner in the study. I have not disclosed the identity of my participants and have only used the information gathered to construct realities that can help improve the situation under investigation. I have ensured that all the information gained through observations, interviews, or documents are kept in a locked secured desk drawer at the Virginia Murray Sowell Center for Research and Education in Sensory Disabilities at Texas Tech University and have been only accessible to me. I used pseudonyms in place of their real names, and my field notes are devoid of personal or institutional identifiers.

Data Organization and Analysis

According to Basit (2003), the analysis of qualitative data is intended to help the researcher gain a deeper understanding of the study and define interpretations. The

analysis helps the researcher to determine categories, relationships, and assumptions that inform her or his view of the world and the topic of study. An analysis done systematically illuminates an existent situation by yielding a smaller and manageable body of data as a result of interpretation and organization. Eisenhardt (1989) observed that cases of informal data analysis overlapping with data collection are common in case studies. During data collection, a researcher can make comments about what is going on in the study, involving observation and analysis in the form of field notes. During the study, I wrote down notes about the impressions I made of the situations during the observations. In addition to recording what happened, I wrote down questions such as “what does this mean?” I would enter such thoughts later in my reflective journal for further inquiry from the participant.

Eisenhardt (1989) and Creswell (2008) acknowledged the huge amount of data often generated in case studies. While Creswell (2008) recommended data organization to manage the large amount of information, Eisenhardt (1989) suggested within-case analysis as a way of ensuring that none of the important information is lost. The author observed that although within-case analysis is simply detailed descriptions of individual cases and the sites; they are important in generating insight because they help the researchers to cope early in the analysis process with the huge volume of data. Additionally, the author observed that within-case analysis ensures the researcher is familiar with each case as a stand-alone entity. The process also allows the unique patterns of each case to emerge before they can be generalized in cross-case analysis. In support of Eisenhardt (1989), Silverman (2006) and Maxwell and Miller (2008) stated that case studies employ categorizing strategies (coding, thematic analysis) that occur

within a particular case rather than between the cases, and a researcher can use either categorical or holistic strategies or both to analyze data depending on the purpose of the research. These strategies ensure that the unique context in each case is retained. The data are interpreted in each context, and this method provides an account of a particular person, a setting, instance, or event. The authors observed that this quality makes it hard to lose the contextual relationships.

I used the within-case strategy as the first level of my analysis as a way of immersing into my data and becoming familiar with emerging patterns in each case. My 45-60 minute interviews each yielded approximately 25 pages of single-spaced transcriptions. I decided to organize the data in two different ways (by participants and by type of data). I kept all the interviews, observations, and document data in individual folders which were labeled by the pseudonyms: Awino, Anyango, Atieno and Adoyo. In each folder, I organized the data by type in the order of interviews, observations, and documents (Creswell, 2008). I ended up with four folders having three groups of data each.

The next activities were to listen to the interview tapes and re-read the observational notes and then transcribe them verbatim. I listened to and transcribed the information from the tapes at least 24 hours after I collected it to ensure that I remained in touch with what the interviewee had said. Creswell (2008) recommended equipment with “a machine that enables the transcriber to start and stop tape recordings or play them at a speed so that the transcriber can easily follow them” (p.246). With such equipment, the transcription time should be approximately four hours for a one hour interview. I did not have this equipment, so the process was longer as I had to rewind and fast-forward

the tapes. After I transcribed each interview (first draft), I listened to the tapes again and again and rewound or played back as I counter-checked with the transcripts as well as the interview notes to ensure that I had captured all the details. I did all the transcriptions myself to ensure they reflected the exact information I had heard or observed at the sites. In the transcription process, I created spacious margins on the sides of the texts that I would later use to write short notes of what I thought of the sentences or phrases. I also left some space in-between the questions that I asked and the responses from the participants for the same purpose. The participants were identified by pseudonyms (Awino, Anyango, Atieno and Adoyo) while the researcher was identified as “interviewer or I.” Both the identifications were written in bold so as to distinguish them from the rest of the text. I transcribed all the words and indicated actions or interferences in parentheses and italics (e.g., laughing, phone rings, not clear). I also paginated the transcripts and numbered each line of text for the purposes of an audit trail.

Researchers can choose whether to analyze qualitative data by hand or computer (Creswell, 2008). I chose to analyze by hand for two reasons. First, my database was relatively small (less than 200 pages), hence I could easily keep track of the folders and locate the pages. Secondly, I wanted to be close to and have a hands-on feel for my data “without the intrusion of a machine” (p. 247).

Researchers (Maxwell & Miller, 2008; Creswell, 2008) have identified two important steps in analyzing qualitative data. First, the researcher needs to read the interview and observation notes to be analyzed to form tentative ideas about categories and relationships. Silverman (2006) described this process as immersion into the data to know it well and organizing the data into chunks to see the emerging themes and patterns.

In the process of immersion, the researcher can write memos that occur in the margins. Secondly, the researcher needs to identify units of data to be addressed by the analytic procedures. The process is also known as unitizing, segmenting or marking what is of interest. Edmonson and Irby (2008) identified “memoing” (p. 97) as a good technique to use in data analysis. They observed that instead of assigning simple codes to the transcripts and notes, a researcher can write short notes in the margins in the form of questions, remarks, or issues with particular pages in the text. Gay and Airasian (2000) recommended memoing as a way of keeping a record of a researcher’s initial thoughts and sense of the data. I used memoing on transcriptions as a way of recording my initial thoughts from both the interviews and the observations. The memos were in the form of words or phrases describing the text segments or my understanding of what the participants were talking about or what I observed. Some memos I came up with included;

- People’s attitude: Some people do not think people who are blind can perform.
- Large amount of paperwork.
- Access to information through technology.

All the sample memos above were summaries of participants’ expressions on the challenging aspects of their jobs. I worked on data from one participant at a time.

Gay and Airasian (2000) defined qualitative data analysis as “a process of breaking down the data into smaller units, determining the import of these units and putting the units together again in an interpreted form” (p. 243). This process is known as classification which refers to ordering the transcriptions and notes into the categories that represent different aspects of the data. Categories are formed by examining and comparing concepts in the data to one another and making connections (Gay & Airasian,

2000). These categories can be used as a basis to structure and interpret the data.

Different researchers can derive with different categories from the same study, based on the researcher's interest, biases, and style. Gay and Airasian suggested that the topic of focus should have a major influence on the categories that a researcher develops. The authors also suggested that categories can be defined by the study "observation or interview protocols" (p. 244). The authors further explained that a researcher may have interest in particular activities of the participants and thus have the categories identified before the analysis begins. In that case, the researcher would try to find examples in the data that fit in the already identified categories; "the categories precede the data pieces" (p. 246). Having a clear focus on what I was going to study and the kind of information I would look for, the questions in my interview protocol and the responses from the participants and information gathered through observation and documents, allowed the categories to naturally flow and emerge.

With my categories ready and having assigned memos to each text segment, I constructed a matrix for each participant. I entered detailed information from each participant under the categories as shown in the matrix below.

Table 1:

One Example of Thematic Rendering from a Participant: Within-Case Analysis

Categories	Response (as a memo)	<i>Quotation from text</i>
Early life and onset of VI	Parental/family support	Awino: "She would close her eyes and button her clothes to figure out how to teach me." (Awino, p.1, L 27-28)

School systems and experiences as a student with a VI	Importance of early intervention services and compensatory skills for students with VI.	Anyango: <i>“I went to a day school and I went home every night, but there was 100% braille program where I also learned the keyboard.”</i> (Anyango, p.2, L20-21)
Process and motivation for career to be TVI	Interest in working with students with VI	<i>“I was the only teacher who had the interest and knowledge. I did not even have my teaching certificate yet. I had to get it as I was working.”</i> (Anyango, p.1, L15-17)
Skills learned & strategies used in teaching VI	Multisensory and interactive approach to teaching students with VI	Atieno: <i>“(referring to a project that the students had worked on) They could find the pictures and they did the cutting and they pasted it, more interactive so that they can use their multimodal sensory activities where all their senses are involved; the hearing, the seeing, the touching.”</i> (Atieno, p.3, L29-32)
Positive aspects about the job	Improved access to information	<i>“When they said, ‘Alice (pseudonym) is going to enter things for you. So if you have anything, just email her what you want until you get it accessible.’ So they were very nice about it.”</i> (Adoyo, p.14, L4) <i>“It is nice that at least this</i>

		<i>time the principal said, 'Alice, it is her duty to help you.' So at least I know that is the person I go to and everybody knows, and she doesn't have trouble helping me when she is supposed to be doing her job."</i> (Adoyo, p.14, L16-19)
Role as a model to students with VI	Providing consultancy services to students and their parents.	<i>"I tell them what happened to me and I know that this is ok because I had the same type of thing going on, and how I solved it or how it all worked out."</i> (Atieno, p.4, L5-7)
Challenges in the job	Huge amounts of paperwork that is not compatible with computer programs for people with VI	<i>"I don't like some of the paperwork (laughing). I have to collect a lot of data, and that's not my thing."</i> (Awino, p.10, L32-33) <i>A lot of IEP stuff is now on the computer and it's not always compatible."</i> (Awino, p.12, L38)
Recommendations or suggestions	Teachers with VI need to be at the forefront and give guidance concerning accommodations	<i>"I explained so I had to go through human resource and get them to see there wasn't reasonable accommodation, and so now anyone who is a blind teacher, that's kind of an assumed thing that they've asked for."</i> (Anyango, p.4, L24-26)

The rows focused on the themes that naturally formed from the information gathered through different data sources. I picked each memo from the text and matched it with one of the eight categories as a response. Similarly, I picked the memos from the observation transcripts and wrote them in a different color under the respective interview memos. Thus, all responses that seemed to address a particular theme or fit in a particular category appeared on the column adjacent to that row. In addition, I picked direct quotations from the transcripts that illustrated the individual memos. I wrote down the quotations (in italics) in the columns adjacent to the memos. I also indicated the page numbers and the line numbers as they appeared on the transcripts for easy retrieval of evidence. I read the texts multiple times to ensure that I had assigned memos to every relevant text. Thus, my analysis for each case went through three levels; direct quotations, memos, and the categories.

The next level of my data analysis involved a cross-case search for patterns. This method refers to looking for inter-case similarities and differences in the data (Eisenhardt, 1989). I used the same categories that I had used with the individual case analyses to compare the information from all the sources in the different cases. Eisenhardt (1989) observed that one advantage of taking this step in the analysis process is that it makes the researcher look at the data in many divergent ways, hence, counteracting the danger of reaching premature conclusions. I used a 5 by 9 cell design to compare all my categories and data from all four cases. I listed all the information from each participant that addressed the same category under the participant's name and adjacent to the category as shown below.

Table 2:***One Example of the 8 Categories in the Cross-case Analysis Data Point***

Categories	Response (as a memo)	Awino	Anyango	Atieno	Adoyo
Early life and onset of VI	Importance of early intervention and family support	<i>“She would close her eyes and button her clothes to figure out how to teach me.” (p.1, L 26- 27)</i>	<i>“I went to a day school and I went home every night but there was 100% braille program where I also learned the keyboard.” (Anyango, P.4, L4)</i>	<i>“The thing is they took me to an obstetrician, not an ophthalmologist or an optometrist. Even an optometrist would have been better than an obstetrician.” (Atieno, P.1, L11-13)</i>	<i>“I had the best in both worlds, I think. Getting to live at home and getting to go to the school for the blind.” (Adoyo, P.2, L6-7)</i>

With the data in the tables, I was able to identify the similarities and differences of information among the cases.

Keeping Track of the Data

I applied the element of unitizing data to ensure that my audit trail is strong.

Unitizing data refers to coding units of data as they emerge during categorization.

Erlandson et al. (1993) observed that the practice makes it easy to access the data as part of the audit trail. I also kept the original interview questions and the transcriptions of the participants' responses to each of the questions that I made from the interview audio recordings. I kept the field notes from the observation sessions in a loose notebook in which I recorded the insights that I made during my data collection. I later re-organized the notes as responses to the interview questions. I paginated the transcriptions from both the interviews and observations and numbered each line on every page. This would make it easier to trace sources of information as part of the audit trail.

Ensuring Trustworthiness

Trustworthiness in naturalistic research refers to the ways in which a researcher can obtain, communicate, validate, and apply truth about the study. It enables naturalistic studies to "make reasonable claim to methodological soundness" (Erlandson et al., 1993. p. 131). There are criteria that any research must meet in order to be accepted as trustworthy, and they include credibility, transferability, dependability, and confirmability.

Credibility. Credibility refers to how compatible the constructed realities in the minds of the participants are, with the realities attributed to them. Credibility is established with the participants and assessed by determining whether the study descriptions for a particular setting are accepted by members of that setting as true (Erlandson et al., 1993). Credibility of a study can be achieved through different

strategies which include, prolonged engagement, persistent observation, triangulation, referential adequacy, peer debriefing, and member checks.

A researcher needs to spend enough time (prolonged engagement) in the context to develop a relationship with the people and understand daily events in the context. Having enough time in the context also takes care of unusual or seasonal events not planned for in the research. For this study, I spent at least three days in each context and continued to communicate with the participants through phone calls thereafter to seek further clarifications.

Persistent observation helps the researcher to obtain relevant depths of events and relationships in the context through pursuing different ways of interpretations plus constant and tentative analysis. I accompanied and observed my participants for at least 2 days as they went about their daily routines.

Triangulation is collecting information about different events and relationships from different points of view (Erlandson et al., 1993). I triangulated the sources of data by checking the data that was obtained from individuals through interviews against their observed behavior during their teaching and through records and documents.

Referential evidence refers to using materials such as videotapes, documents, and photographs to enhance meaning of the information about the context. I used the information from the records and documents to provide a richer contextual understanding of my analyses and interpretations (Erlandson et al., 1993). I also used the strategy of member check by having my participants verify both my data and interpretations. I only included the information that had been verified through member checks in the report.

Transferability. Transferability is an aspect of applicability of the study to other sites. It requires the investigator to provide a thick description necessary to enable individuals who are interested in making a transfer to reach a conclusion. According to Lincoln and Guba (1985), the burden of proof of applicability lies with the person seeking to make application elsewhere. The person seeking to transfer should accumulate empirical evidence about contextual similarity. For this study, I have provided detailed descriptive data and engaged in purposeful sampling to make similarity judgments possible.

Dependability. Dependability is an aspect of consistency. A researcher can communicate it through a dependability audit (Lincoln & Guba, 1985). I have provided an audit trail in the form of documents, interview notes, and a running process of the study found in my researcher's journal. I transcribed my interviews and observation notes, and paginated and numbered each line in a page. This data can be used to retrieve evidence of alleged information in the study.

Confirmability. In naturalistic research, it is important that a way be provided through which data can be tracked to their sources (Guba & Lincoln, cited in Erlandson et al., 1993). Confirmability, like dependability is communicated through an audit. The audit trail that ascertains confirmability consists of the processes that were used in the study. The audit trail that I have provided to ascertain confirmability of my study is my research journal and the triangulation of my data sources.

Context of the Researcher

Erlandson, et al. (1993) observed that the criteria that should follow a research project in its entirety is interest. They explain that making a decision to study a research

problem should be guided by the researcher's interest, the relevance of the problem, the timeliness, and feasibility among other considerations, but without interest the completion of a study could be hindered despite its relevance or feasibility. My journey as a teacher for, and interest, in people who have VI started in 1992 when I was a sixth grade general education teacher. Prior to that I had been a student in a teacher training college, and one of my professors had total blindness, but I did not understand about her condition. I would be so fascinated by the way she moved her fingers over some embossed brown paper (reading braille as I now know) that I could not focus attention on what she was teaching. Therefore I did not learn much from the course. Now that I am in special education, I realize that apart from the braille notes that she found alternative ways to make; Miss Okoth (pseudonym) did not have any other accommodations to compensate for her limitations. After lessons she would request the class secretary to guide her back to the staffroom. The students literally pulled her because they did not know how to use the orientation and mobility guide techniques with a person who is blind.

My turning point came as a result of reading one of the stories in English comprehension lessons with my sixth graders. The story was about a boy who had progressive loss of vision. This boy had to be moved from his class to another because his teacher did not have the skills to teach him how to read and write in braille. I knew I was doing my best for my students, but my mind kept going back to this imaginary boy who was blind (his name was NURU, a Kiswahili word for LIGHT). I often asked myself what would happen if one of my students went blind. Would he or she be transferred to another school because I could not help him or her? From then on, I became obsessed

with learning how to teach students who are blind. Two years later, I was admitted at the Kenya Institute of Special Education (KISE) for a two year diploma course in special education. There were many career options in special education based on the different disability categories, but I chose to pursue a career in teaching students with visual impairments.

The training at KISE was very practice oriented, and we had many student teaching experiences in special schools. It was a great learning opportunity for me. I realized that both the teachers and their students needed to have challenging but exciting experiences and it was the teacher, who could facilitate the creativity to make the lessons exciting, enjoyable, flexible, practical, and meaningful. Students with visual impairments need these experiences more than those who have sight because they may not benefit from incidental learning experiences. Simple concepts such as a “bird that is flying” are very abstract for students who are blind. As I completed my final student teaching experience at a school for students with VI, I learned about many limitations that the students have. For example, fish is a common dish on the dinner table in Kenya, but none of the 11 fourth grade students had ever “seen” (touched) a whole fish. My students and I learned many more simple concepts this way. I also realized that the majority of teachers in special schools had the same disabilities as the students they were teaching, and in most cases, they did not have training in special education. For teachers with VI, it was assumed that the knowledge of braille was a good enough qualification to teach in those schools.

After training, I taught in special schools for students with VI and worked as a special education advisor for the school district for two years. I then felt I needed to get a

college degree so I signed up for a bachelor's degree in special education in a public university that had just opened its doors for special education professionals. I pursued education for students with VI. During my 4-year degree program, I worked directly under an American professor (Dr. Jean Latimore) to whom I will always be grateful. One of the things I remember her for is that during the internship, she introduced me to a British ophthalmologist who was operating a private eye hospital in the city. Through this contact, I was assigned to work in the low vision clinic where we practiced visual stimulation exercises with children. I learned many things about how early intervention could prevent some conditions that would otherwise lead to visual loss.

With a degree in special education, I could not work in primary schools anymore, so I joined KISE as a teacher educator in 2001. At KISE, I taught different courses, but the most exciting moments for me were during student teaching field visits. At times I turned those assessment sessions into lessons such that I did not grade the students but advised and made appointments to see them again after they adopted some of my suggestions. For example, I assisted the student teachers in designing individualized instructions for their students depending on their visual conditions. I am very proud of the teachers who took my instructions seriously, as they are still doing great work, and we are still friends.

While at KISE, I received a scholarship for a Masters' degree in special education from the University of Oslo in Norway through a linkage program the University had with KISE. Erlandson et al. (1993) observed that most researchers have pursued problems that evoke their passions. During my Master's degree program in Norway, my passion for making learning situations better for the students with VI was still alive, so I

conducted a study about how the learning environments, instructional strategies, and finger techniques influence the development of braille reading efficiency in students with blindness. It was a qualitative case study, and I used three special schools as cases. In each case, a teacher and three students were purposively sampled as participants. The main method of data collection was observation, and the instruments included observation schedules, and reading fluency and comprehension tests. I also did unstructured interviews. This study was conducted in Kenya because that is where I could easily get all the participants that met my sampling criteria. The results were exciting because they revealed that as much as schools are administrated and funded in the same way, the individual teachers are the major determinants of the quality of student learning.

The results of my thesis got me acquainted with the Norwegian Association of the Blind and Partially Sighted (NABP). My external examiner, who was the Director of the National Resource Center for the Blind, asked me to let one of her Ph.D students who had VI, read my thesis. She thought the student would get some information about braille reading in developing countries as she was working on a similar topic. This lady (doctoral student) mentioned me to her fellow NABP members and on that basis; the organization engaged me as a member of a team to evaluate rehabilitation projects that it sponsors for adults with visual impairments in developing countries. I did this work for NABP in India and Uganda. The team observed the projects' activities, interviewed the participants, analyzed documents, and triangulated data sources, with the aim of comparing emerging themes with the initial project objectives to see if they were achieving according to plans.

With a Masters' degree, I went back to KISE in 2005 and embarked on preparing teachers of students with VI, with rejuvenated vigor and confidence. The administration also put me in charge of small research projects that our students conducted. We had students who were blind, and I was often their research advisor. In 2009, I got to interact with a professor from the United States who came to Africa and needed to connect with professionals in universities that had special education programs. I gladly offered to take her to different institutions in Kenya and Uganda, and in appreciation, she assisted me in getting a scholarship for a doctoral program in special education at Texas Tech University (TTU). I came to TTU in September 2010 to pursue my doctorate in teacher education for students with VI.

While at TTU, I have volunteered and participated as a team member in in-service training of teachers for Helen Keller International and Perkins School for the Blind for students with VI in Sierra Leone (West Africa). Out of 50 participants, approximately 40 had VI, and did not have any training in teaching students with VI. We visited special schools for students who are blind, and learned that most of the teachers in the schools had VI, and did not have any training in special education. The teachers who are blind in Sierra Leone, just like in Kenya are employed in schools for the blind. The government assumes these teachers are well qualified to teach as they are blind. They are expected to use their experiences as students who were blind. This experience in Sierra Leone left me with questions in my mind that needed answers. What was it like to be charged with executing the general education curriculum to students who are blind when the teacher is also blind? What accommodations did these teachers use or need to teach the curriculum effectively? Lincoln and Guba (1985) observed that a research problem is a state of

affairs or situation that begs for additional understanding. Erlandson, et al. (1993) also noted that the problem statement is “an expression of a dilemma or situation that needs to be addressed for the purposes of understanding and direction” (p. 49). It struck me that I needed to find out what goes on in the classrooms when both the teacher and the students have visual impairments and that the insight from the study would give direction to professionals and participants in the field. At first, I wanted to conduct the study in Sierra Leone, but as a graduate student living on an assistantship stipend, my travel budget was limited, so I shelved the idea, and with the advice and assistance from my dissertation chair, I conducted the study in the United States.

I was positive that the results of this study could help influence policy on the needs of people with VI, and the information would be useful for teacher preparation programs that admit students who have VI. I knew the challenge was huge, but as Erlandson, et al. (1993) observed, the “interest in the problem may be what sustains the researcher through the months or years of demanding labor” (p.43). I believe this is what kept me going for more than two years.

The Participants

Awino. Awino was a female participant in her early sixties. She was a TVI by profession but at the time of the study, she worked as an education regional coordinator of the services for students with VI. She also provided itinerant services to students with VI but did not have a caseload and could not be listed as a child’s TVI on the IEP.

Awino reported that she was the first child to young Hispanic parents who were inexperienced in bringing up children. She had congenital retinoblastoma, “the most common eye cancer of childhood” (Corn & Erin, 2010, p. 173). The treatment options for

the condition include surgery, chemotherapy, and radiotherapy. The primary goal of treatment is to remove the tumor, while saving the vision is secondary. The visual outcome after treatment usually depends on the location of the tumor and whether or not both eyes are affected (Corn & Erin, 2010). For Awino, both her eyes were affected. Her parents sought early medical intervention services, and she had successful surgeries to remove the cancer, a procedure that saved her life but made her totally blind.

Apart from teaching the students with VI, Awino provides consultancy services to TVIs, general education teachers and parents of students with VI. She also trains teachers and other professionals in the region on topics related to educating students with VI.

Anyango. Anyango was a female participant in her early sixties. She was a TVI by profession and worked in a public school that had a program for students who have VI. She taught developmental literacy skills to students who had VI from all the grades. Sometimes she had students on different grade levels in her classroom. As a result she always had TAs to work with individual students.

Anyango, like Awino, was born with blindness (did not reveal the specific visual condition she had) as the first born to teenage parents who did not have experience in bringing up children. Like Awino, she is of Hispanic origin. The parents sought early educational intervention services and by the age of four, she was enrolled in a program for students who were blind, where she learned compensatory skills for students with blindness.

Apart from teaching, Anyango provided consultancy services to the school district concerning education for students who have VI. At the time of this study, Anyango also

served on a panel that was revising the curriculum for teacher preparation for students with VI. In addition, she had all the responsibilities like any other teachers in her school.

Atieno. Atieno was a female teacher. She was 61 years old and had visual loss resulting from glaucoma, a visual condition that is caused by ocular pressure that results from the buildup of aqueous fluid in the visual system (Corn & Erin, 2010). The pressure may cause damage to the nerves of the retina and the optic nerve. The condition is treatable if detected early. Otherwise, it eventually leads to visual loss.

Atieno was a victim of a misdiagnosis in the early stages of the condition. As a result, she did not receive early intervention services. She said, *“They took me to an obstetrician....., not an ophthalmologist or an optometrist”* (Atieno, P.1, L11-13). She eventually lost her sight at 15 years of age. Although she had some light perception and enough vision to move around in a room, she used braille to read and write.

Atieno was a TVI by profession and worked in the same public school with Anyango that had a program for students who have VI. She taught developmental literacy skills to students who had VI from all the grades. Sometimes she had students on different grade levels in her classroom. As a result, she always had TAs to work with individual students. Apart from teaching, Atieno reported that she provided consultancy services to the parents of students with VI on how to help their children at home.

Adoyo. Adoyo was a female teacher in her early sixties. She was a certified TVI and worked in a residential school for the blind where she taught different subjects in both junior and senior high school grades. She demonstrated great competency with different assistive technologies for people with VI that she accessed.

Adoyo lost her vision as a result of congenital retinitis pigmentosa, also known as retinal dystrophy. This eye disease results from premature degeneration of the eye's photoreceptor cells (rods and cones), leading to progressive loss of vision (Rivolta et al., 2002). Retinitis pigmentosa is caused by mutation in the genes that are responsible for the development of the retina (Corn and Erin, 2010), and it is irreversible. Having been born when her family lived in a rural setting in the early 1950s, there were no educational services then for children with VI in the rural areas. Such services were only found in big cities. The family enrolled her in a residential school for the blind in the city about 200 miles away from home. This experience enabled her to learn the compensatory skills for people with blindness early in life.

Summary

In this chapter I have described and justified the methods that I used in the study, and explained the analysis process. I have also presented my context as a researcher, a process that enables the reader to have insight into my interest and connection with the research problem. Finally, I have briefly introduced each of my participants as individual cases.

In conclusion, all of the participants were blind and braille readers. They were teachers of students with VI in public or residential schools in the South West part of the U.S.

CHAPTER 4

RESULTS

In this chapter I present results from the participants as responses to the research questions. The presentation will be in two levels of within-case and cross-case analyses. In the within-case analysis, I will present information from the individual cases based on the categories generated. Results for each category will include information from interviews, observations, and documents. The cross-case analysis will involve identifying and presenting the similarities and differences in the results based on the same categories across the four cases. The categories will be used as sub-titles in the chapter.

The Participants

All the participants were female, and in their sixties. They had varied visual conditions. Three of them (Awino, Anyango, and Adoyo) had congenital vision loss and went through early childhood intervention programs for children with VI. Atieno lost vision at age 15 while in 10th grade, and learned compensatory skills from a neighboring elementary school that had a program for students with VI. All participants were non-visual readers. Awino, Anyango and Atieno were braille readers while Adoyo mostly used auditory medium because she was progressively losing sensitivity in her fingers. All the participants were certified TVIs.

Results from Awino

Early life and onset of visual impairment. Although Awino had successful surgery to remove tumor from her eyes, she totally lost her sight. Her mother's first reaction to her blindness was shock because she had no experience in bringing up a child who was blind. Referring to her mother's reaction to her blindness, Awino said, "*She*

fainted because she thought. What am I going to do with this child” (Awino, p.1, L20)?

Awino gives credit to herself for her early initiative to interact with the sighted world as a child who was blind. She says that after her surgery, she figured out how to manipulate the environment (e.g., playing music on the record player), a move that motivated her mother to accept her condition and start figuring out how to help her learn independent living skills, *“Look at her, one day being blind and she’s already doing this”* (Awino, p.1, L25)! She recalls her mother saying.

Awino says her mother treated her like any other child and tried out different strategies to help her learn independent living skills. Her mother facilitated her first encounter with accommodations for people with VI. Thus she reported of her mother, *“She would close her eyes and button her clothes to figure out how to teach me”* (Awino, p.1, L27-28). This early learning is still reflected in Awino more than 50 years later. She is very particular in the way she dresses. I observed that Awino pays attention to details such as color coordination of her clothes and accessories. She dresses according to occasions and wears high heels everyday to the office. Her nails are manicured, and her hair is styled. She told me that she has her hair colored every six weeks and she applies make-up before leaving for work every morning (p.24, L10-13). *“I would fall, skin my knee, and hit my head... My mother would clean me, and I go back outside (laughing). I rode..., skated, played with friends”* (Awino, p.1, L30-32), She summarizes her early life as a child who was blind.

School experiences as a student with visual impairment. Awino spent the first year in school as a residential student but reports that she had a traumatic experience and did not learn much because the school was far from home and the culture was different

from her own. She said, *“I couldn’t talk because every time I opened mouth and said anything in Spanish, they would punish me. The food was different, culture; everything was just traumatic for me”* (Awino, p.2, L19-22). In the second year, she moved to a day-school near her home after her mother and other parents of children with VI advocated for a teacher of the VI to be hired. She was in a partial pull-out program with a resource room where she was taught “blindness skills” (i.e., compensatory skills for students who are blind). She observed, *“whenever I had a problem understanding...in the regular classroom, I would go to my class and ask my teacher....she prepared everything in braille and everything was just beautiful”* (Awino, p.3, L24-25, 28). In high school, she continued in a public school setting and was the only student with VI in the school. She assumed the other students did not like her as they did not interact with her (Awino, p.3, L38). Her mother advised her to take the initiative, reach out, and open up to her peers (Awino, p.3, L39). This advice is still reflected in her daily life. I found her very social, and she seemed to take the first step to reach out and talk to people. I observed this at her place of work and on the bus ride to and from work (P. 24, L17-19).

In high school, she had accommodations in the form of itinerant teacher services, and her regular teachers assigned fellow students to provide courtesy services whenever she needed it. The itinerant teacher, however, visited her only once a week and worked on mainly braille (Awino, p.4, L17-20).

Process and /motivation to pursue a career in teaching students with visual impairments. Awino did not want to be a teacher initially. She tried other areas at the university that she thought had better potential for earning good money and meeting new people. When this did not work out and time for her scholarship was running out, she

decided to change to a career in education. She wanted to teach students with VI. The professor in charge of teacher of students with visual impairments program at that time, however, discouraged her because she was blind. Awino observed, *“I loved Dr. T., but at that time she said that blind people should not teach blind children”* (Awino, p.5, L34-35).

However, she advocated for herself and was accepted in the program conditionally. Thus she reported, *“I said, ‘Dr. S. these children are not going to live with me (laughing). They’ll still have their parents. I do feel there’s something to impart to these children.’ She said, “Ok, I’m going to allow you in the program, but I want you to know that you are going to be accountable for everything”* (Awino, p.6, L1-7).

Skills and strategies used in teaching students with visual impairments. One of the important skills that Awino emphasized as crucial for people with VI is working with, and through, other people. She said that teaching children with VI involves many visual tasks that have to be done by sighted people. She said that as much as she usually knows what to look for during observation, she has to ask specific questions to guide the assistant who is sighted about the information to give her. She would ask questions about the visual behaviors of students and the layout of the environments (e.g., during home visits). During assessment of visual behaviors, she said that she would use assistants who are sighted, but she had to give them clear instructions on the steps of the tasks. She said, *“I had to learn to question someone who would work with me.” “Ok, let’s show him this card; let’s get 10 feet away”* (Awino, p.9, L24-25, 27). *“I want you to watch his or her eyes to see what happens when they change lighting”* (Awino, p.10, L4-5). *“I made sure*

that I knew everything about the functions of the eye and how the different problems and impairments affect your vision” (Awino, p.7, L7-8).

The other skill Awino emphasized as important is being familiar with the curriculum content and instructional differentiation. In an IEP meeting that I attended with her, I observed her explain to the members that learning through hearing needs to be repeated over and over and backed with exposure to reading experiences so that students can retain what they learn. She also emphasized and practiced planning for and preparing work for students in advance (Awino, p.25, L18-23). For a home visit that I did with her, I noticed that she had prepared reading text in braille for the student to practice reading at home after the session (Awino, p.25, L40).

Awino considered it important to teach students with VI to use technology and to use professional organizations as sources of information for teachers who have VI. During a home visit with her, I observed her give the student instruction on using the Apex (a device with both braille and text to speech outputs) to create documents (Awino, p.26, L2-4). She also told me, *“I rely a lot on the services of the state residential school for the blind and visually impaired. They have a lot of good people in the outreach department, so I bring them in and sit with the trainees and take notes and I follow up”* (Awino, p.10, L18-20).

Positive aspects about the job. Awino reported that she enjoys the training sessions that she would hold with her co-workers as they got to learn from one another (Awino, p.10, L16-17). She loved the continuous learning and the success of students who have VI that have passed through her. She said, *“If they accomplish great things, like I have a student..... I’ll be very proud that I had a little bit of something to do with it”*

(Awino, p.11, L23-26). In addition, she was happy with the increased access to information for people with VI as a result of the available technology at the place of work. She commented, *“While I’m here, I have everything I need (laughing)”* (Awino, p.17, L9).

Role as a model to students with visual impairments. One of the important roles that Awino said she plays is providing consultancy services to both the students with VI and their parents. She reported telling her students, *“I’m blind and use braille like you, and I’m here, you can talk to me”* (Awino, p.11, L12-13). She would use herself as an example of success to people with VI. She also shared with the students and their parents about the possibilities available for people with VI, and the fact that people who are blind can work and lead normal lives. In addition, she would teach parents about blindness and individual differences, *“I speak to parents and tell them, don’t compare your child with me”* (Awino, p.11, L21). Awino said that as a person who is blind, she could be reality-based with the students and know when they were not being truthful. She reported telling her students, *“I know, so don’t give me any excuses why you are not doing your work, because it can be done”* (Awino, p.11, L16-17). In addition to the roles, she explained that being blind added some credibility to the work she did. As a person who is blind she could demonstrate to the students the techniques of how to accomplish tasks and be an example of success to them as she observed, *“when you talk to someone that is kind of living in your shoes, you kind of believe it a little more. If you want to know something about women, you are not going to ask men about it”* (Awino, p.6, L20-22).

Challenges with the job resulting from having a visual impairment. One of the challenges she faced in her work was people’s attitudes. She thought that many

people had not accepted that people who are blind could perform their duties like any other person (Awino, p.12, L1-2). Although they would not openly say it, Awino said that she could sense that when she interacted with different people. She stated, *“They have that feeling and, I sense it. A lot of times when we get to schools, they look at my assistant, like; ‘May I help you?’ and they are not talking to me”* (Awino, p.12, L2-6).

The other challenge she mentioned was about large volumes of paperwork that special education teachers have to deal with because their job involved working with a lot of data that was not always compatible with the format on the computer. She said, *“I don’t like some of the paperwork (laughing). I have to collect a lot of data, and that’s not my thing* (Awino, p.10, L32-33). *A lot of IEP stuff is now on the computer and it’s not always compatible”* (Awino, p.12, L38).

The other challenges she dealt with were to do with the technology that could enhance access to information for people with VI. She said that as an employee, she had access to all the technology that she needed to access information, but the technology did not belong to her. While doing observations in her office, I noticed that she had different types of AT (Awino, p.24, L28-39). She described the braille book and note-taker as “very empowering equipment” but that they belonged to the regional service center, and on the day she leaves, the AT would remain in the office. She observed, *“on the day I leave, I leave everything here”* (Awino, p.24, L33).

Suggestions concerning accommodations for teachers with visual impairments. Awino thought that for people with VI to access any form of accommodation, it is important for them to reach out to sighted peers and administrators who may not know how to get along with individuals with VI or the kind of

accommodations to provide. She also thought that it is important for people with VI to learn to try out new technology because “it could be done.” Describing her trial and error strategies with new technology, she said, *“People thought I was very smart (smiling) because I would open up the tower and would pop up this little card and then plug in this thing and wow! It began to talk (Laughing)”* (Awino, p.18, L24-25)!

Awino had advice for teachers who have VI; they should ensure that they know the material that they are teaching and involve co-workers in the tasks that require visual input (Awino, p.13, L30-36). She suggested that during training, if the university training programs for TVIs have students who have VI, they should create awareness in the students about the options that are available out there (e.g., increasing efficiency by making use of co-workers), *“you cannot do it alone. Obviously there’s a lot of observation that goes in it”* (Awino, p.12, L32-33). *“Universities need to make them aware of these things to give them options; ...when they go to observe them, point to them, hey, have the teacher here involved. You don’t have to do all this stuff”* (Awino, p.13, L19-21). She advised the teachers with VI that they consult with parents, too. When they do home visits, they can train the parents and encourage them to help their children (Awino, p.10, L3-5).

Results from Anyango

Early life and onset of visual impairment. Anyango reported that although her parents were young and almost illiterate, they enrolled her in an early intervention program for children with VI where she learned compensatory and independent living skills (Anyango, p.11, L1-3; p.12, L2-4). She reported that at home, her mom treated her like any other sighted child, and she had opportunities for explore and play, like an

ordinary child (Anyango, p.11, L28-32). She also reported that her mom taught her concepts through tactual manipulation of real objects to compensate for her limitation in incidental learning (Anyango, p.13, L1-3).

School experiences as a student with a visual impairment. From kindergarten to sixth grade, she went to a day school program for students who were blind and the accommodations she received involved doing everything in braille. She reported, *“I went to a day school, and I went home every night, but there was 100% braille program where I also learned the keyboard”* (Anyango, p.2, L20-21).

In high school, she attended a resource room program, and some of the accommodations in the program included being supplied with materials and equipment (e.g., braille and typewriter) and having reader services. In this program, she attended all classes with the students with sight as reported here, *“There was a resource room that was supplied with the materials we needed. Occasionally, I would need a reader, but usually, everything was supplied in braille”* (Anyango, p.4, L4-6).

Process and motivation to pursue a career in teaching students with visual impairments. Anyango landed in the teaching profession as a last option and actually went to train as a general education teacher when she was in her early 40s. She first got a degree in social work but lost interest during internship. However, she confessed that she enjoyed the education aspect of social work during internship. She said, *“I didn’t like it once I was in internship, but I did actually enjoy the education personally. So I taught a course to the clients and decided that, that was what I wanted to do”* (Anyango, p.3, L2-4).

After completing the teacher education program, she taught in regular schools and enjoyed all the accommodations that she received. She stated, *“There was a reader service to provide work outside school. So that person helped to sort through the curriculum, grade papers according to my standards, helped me set up tactual kind of charts. Basically, she was my eyes”* (Anyango, p.3, L11-15). She decided to teach students with VI because of her interest and the fact that she was the only person available in the school district who was knowledgeable about VI, though not certified, *“I was the only teacher who had the interest and knowledge. I did not even have my teaching certificate yet. I had to get it as I was working”* (Anyango, p.1, L15-17).

Skills and strategies used in teaching students with visual impairments. One of the strategies she emphasized was for teachers to prioritize safety and classroom management. She attributed this to her experienced mentors from the National Federation of the Blind. She observed, *“There was a huge pool of other blind people who had done the same thing, so they were good resources”* (Anyango, p.1, L27-28).

As a general educator who was blind, she would arrange the classroom to enable easy access to each student (Anyango, p.1, L33-34). In her present class, I observed that the students sat around horse-shoe shaped tables which ensured safety during movement in the classroom (Anyango, p.19, L20). For classroom management, one of the strategies I observed her using was her focusing the attention of the students at the beginning of a lesson. For example, in a math lesson, she started by engaging the students in mental work activities (Anyango, p.23, L40-43). She also reminded the TAs who were in class to sit in-between the students to ensure that they were all engaged.

The other strategy that she said worked for her was planning to effectively use the accommodation services that were available (Anyango, p.4, L15-19). She used the reader services that were only available for 10 days a month to mostly do paperwork that was not accessible on the computer and during the heavy paperwork times. She observed, *“Mainly what they do is to help us with paperwork, filling out any part of the IEP or any paperwork that may not be very accessible on the computer”* (Anyango, p.4, L17-18). *“There are heavier times like report cards; there are heavier periods like when we get things ready for the extended school year. There are heavier times so we can rearrange...those hours according to when we need them most”* (Anyango, p.4, L30-33).

Anyango was a self-advocate as evidenced by her fighting for her rights for accommodations. She acknowledged the fact that some administrators may not understand the kind of accommodations that individuals who are blind need; hence, she made them aware of her needs according to the provision under the law. She said, *“I had to ask, I had to really push, I had to advocate to receive the reader services because they were trying to make it my assistants’ job, and I’m like ‘no, my assistants are hired to work with the kids and not to do my paperwork. Once that was understood, there was no problem in getting it”* (Anyango, p.6, L4-7).

Anyango considered having skills in using AT crucial. She used technology frequently to access information. Although not all information was electronically available to her, it did not stop her from using the available technology to perform her duties (Anyango, p.17, L34-36). At times when electronic documents were not compatible with the programs that she was using and could not be worked on electronically, she would re-type them as Word documents then email them to the

administrators. At times, some documents came with a lot of information that she did not need. She had to edit such documents, make copies, format and then put them in formats that were accessible to people with VI. She reported, *(regarding the evaluation forms)* “*So what we do is that we are to type our notes into a word file and just email her (the principal) that with the forms, and then she can cut and paste into the form to get it done. I just did that this morning*” (Anyango, p.18, L25-26).

Anyango believed in planning in advance for her students’ individual needs. She had to put material for the students in the format that was accessible for each student. During this study, I observed her work with the students on a new spelling list that she had developed, and she had copies in both braille and large print (Anyango, p.20, L42-45). “*I spent really my time in summer to copying and pasting from the website into a Word document and formatting it and putting in braille. So I made braille files of each grade level in a volume with dividers for each subject*” (Anyango, p.17, L22-26).

The other strategies that the teacher used were to take more time with the students and planning teaching carefully. She said that she knows it takes longer for students with VI to learn concepts, so she would plan to take more time to teach the concepts and use different strategies. During the study, I observed her: giving one-on-one attention to each of the students (e.g., spelling a word, giving its braille notation, including spacing) (Anyango, p.20, L9); giving the students time to learn new concepts (e.g., a TA was assigned to one or two students and they would check to ensure each student got the correct spelling. The teacher would not move to the next step of the lesson until the TAs assured her that all the students got the right spelling and knew the concept) (Anyango, p.20, L9-10); take much time to get the concepts across, but she seemed more concerned

with what the students learned than the time taken; the use of repetition, and reminding the students of punctuation and the need to read their work over and over again (Anyango, p.21, L3-12). *“It does take longer for them. I mean, it is careful, careful teaching”* (Anyango, p15, 36-37).

Anyango emphasized that choosing materials for teaching students with VI has to be done very carefully. A teacher with VI may have to do it with many more steps than a teacher who is sighted. She said, *“Materials for VI kids need to be carefully chosen to meet the needs of the student. So that’s like, that’s another piece of my job that a sighted person will have to do, but maybe not with as many steps”* (Anyango, p.9, L23-25). I observed that at one corner of the classroom, there were transparent plastic cans with different items inside. The cans were labeled with different alphabetical sounds in braille. All items in a can started with the sound on the label (Anyango, p.19, L24-26). She also explained to me that she taught braille contractions (Braille contractions are shorthand for words or parts of words. The contractions use fewer braille cells/symbols than the uncontracted form. Contractions are used in braille to facilitate reading because the speed of reading by touch depends on the number of characters in a text. They also reduce the bulk in embossed transcriptions) that would go with the grade levels so that the students could read the same grade level materials with their peers who are sighted. One disadvantage that the teacher noted about students with VI was that the books for students with sight had pictures to enhance what they read and made it interesting, but students who are blind missed out on this input. She stated, *“I had again to get those plans so that I could look them over, and so what I needed to do was take out those parts that I needed, put it in a document, put in a Duxbury and print out my braille part of it that I could use”*

(Anyango, p.17, L34-36). (Explaining how she learned to iron clothes as a young child)

“I explored the whole structure of the ironing board and the iron and mom taught me all the parts and how you did it and it was all done when it was cold” (Anyango, p.13, L1-3). Anyango believed that careful teaching should involve taking the students through tactical step-by-step manipulation of what they learn because they cannot learn concepts at a glance. She observed, *“People don’t realize the sighted get the whole picture right away by just looking at something. But a blind person only gets what they touch. They only get that part of the thing”* (Anyango, p.13, L7-9).

To enhance this philosophy, the teacher used models in her teaching to give the students the total picture of what they learned. As I observed one of her lessons, I noted that at one point she realized that a student was not getting the concept because he was not responding to the questions correctly. She gently held his fingers and helped him to recognize the shapes of the braille symbols that they were learning (Anyango, p.21, L3-5). I also observed her involving the students in practical activities such as counting real pairs of gloves to learn the concept of counting in pairs (Anyango, p.24, L14-16). I observed her teach the recognition of braille symbols by using the shapes and number of dots in a braille symbol (e.g., “there is a belly right there”) She would say as she moved a student’s finger over the symbol for ‘w’ (Anyango, p.21, L45-46).

The other strategy that Anyango used was to work overtime so that she could meet job expectations. She said, *“I really don’t want to set precedence, so a lot of times, I am up till midnight, getting things done so that I can get them done on time”* (Anyango, p.9, L31-33). She also admitted that at times she would use trial and error approach,

especially in learning new technology as here stated, *“Just kind of trial and error, just doing it, oh yeah”* (Anyango, p.7, L9).

Positive aspects about the job. Anyango said she likes her job for two main reasons; enhanced accessibility through technology provided by the school and the reader services that come as part of the Section 504 plan for accommodation “Anyango, p.4, L15-19). The teacher reported that the IEP document that the school used was electronic and very accessible. She said, *“It’s very easy to get into the IEP. It’s electronic”* (Anyango, p.6, L21). In addition, the school provided each teacher with computer equipment and the programs to help the teachers who have VI use computers such as a screen reader, a braille embosser, and a scanning program. All the AT enabled the teachers with VI to read their books and complete their paperwork. Anyango reported, *“We get our computer equipment, we get the programs that will help us use it; we get screen reader, braille transcriber; we get a scanning program so that we can read our books, our paperwork”* (Anyango, p.6, L7-11). During the study, I observed the teacher as she used a laptop, a PC with “Job Access with Speech (JAWS)” program and Duxbury software to scan documents. As she went about her daily duties, I could observe a high level of independence, efficiency, and confidence resulting from the use of the AT. It was also, however, noticeable that it took longer (e.g., to print) using the AT than it would have taken with the regular printer (Anyango, p.27, L15-27).

Anyango was also happy with the reader services that the school provided as part of the implementation of Section 504 Plan. She received 10 hours of reader services per month and said that she used the services mainly for paperwork that was not accessible on the computer (Anyango, p.4, L17-19).

Role modeling to students with visual impairments. Anyango reported that serving as a role model for students was a way of showing her gratitude to the professional mentors with VI who played important roles in her life as a child with VI. One of the ways in which she would mentor her students was by showing the students that they could be adults who are mobile, employed, and leaders of their families. She observed, *“I remember how important the teachers were who were in my life as a child, and I feel my role is to model for them”* (Anyango, p.10, L1-2). She also said she shared her real life experiences with the students and encouraged them to ask her questions about how adults with VI managed their lives. She said, *“I talk a lot about my family and the fact that I was a mom”* (Anyango, p.10, L4-5).

Unlike the teachers who are sighted who might, out of sympathy, allow students with disabilities to get away with unacceptable behaviors, teachers with VI can be reality-based with the students and their parents because they know what the students are capable of accomplishing and their limitations. Anyango observed, *“I think it’s an everyday kind of thing and it gives the kids credibility on what we ask them to do. You know if you ask a kid to use his cane everyday and all the time, and you nag him about it, you know, ‘keep that cane moving’. A sighted person can’t do it to them”* (Anyango, p.10, L7-9). Anyango felt that she could address stereotypic behavior issues (e.g., rocking) in children with VI more freely and with more impact than sighted teachers. She said, *“I can address their blindness. ‘Your sighted fourth graders are not waving their heads back and forth. So you better stop that!’ A sighted person can say that, but it doesn’t have the same push as a blind teacher saying it”* (P.2, p.10, L16-18). She could also model compensatory skills to the students with VI more correctly than teachers who

are sighted. *“In inclusive models, kids who are blind start using braille, but they are using it wrong because there is no one there to model how to do it right, or to monitor and help them to fix it immediately”* (Anyango, p15, L37- p.16, L1-2).

Regarding her relationship with the parents of her students, she preferred to give them guidance on how to raise children with VI to showing them sympathy. She said, *“I will be there for you and for guidance and whatever you need in as far as how to raise a blind child. But I’ll not be the one that cries with you”* (Anyango, p.10, L29-30).

Challenges with the job resulting from having a visual impairment. The main challenges that the teacher faced are limited access to information and the additional responsibilities that she had to undertake to access information fully and discharge her duties like her sighted peers. She explained that teachers who have VI had to be computer savvy so that they could use the electronic documents on the computer (e.g., IEP). In addition, teachers who have VI had to learn to use the screen reader programs so that they could manipulate the documents. Sighted teachers do not have this additional responsibility. Anyango observed, *“If you don’t know how to use the screen reader computer or you have difficulty that can slow you down”* (Anyango, p.6, L24-25).

As much as teachers with VI could use their assistants to work on the print documents that were not available electronically (e.g., report card book), the teachers with VI had to be conversant with the structures of the documents so that they could guide the assistants. The assistants did not have the professional training to work on these documents; hence, all the responsibility remained with the teachers as Anyango observed, *“I have had problems with my reader where she left out important information about the*

set up, and I left out some grades because she didn't tell me there were sub-categories" (Anyango, p.7, L17-19).

In relation to this added responsibility, I observed Anyango when she attended a test grading meeting for the school district. In the meeting, the panel members were to report on and submit the grading they had done. Although Anyango had completed and recorded her grades in braille, she had to re-read it out loud so that the colleague could record it in print. In the process, she raised concern about one of the question items in math that she thought was a disadvantage to the students with VI. The question came with pictures that the sighted students could refer to in addition to the word descriptions, but the students with VI only had the descriptions in braille (Anyango, p.26, L31-42). Not all documents have gone electronic. The school still used paper report cards, and teachers with VI had to seek sighted assistance to access the documents.

Another limitation with access at this school was that people with VI could not get information at a glance and at times they had to purchase online resources to get information that was available to teachers who are sighted free of charge. She observed, *"I can't just go to the workroom, the shelf and say, 'this looks like a good book!' So that means I have to make decisions deliberately. I have purchased for myself a subscription called Ed. Helper, and Ed. Helper has a lot of lesson plans in there"* (Anyango, p.9, L7-10).

The teachers with VI at this school also spent a lot of time searching for information, and some sources of information had restrictions such that information could not be moved from one computer to another. She said, *"There's another one I told you*

that is A-Z that has thousands of books on it and those in a format that is not easily moved from one computer to another” (Anyango, p.9, L14-13).

Another challenge was working with support staff who did not understand the needs of people with visual impairments. Anyango gave an example of the lack of understanding that may arise when a teacher with VI wants to use some resources that have good information but cannot be easily scanned by a person with VI. A person who is sighted could do such scanning more easily and quickly because she can see and avoid pictures that take time to scan and are not necessary. Anyango said, *“That’s something I cannot do for myself, and a sighted person can do it very quickly. And we are having a little battle over that because they don’t understand why I want it done that way. Why they can’t just provide some PDF” (Anyango, p.18, L13-16).*

Still, Anyango said there were some electronic teacher resources that had repeated materials that were not necessary. Such resources required editing before one could scan them for use (Anyango, p.18, L35-37). Some electronic documents could come with important information highlighted for emphasis, but the screen readers such as JAWS that the teachers with VI used would not recognize such highlighted information. Regarding lesson plan book, Anyango said, *“There is a lot of repeated material that is kind of highlighted that you can’t really see and JAWS won’t read” (Anyango, p.18, L35-37).* All these challenges with accessing electronic documents required that the teachers with VI seek the support of sighted people but, some support staff would not understand this. Therefore, they may think that the teachers with VI were making unfair demands for accommodations.

Other challenges with electronic documents were with administrative requirements. Some electronic documents in the school were not fully accessible to teachers with VI but the administrators needed for the forms to be completed and submitted electronically. Anyango said that in such a situation, she would re-write the whole document as a Word document and email it to the principal. She reported, *“The form could not work for Atieno and me but she wanted it electronically so that she could go over it with us when we did our evaluation. So I tried year after year to make it work, and it is some kind of format that I just, I don’t know why it doesn’t work. It cuts some steps”* (Anyango, p.18, L21-24).

Another challenging area for this teacher was the need for training in the use of technology. New technologies that could be used to support learning were continually being developed. All teachers needed some training support to be able to use the technology. This participant said that the school district sponsored such trainings, but they were given in large groups, making it difficult for people with VI to follow, especially when visual aids were used. Anyango reported, *“We all went to the computer lab, in the district in groups and they trained us...but it was kind of...., I sat there and listened to how it was set up. I couldn’t just do it fast enough because I didn’t know”* (Anyango, p.7, L6-8). In addition, the people who did the training (e.g., on the electronic IEP) did not understand the screen reader that the teachers with VI used.

Issues of teaching assistants also posed another area of challenge to teachers with VI. As already mentioned, the teaching assistants were not professionally trained. When working with the teachers with VI on print materials, they would sometimes leave out important information when completing forms. In addition, the teachers with VI did not

have options to choose whom to work with as an assistant. Anyango observed, *“I think they pay them an hourly wage. So you don’t have a long line of people waiting to do this. So you have to take whoever is in line”* (Anyango, p.7, L30-31). They would work with any assistant that was available to them, and the teachers had to train new assistants each time they were working with one.

Some administrators, especially the newly appointed ones, were not knowledgeable about the roles of the teaching assistants. Such administrators could assume that the TAs were there to assist the teachers with VI, which was not the case. Anyango explained that she did not consider TAs as accommodations for teachers with VI. The assistants were appointed as per the number of students who needed their services. She said, *“That’s a false impression, especially when we get new principals. And that has not been made clear, you know, they are not here to help us do our job easier because we are blind”* (Anyango, p.8, L17-20). In a braille literacy lesson that I observed, there were 10 students with VI, and 6 TAs were present.

Time was another challenging issue. Students with VI had more to learn in addition to the regular curriculum, as Anyango observed, *“Because there’s so much that they need to learn nowadays. Technology they need to learn, they need to be technology proficient, that’s our world”* (Anyango, p.15, L28-30). Therefore, the teachers had more work and needed more time to cover the curriculum.

Anyango also identified some parents as challenging. Some parents would take a long time grieving over their children’s loss of vision, therefore delaying the implementation of intervention programs. She reported, *“We have a parent...this child is not going to second grade, has had no braille because the parent can’t face the fact that*

his kid won't see. That kind of angers me. You know, it's such a waste of time"

(Anyango, p.10, L32-34).

Suggestions concerning accommodations for teachers with visual

impairments. Anyango had recommendations and suggestions for teachers who have VI, administrators, teacher preparation programs, parents, and other teachers of students with VI. She advised teachers who have VI to fully understand their work: how they do it, the resources to use, and how to instruct support staff on how to assist them. The teachers needed to be active participants in the issues of making accommodations for themselves (Anyango, p.16, L8-16). They should help the administrators to understand their needs to provide them with the appropriate accommodations. The teachers have to give guidance and be at the forefront on matters of accommodation. She observed, *"I explained so I had to go through human resource and get them to see there wasn't reasonable accommodation, and so now anyone who is a blind teacher, that's kind of an assumed thing that they've asked for"* (Anyango, p.4, L24-26).

Each teacher with VI should look at individual accommodations as her/his own responsibility. Only then would the teacher be in full control of how she or he wanted things presented. She observed concerning the IEP, *"I had to make sure that I was involved in how it was set up because how they think it should be set up may not mean what works for me"* (Anyango, p.16, L29-30). *"I think the key is you just need not to allow it to be somebody else's responsibility. It is yours. The ADA law gives you your backbone for that, but if you are just going to stop people and say, you know you have to provide this for me and leave it to whoever is going to do that, then you are just going to get what you are going to get"* (Anyango, p.18, L1-7).

Anyango thought that teachers with VI should also assume their responsibility to model the optimal ways for students with VI to accomplish tasks and learn. The teachers should challenge the students to maximize their abilities. She observed, *“Everybody needs to be able to challenge their maximum abilities, and that should be also with blind teachers”* (Anyango, p.16, L19-20). At one point in a reading lesson during this study, I observed the teacher practice this philosophy of challenging the students to maximize their abilities (Anyango, p.22, L1-5). Reading braille really looked grueling to the young ones, but as much as they were free to take short breaks from the exercise when they needed to, they were told to finish their work for the day. The teacher discouraged the students from listening to what their peers were reading and repeating what they heard. They had to recognize each braille letter by touch and figure out the words. The teacher emphasized good finger-reading techniques, *“No resting on your elbow honey”* (Anyango, p.22, L4-5).

According to Anyango, teachers with VI should take every responsibility like any other teacher. She said, *“If you are working on a site and you want to be respected on that site, you need to work like one. You need to take on all the responsibilities that come with being part of that faculty”* (Anyango, p.16, L23-25). They should also consider networking with other teachers who have VI to share effective strategies to use. Regarding the open book, she said, *“I sent notes to my colleagues because we needed to cut it and present it all together. So they needed to know what I was covering”* (Anyango, p.16, L34-35).

For the administrators, she suggested that they should consider allowing teachers with VI more time to teach the expanded core curriculum areas (e.g., braille, use of AT),

work on electronic documents that were not fully accessible, and to edit and use the teacher resources. She said, *“I’m a firm believer in intense braille instruction, intense blindness skills instruction in the beginning, how to do it right so that they really have a good foundation as they move out into the sighted world, they have skills to compete; otherwise they fall further and further behind, and they believe that that is the way it is going to be and really doesn’t have to be that way”* (Anyango, p.16, L3-7).

In setting the evaluation standards for students, Anyango suggested that the administrators should consider that students with VI may not benefit from visual supports such as pictures that enhance understanding. Concepts that the students with VI have mastered should be considered, rather than the exact correct answers during grading.

When hiring TAs for students with VI, school districts should be consistent and consider some level of professionalism. She suggested that TAs should be given some basic level of training (e.g., in braille) as Anyango observed, *“We prefer this and of course it makes our job easier when they do it. It is that they learn braille to assist the kids”* (Anyango, p.8, L27-28).

Anyango also emphasized the importance of parental involvement in the early lives of their children who have VI. The parents should be encouraged to enroll the children in early intervention programs so that the children can develop confidence and learn compensatory skills. She reported, *“At 4 years.....she (referring to her eye doctor during childhood) recommended a school, and she and I feel that that was the key to my success.... That’s where I learned a lot of self help skills, a lot of just body awareness and body movements”* (Anyango, p.12, L2-8). Parents should also be encouraged to allow children with VI to venture out and experience life so that they can

learn. She reported of an incident in her childhood, *“The whole day, I got up and fell, got up and fell, got up and fell, and they (sighted peers) were right there to help me, and my mom was right there, behind the window, watching the whole time, crying and wringing her hands wanting to run out there and she didn’t.... That was just so wonderful for me that she did that. That she did not jump in”* (Anyango, p.12, L15-20). They should let the children know that they will one day grow into independent responsible adults. Anyango said, *“That was just instilled in my mind that I would do that. That was actually kind of a role model. There was never going to be an ‘if’. It was a ‘when’”* (Anyango, p.12, L29-30).

For the teacher preparation programs that prepare TVIs, Anyango suggested that they should use the philosophy that people with VI are capable of, and know how to do things. She observed, *“What do you believe about the capabilities of blind people? Because you are not just working with kids, you are not just working with teenagers. You are working with future adult blind people that you are instilling not only knowledge and skills but values”* (Anyango, p.14, L9-121).

She further recommended that the teacher preparation programs for TVIs should consider exposing students to practical experiences such as found in some model programs where students experience full immersion into the world of blindness. She observed, *“The program I have appreciated most is the program in Louisiana, a teacher prep program that is actually National Federation of the Blind oriented in their thinking....when you come to their teacher prep program, you spend two months under sleep shade. You do everything under sleep shade; you have to read braille tactually, not visually as a sighted person”* (Anyango, p.14, L37-37; p.15, L1-4). She observed that it

was also important for the programs to work with organizations of the blind to develop curricula for TVIs.

In addition, Anyango advised the teacher trainees who have VI to be aware of accommodation issues and identify their individual needs and how they would like these needs to be met. She said, *“Potential teachers, I should say this is your chance to work out those issues of accommodation, and this is your chance to figure out what your needs are and how to get them met”* (Anyango, p.16, L8-10).

Results from Atieno

Early life and onset of visual impairment. Atieno was born sighted and attended regular schools up to 10th grade when she developed visual problems as a result of glaucoma (Atieno, p.1, L8-17). Although the condition is treatable, her case was initially misdiagnosed and by the time the correct diagnosis was made, her eyes were already damaged and could not be corrected. Atieno appreciated the support she got from her family and friends at school and from the school administration (Atieno, p.1, L34-35). She said they all wanted to help in whatever way they could. Although she was in senior high school, the school administration organized for her to learn braille skills in a neighboring elementary school that had a program for children with VI.

School experiences as a student with a visual impairment. Atieno attended public schools up to the eleventh grade, but as soon as she was identified as needing services for the students with VI, the school made arrangements for her to receive the accommodations that she needed at that time. She was given time to go to a neighboring elementary school that had a program for students who were blind to learn braille. She said, *“They did have a school for blind students. It was an elementary school from the 1st*

to 8th grade..... I went there a couple of periods to learn braille” (Atieno, p.1, L21-22).

She acknowledged that her peers were supportive and wanted to help whenever they could.

Process and motivation to pursue a career in teaching students with visual impairment. Atieno said that she always wanted to be a teacher because she had teachers in her family. She made up her mind to be a teacher for students with VI after losing her sight. She reported, *“When I lost my vision at 15, I still wanted to be a teacher, but then I switched my idea and said I want to teach blind students”* (Atieno, p.2, L4-6). She studied for, and earned all three certificates (general teacher education, special education, and teacher of students with visually impairments).

Skills and strategies used in teaching students with visual impairments. One of the strategies Atieno said she valued was to work with parents of the students with VI. She believed it was important to get information to the parents about the resources that were available for their children. She did this, especially with the parents whose children were young and said that if the children were older students, she would give information about resources directly to them, *“If I was working with older children, I would tell them directly and show them and teach them how to access what they need. But when they are young like these (referring to the students in her class), you have to make sure that you get the information to the parents”* (Atieno, p.2, L32-35).

Atieno believed in using direct instruction with the students who have VI because she understood how work could be confusing when one had a vision loss. Therefore, she reviewed the content to be learned and provided individualized instruction to her students. The teacher used individualized instruction. During the study, I observed her

give each student tasks to perform at his or her own pace and level (Atieno, p.11, L1). *“I learn how work confuses them, and so with the information, my goal or my role is to take that information and teach the child in a way that they can get it”* (Atieno, p.3, L17-19).

In a math lesson, some of the students could comfortably solve multiplication problems mentally while others needed one-on-one assistance while using concrete objects.

Because the students could not get information at a glance, the teacher applied one-on-one demonstrations most of the time. I observed her give instructions on an individual basis about writing fractions in braille (Atieno, p.11, L1). The teacher presented learning materials in accessible formats for individual students. I observed her using multiplication tables during a math lesson that were either in braille, large print, or contrasting colors, depending on the student who would use it (Atieno, p.10, L33-36).

The teacher used TAs to perform visual tasks. I observed her instruct the TAs in her class to verify what the students with low vision had written. She further explained that although she had a little vision that she could use to move indoors, she was not able to verify if the answers that the students had written in print were correct (Atieno, p.4, L16-19). As much as she was technology literate and could use JAWS to access information on the computer, she preferred to use a TA (if available) to read for her what was on the computer screen because that way it moved faster than having to figure out JAWS. The TA could assist her to navigate the computer screen with the mouse, to select text, copy it, and put it on the clipboard (Atieno, p.12, L20-26).

The teacher believed in interactive learning. I observed that she was very flexible with the students. She would give them time to ask questions and express curiosity (Atieno, p.12, L36-37). In addition, she expressed that she preferred to use varied

learning activities, and a multisensory approach (referring to a project that the students had worked on), *“They could find the pictures and they did the cutting and they pasted it, more interactive so that they can use their multimodal sensory activities where all their senses are involved; the hearing, the seeing, the touching”* (Atieno, p.3, L29-32).

Atieno believed in planning work in advance because for a person with VI, planning takes time and when she planned, she felt good because she had a guide to follow in her teaching. She said, *“What I do, is I start way in advance. Like I know I have IEP coming at a certain time. Well, I start like a month in advance. I do it in advance because it takes time. And then if I don’t do it like that, it just hits me and then I panic and then I’m not good at all and I don’t get anything done”* (Atieno, p.9, L21-26).

Positive aspects about the job. The teacher gave credit to her public school because of the wonderful accommodations she was enjoying. She observed, *“They have done an excellent job in accommodation. I have to admit that. I guess it can always be better, but not.... they have done an excellent job”* (Atieno, p.6, L24-26).

Role modeling to students with visual impairments. The teacher provided consultancy services to both the parents and their children. She would share with them her experiences as a person with VI and how she completed independent living skills (ILS). She said, *“I tell them what happened to me and I know that this is ok because I had the same type of thing going on, and how I solved it or how it all worked out”* (Atieno, p.4, L5-7).

Atieno demonstrated that vision loss does not stand in her way to perform her responsibilities. I observed her taking responsibilities and performing administrative duties like any other teacher with sight did. I accompanied her to “go for duty” at the

cafeteria area. The teacher on duty would go to the cafeteria area for 20 minutes to make sure that all students were orderly and safe as they moved to their classrooms in time for their lessons. Every teacher was on duty for 20 minutes every day at a particular time of the day (Atieno, p.10, L 16-21).

Concerning modeling, she advised that it is important for people with visual impairments to reach out and make friends with people with sight because people with VI often need assistance to perform visual tasks in one way or the other. She said, *“I talk to them a lot. They are curious on how I do things, how I travel out there, how I do grocery shopping, and I tell them I take a friend. I tell them! I think I’m a role model”* (Atieno, p.4, L7-11).

Challenges with the job resulting from having a visual impairment. Atieno identified three challenges in her job related to administration, personnel, and limited access to information. She observed that the school did not have any supervisory leader who was conversant with VI issues. Both the school and district supervisors were not trained to teach students with VI. She said, *“But in this program we don’t have a supervisory leader who is trained to teach blind students and it just makes it hard”* (Atieno, p.6, L26-27). The teacher also decried the lack of harmony among the teachers in the program for the VI. They had not agreed on the most effective ways to assist the students with VI. She said, *“There are certain things that I believe, as a blind person, that are going to empower these blind children to be successful, and we haven’t agreed on that. Knowledge of braille, good cane travel, and as much technology as we can get into them”* (Atieno, p.7, L10-13). She mentioned that some TVIs who are sighted seemed

not to share beliefs about the things that could empower students who are blind to be successful.

Concerning access to information, the teacher explained that teachers with VI did not receive teachers' guides in accessible formats. She explained that teachers' guides came with instructions and demonstrations (e.g., how to calculate fractions) in print, but there was no guide on how to use "fraction bars" to calculate multiplication of fractions for students who are blind (Atieno, p.10, L42-44). The teacher acknowledged that the school had invested in technology to enhance access for people with VI, but it was not enough. The JAWS program that the teachers with VI used to access information on the computer did not have some services. For example, while she can select some text on her own, she needs to be guided on where to start and stop. She observed, *"The JAWS curser that the people with VI use does not interact with the PC curser. When a sighted person uses the computer (and that is very common), they cut the JAWS curser off and it has to be figured out again"* (Atieno, p.12, L22-24). As much as people with VI could access information through technology, it would take much more time to get things done than if a person who is sighted was doing it. I observed that it took Atieno about one hour to access some text on the computer and make copies using Duxbury software (Atieno, p.12, L30-33). Without the assistance of a TA, she probably would have not gotten the texts in time for the class.

Suggestions concerning accommodations for teachers with visual impairments. The teacher emphasized that teachers with VI should be knowledgeable about resources in blindness so that they are able to offer services to people with VI of all levels, *"Making sure that you are knowledgeable about all resources in blindness out*

there, from the kindergarten to first grade all the way to college. You just need to have all those resources” (Atieno, p.2, L26-27).

The teacher felt that teachers who have VI should have TAs or access to substitute teachers to give them time to work on IEP documents. She explained that in their school district, both TAs and teachers who are sighted get substitutes but not for teachers with VI when they need them. She observed, *“The other teachers get the subs so that they can take the DRA-their developmental reading assessments. They get a sub! So why can’t we get a sub so that we can work on the IEPs”* (Atieno, p.9, L34-35)?

For teacher preparation programs for TVIs, Atieno felt that they should emphasize the acquisition of compensatory skills in addition to academic skills. She said, *“Well, I really think they should have braille, really good skills, Nemeth code, and a strong belief in the importance of those skills, orientation and mobility, technology”* (Atieno, p.2, L8-9).

Regarding administration, she felt there was a need for supervisors to be knowledgeable about the needs of TVIs who are blind and the roles of TVIs. She said, *“First thing is to get a supervisor that is knowledgeable, competent and efficient regarding teaching blind students. Teachers need to be supervised properly and adequately. These braille writers should get equipment that is up to date”* (Atieno, p.8, L26-31). Such a person would ensure that equipment and technology are updated.

Finally, she suggested that all teachers of students who have VI should work together to adequately help their students. She said, *“We need to be on the same page when teaching these students. When somebody has this philosophy, somebody this,*

somebody that. I mean, how can we really adequately help students when everybody has their own beliefs? I don't know, I don't know" (Atieno, p.8, L5-9).

Results from Adoyo

Early life and onset of visual impairment. Adoyo was a female in her early sixties. She lost her sight as a result of Retinitis Pigmentosa (RP), also known as retinal dystrophy. According to Corn and Erin (2010) the condition refers to a group of disorders that make the eye's photoreceptor cells (rods and cones) degenerate prematurely (Adoyo, p.1, L5-12). Retinitis Pigmentosa is caused by the mutation in the genes that are responsible for the development of the retina, and it is irreversible. Adoyo said that although she had some vision as a child, she could not read print, so she learned braille from the onset. She reported, *"I was born with retinitis pigmentosa, very, very poor vision. And I had some vision but I was not a print reader. I learned braille from the onset and it was just like I could read print if it was a couple of inches tall"* (Adoyo, p.1, L5-7). Adoyo was born in the fifties when her family lived in a small community setting that did not have services for children with VI, so she had to be enrolled in a residential school for the blind, about 200 miles away from home in her first year of school. She said, *"So, my first year at school, I was a dorm student, and I lived there and my parents had to get me home every weekend. It was about 200 miles away"* (P.4, p.1, L12-14).

School experiences as a student with a visual impairment. She was a dorm student in the residential school for the first year, and she got to learn braille skills early in life. She acknowledged her father's commitment to her education at that time and thought he was her first contact with accommodations (Adoyo, p.1, L13-15). He would drive 800 miles every weekend to pick her up, and take her back to school after the

weekend. Adoyo reported of her father, *“He was very, very committed and wanted me home every weekend. It was about 200 miles each way, so my dad drove about 800 miles every weekend”* (Adoyo, p.1, L14-18). In the second year, the family relocated to the city where she went to school, and she became a day student through the ninth grade. From tenth grade to twelfth, she went to public schools.

Adoyo appreciated the accommodations that she received during her schooling because she had good exposure to the real world through resources for persons who are blind (Adoyo, p.2, L2-4). She attended a school for the blind and at the same time, stayed at home with her family. She accessed information through braille material and had a resource-room teacher. She observed, *“I had the best in both worlds....getting to live at home and getting to go to the school for the blind”* (Adoyo, p.1, L29-30). However, she noted that she experienced limitations in learning math because she could not follow when teachers wrote on the blackboard, but she was also quick to say that the experiences prepared her to face challenges, and not to expect to have everything accessible as a person with VI. She said, *“The teachers when they were writing on the board, I couldn’t follow that at all.” “Math was the only thing I thought was really, really hard, but I think it prepared me for, you know, getting used to being in large classes and not having everything accessible to me and learning to, you know, having to figure out ways to do things”* (Adoyo, p.2, L4-9).

The process and motivation to pursue a career in teaching students with visual impairments. Adoyo said that teaching was not her first career choice. She first earned a degree in history and got a job as a receptionist, but accommodations were very limited during that time because there were not many computers (Adoyo, p.2, L24-25).

She had very little to do as an employee except answer telephone calls. She received training in computer programming, secured a job that she did for a few years but then decided to quit the job to bring up her children (Adoyo, p.3, L11-14). When the children went to school, she volunteered to teach students with VI at a residential school for the blind (Adoyo, p.3, L20). It was then that she developed an interest in teaching students with VI. At this time, she enrolled in college to become a special education teacher and a TVI. Upon graduation, she was employed at the same school. She reported, *“I went back and got all my certifications, SPED and VI”* (Adoyo, p.3, L21).

Skills and strategies used in teaching students with visual impairments.

Adoyo said that she had to generally learn to be an effective teacher who is blind (Adoyo, p.4, L10-19). One of the strategies she considered important was prior planning. She said that before she started teaching the students with VI, she never really thought much about what it entailed. During the study, I observed that before Adoyo discussed a topic in class, she gave each student a section of the topic to go read and write about before the next class. Students would then read aloud what they had written during the lesson. The teacher would then give summary sentences from each student’s presentation and explain each point verbally (Adoyo, p.24, L23-26).

Some of the strategies I observed the teacher use during my observation were beneficial to students with visual impairments. During the lessons, she would draw students’ attention and emphasize points to remember and spell out new terms to ensure each of the students got it right. She would use repetition by having students say what they had heard. She would replay recorded information and involve the students in

discussing the main points. In addition, she used question and answer techniques, explained for clarity, and gave corrective feedback (Adoyo, p.28-29; p25, L1-3).

The other skills that she said she learned and used to teach students with VI included JAWS, and braille access, and Adoyo generally used technology to get organized, access information, and to work more efficiently. She said, *“I had never used speech access, which is what we had. I had never used JAWS.” “I hadn’t used braille access before so I had to learn some of that”* (Adoyo, p.4, L12-13). She also used technology to access and get familiar with different resources. She reported, *“Now that I don’t braille any more, I have the books in digital recordings. I keep a lot of things on the computer, like the study guides and the things I refer to when the kids are working. So I just access them on the computer and the kids are used to that”* (Adoyo, p.7, L29-31). I observed her use the “Braille and Audio Reading Download (BARD)” program. She explained that BARD is an audio book that is non-synthetic. It is part of the National Library Services for the Blind and Physically Handicapped that has downloadable books and magazines. People have to register as users before they can download the programs. Explaining about Learning Ally, she said, *“They have volunteers who record the books and then they can give it to you as a download or on a CD or however, and then you can put it on a Victor Stream”* (Adoyo, p.8, L9-10).

Adoyo had learned to make use of the resources available in the school to complete work tasks. She used the school brailist to get tactile teaching materials made as she reports here, *“She can sometimes do some transcribing for us. Like I just used her to make a map for me, you know some kind of tactile map for me”* (Adoyo, p6, L.33- p7, L1-2). She said she would not hesitate to spend her own money to access information and

enhance her communication with the students. Regarding the Victor Stream, Adoyo reported, *“I got this cute little speaker that makes it loud enough. If you just play the victor stream without the speaker, it’s only loud enough for one person to listen to. You know, it’s not intended to be somebody’s stereo”* (Adoyo, p.8, L13-18). She was innovative, tried out new ideas and improvised with the use of technology to increase access for her students. Regarding how she uses the Victor Stream, she said, *“Aha, but when you connect it to the speaker, which I got from Target, it was loud enough for the whole class to hear it. You know, you can make it louder or softer. So it’s really nice”* (Adoyo, p.8, L20-23).

The teacher also used differentiated instruction. I realized that she taught different subjects in different grades, but Adoyo knew all the students that came to her classes by names, their abilities, and learning styles. Thus she described them, *“J is very high functioning. And C is also an academic, maybe a little bit more concrete. She takes modified math courses. She loves to write, is alert and asks questions. H has very, very severe learning disability. He’s also an intelligent man but can’t write at all. So he has to do everything auditorily, and so that’s why he was speaking to his iPad instead of writing on it. He’s speaking on it so that he can go back and listen to it, or I email to him some textbooks so that he can listen to them because he can’t read print or braille”* (Adoyo, p.8, L23-34). She made sure that each of the students used the most accessible media to participate in lessons. I observed a lesson in which there were five students in a class. One of the students used a laptop, one used a CCTV, two used iPads, and one had an Apex braille note-taker (Adoyo, p.24, L9-13).

The teacher believed in continuous learning. She told me that she used technology to do most of her communication. Some of her students taught her about evolving technology. She said, *“I think it’s really helped me that I do most of my work by email, communicating with the other teachers, and I rarely go down there to check my mailbox”* (Adoyo, p.13, L13-14). *“You just get a student to teach you (laughing). That’s what I do when I want to learn something”* (Adoyo, p.17, L26-27). I observed her using students’ individual abilities to enhance communication. For example, she used a student with low vision to help fix electric appliances in the room or distribute test papers to students because she could read both braille and print (Adoyo, p.26, L26-27).

The teacher practiced time accommodation for her students. She gave them short tasks that the students could finish within the time that they had. She also listened to and accommodated every student’s concern. I observed her respond to a student who raised a concern that he did not know what to write down after a discussion (the student had actually not been attentive). The teacher responded by asking the student simple questions that would break up the seemingly complex concepts (Adoyo, p.27, L29-32).

The teacher initiated her own ways to manage visual tasks (e.g., exam supervision). She observed, *“I would have like a friend of mine walk down the hall (laughing). I’ll just tell them to do a random walk through, you know, at an unspecified time”* (Adoyo, p.20, L16-18). She also used sighted assistance, such as volunteers to do paperwork. I observed a volunteer assist the teacher in grading braille papers (Adoyo, p.26, L6-8) because she is progressively losing sensitivity in her fingers; therefore, she cannot finger-read anymore.

The positive aspects about the job. Adoyo showed a great deal of emotional attachment when she talked about her workplace. She was very passionate about the school community that she worked in, “...*these really wonderful people and it is fun to work with them....working with the kids and being part of their lives is really, that’s wonderful*” (Adoyo, p.10, L28-30). She appreciated the improved access to information and the services that the school afforded her. She said that there was one employee that was officially assigned to assist in transition with software packages whenever there was a need. She reported, “*When they said, ‘Alice (pseudonym) is going to enter things for you. So if you have anything, just email her what you want until you get it accessible.’ So they were very nice about it*” (Adoyo, p.14, L4-5). “*It is nice that at least this time the principal said, ‘Alice, it is her duty to help you.’ So at least I know that is the person I go to and everybody knows, and she doesn’t have trouble helping me when she is supposed to be doing her job*” (Adoyo, p.14, L16-19). In addition, the school provided training in technology use and tried to ensure that the teachers with VI accessed information like their peers who are sighted. The school had put in place a software accessibility person who communicated with companies when their products were not compatible with JAWS. Adoyo observed, “*Some parts are very accessible now, and they are supposed to give me more training in the summer, and they have been so nice about it*” (Adoyo, p.14, L6-7).

The school also tried to provide technology that met individual needs. She had a Voice-Note instead of a Braille-Note because she did not read braille anymore. She observed, “...*and they are making a concerted effort to provide braille for staff that read braille and they send me things electronically because that is what I want*” (Adoyo, p.

14, L27-30). The teacher appreciated the improved service delivery by the school. The school tried to provide access according to individual needs. She said, *“They are really trying to do that. To provide large print, whatever people need more. It is just taking a while (in a whisper, as if being careful), but it is coming”* (Adoyo, p.14, L32-34).

Role modeling to students with visual impairments. The teacher felt that she could be an inspiration to her students. She said, *“I feel like in a small way that..., I maybe inspire somebody or give a little bit more fuel to their dreams..... By then, I feel like I did my job”* (Adoyo, p.10, L30-32). She also felt that it was important for students with VI to be exposed to adults with VI who were successful and said, *“They need to see blind adults and most of them don’t know any blind adults, and so they don’t know what they could do or can be when they grow up”* (Adoyo, p.10, L33-34). The teacher also offered consultancy services to the students. She observed, *“And I always tell them they can ask me anything they want to know....., what it was like in college....., looking for a job....., I’m willing to tell them anything that I can”* (Adoyo, p.11, L1-4). She believed and let the students know that people with VI could do most things. They only needed to learn different ways to perform the tasks. *“It really is possible to get independent as an adult, and a contributing member of the society; to have a family and have a career.” “If somebody tells you that you can’t do something, ask them, ‘Why do you think I can’t do it?’ and what you can do to get around that”* (Adoyo, p.11, L5-6). For the parents of the students, she was a source of encouragement and provided guidance on how to raise children with VI.

Challenges with the job resulting from having a visual impairment. The teacher observed that it was not easy to secure employment as a person who is blind in

the first place. Opportunities were narrower for people with VI, and this mainly arose from attitudes because some people believed that it was not appropriate for a person who is blind to teach students who have VI. She said, “...*I never really considered teaching because I had been told that ‘they wouldn’t let you in. They wouldn’t let you in the teaching program if you are blind’, because they thought it was not appropriate*” (Adoyo, p.12, L8-11). Securing employment was also not easy for people with VI because in most cases, they would not match the job requirements as a result of communication barriers that could exist between them and their clients who might have other disabilities. Adoyo observed, “*A lot of teaching positions that do come up are for non-verbal students.... A lot of the ways they communicate is through visual, and so if I don’t have that and they don’t have speech, or both, it just makes it frustrating for everybody (laughing)*” (Adoyo, p.4, L31-32 – p.5, L1-5). In one of the lessons I observed, Adoyo had three students in class, and two of them had hearing impairments in addition to VI. These two students came in with TAs, and one of them communicated through tactile sign language. This complication made it impossible for the teacher to directly communicate with the student (Adoyo, p.26, L14-16).

The other challenges that the teacher mentioned were related to services provided by the support staff. These challenges ranged from not receiving assistance from TAs, support staff not providing available accommodations, and not receiving support to access resources in the same way as their sighted peers. The school employed TAs to assist students, and the services could not be extended to the teachers who have VI. She observed, “*They are employed by the school to help Molly (pseudonym)*” (Adoyo, p.5, L31). “*I don’t know if Molly will be on our team next year. They’ll probably follow her*

wherever she goes to” (Adoyo, p.6, L3-4). Even in the cases where sighted teachers were supported through the provision of printed resources, the school did not allow the TAs to adapt the same resources in an accessible format for the teachers with VI. Another challenge was that the support staff did not always use the accommodation services that were available in the school for trivial reasons such as forgetfulness or lack of time. Showing me a hard copy mail, she said, *“This mail here, they didn’t send me any email.....they just forgot. Although I reminded her....., I don’t want to embarrass her because she would be really embarrassed if I pointed it out. I don’t want to put anybody in trouble”* (Adoyo, p.13, L15-19). Sometimes the services to the teachers with VI were delayed. *“I don’t read braille anymore.... But when I did, it’s like the meeting agendas; there would not be one in braille....and that was just like, ‘oh gosh! Adoyo, I’ve seen you. I just didn’t have time to do it. I didn’t remember, I forgot’. And I’m like, oh sure! Whatever you want, okay”* (Adoyo, p.14, L21-26).

Adoyo also mentioned challenges that were related to access to information. She said that teacher materials were not available in accessible formats for teachers who were VI. While sighted teachers had teacher editions of textbooks, the same were not available in accessible formats for the teachers with VI. She observed, *“....It’s hard to find teacher materials in accessible formats. Even I use the regular textbooks that kids use, but I don’t have access to the teacher editions”* (Adoyo, p.7, L6-8).

Teachers with VI had to spend time and money looking for information that was readily available to the sighted teachers, as Adoyo observed, *“You know they (resources for sighted) have ideas for activities and answers....., and so I have to look it up (laughing)”* (Adoyo, p.7, L8-10). Adoyo had to spend time scanning books that were

available to the sighted teachers in print. She had to spend money to purchase technology to use for access to information. Showing me a textbook, she said, *“I got this really good scanner and this is world geography lecture notes and every section, every day. It has an outline of the section that you could go by..... It even has discussion questions, and I wish I could have one of those for every course”* (Adoyo, p.7, L16-19).

Another challenge related to technology was that the school availed technology to teachers and students with VI to enhance access, but the technology remained the property of the school. She observed, *“They won’t have technology unless they need it for school or unless they have a job where they specifically need a computer”* (Adoyo, p.10, L4-5). This study took place during the last weeks of the school year, and in one of the lessons, the teacher asked the students who had not registered for the summer school to turn in their iPads, Apex, chargers, and laptops as they were not allowed to take them home (Adoyo, p.24, L15-16). This meant the students would not be able to access information throughout the summer.

The other challenge that the teacher identified was the enormous amount of paperwork that all the teachers had to do. She said it was worse for teachers with VI because the computer systems (e.g., for the IEP) that they did it on were changed every time, and the teachers had to constantly learn to use the new systems. She observed, *“The paperwork that we have to do is enormous for everybody.....IEP has to be written and the reporting and they keep on changing the system that we do it on”* (Adoyo, p.13, L22-24).

As much as the administration had good intentions for the teachers to get information in accessible formats, that information was not always ready for the teachers

with VI at the same time it was for their peers with sight. This situation was limiting participation in school programs at the same level with the sighted peers.

Adoyo observed that many teachers, including herself still didn't know technology well enough to help the students with VI effectively. She said, *"We get some technology training each year, but I don't think that a lot of the teachers know enough about the technology that the students use to really help them use it effectively"* (Adoyo, p.17, L18-20).

As previously mentioned, the school made changes in technology systems quite often with the intention of improving access, but the changes were made without consulting the teachers who are blind. She observed, *"They keep changing the software package, and you have to learn that one and you have to figure out if it's going to work with JAWS, and probably it doesn't"* (Adoyo, p.13, L31-32). These changes, at times, ended up making the teachers more disabled because the teachers had to resort to relying on other people to access the information as Adoyo observed, *"It's hard to ask other people to help you do your job, and they don't even have time to do theirs"* (Adoyo, p.14, L14-16).

Another challenge was related to time. The teacher said there was hardly enough time for the teachers to perform their duties; therefore, it became very difficult to schedule activities for the students with VI because they took longer to learn concepts. She said, *"I don't have planning time.....it's all taken with emails and you know, paperwork, and so all the planning has to be done on my own time"* (Adoyo, p.18, L28-29). I observed that it would take longer to effectively communicate with individual students (Adoyo p.26, L17-19).

Still another challenge that Adoyo identified was related to visual tasks (e.g., observation during examinations). She said, *“It’s something that’s really hard for me if students take advantage of my blindness.....doing something they wouldn’t get away with if the teacher was sighted....it makes me feel really bad, and it makes me feel angry and hurt and very, very emotional....it makes me feel betrayed because I feel like somebody is going to think that I’m not doing my job or I can’t do the job”* (Adoyo, p.20, L24-32).

During this study, I observed that in a reading lesson, one student was supposed to read while the others listened. However, one of the students was doing his own things on the computer and writing in his notebook. He did this so discretely that the teacher did not notice him doing this activity (Adoyo, p.27, L25-28). This proved to me that some class management skills are very visual and teachers who are blind may need sighted assistance to accomplish them.

The teacher also identified challenges that related to administration. She said that administrators were not always aware of what the teachers with VI needed; hence, they had to be made aware of what accommodations to provide. *Regarding the Voice-Note, she said, “I had one but it died...I was thinking that I would have to buy one because I had bought that one. But then I asked boss and he said, ‘oh we can do that, they can provide a Voice-Note.’ And so I was really..... I know that sometimes you just have to ask”* (Adoyo, p.23, L14-18). At the same time, the teacher did not want to ask for much accommodation because of job security. She feared that she could lose her job if the administrators felt that it was too expensive to keep her employed. She said, *“You know, I don’t want them to think ... (inaudible). And a part of that is job security, you know, worrying about job security”* (Adoyo, p.23, L24-27).

Suggestions concerning accommodations for teachers with visual impairments. Adoyo had suggestions for administrators and teachers. She felt that there was a need for TAs to help monitor examinations with teachers who have VI. She said, *“Ah, I’d love that. I used to have an aide who would come for a couple of classes.... but these past few years, I haven’t had one at all. But I hate to ask for something like that, because at the same time, I don’t want them to think that I can’t do my job”* (Adoyo, p.22, L3-6).

The teacher also felt that institutions needed to consider physical accessibility of facilities for people with VI before constructing the buildings and not make it an afterthought. She observed, *“There are lots of things on the new buildings on campus that could have been a little friendlier to blind people and low vision people. I say, just to try, just not make accessibility an afterthought, but try to make it a real priority and concern.....think of it before they buy something”* (Adoyo, p.16, L25-28). The same should apply to software. Before buying new software, Adoyo thought that its compatibility with programs that were in use by the employees with VI should be considered.

The teacher felt that there was a need to provide more training opportunities on technology so that the teachers with VI could have more empowerment or opportunity for participation opportunity in the professional and academic entities. She said, *“I know there are things I could do if I knew more, you know, things like chat, like Google. That way you can have a page where people can comment on it, you can have a discussion, like an online discussion forum of a topic or something like that”* (Adoyo, p.18, L19-22).

For the teachers with VI, Adoyo suggested that they should get over their fears and learn new technology to be more effective. She observed, *“I haven’t taught people how to use the Apex, but I think if they get over their fears of it and just go in there and wrap their minds around it”* (Adoyo, p.18, L1-2).

Summary of the four cases. All the four participants were blind and used other media to access information than print. Awino, Anyango, and Atieno used braille while Adoyo used auditory medium. They had different visual conditions, abilities to use and preferences for AT devices. The participants also received varied levels of assistance from personnel who are sighted, depending on the arrangements by their employers. All the participants taught students who have VI but in different settings (e.g., regular classrooms, homes, resource room, and residential school). Despite the varied factors in each case, all the participants agreed on the importance of accommodations and appreciated the efforts by their individual schools to enhance access to information through technology. They all felt it was important for them to participate in making decisions concerning their accommodations, and identified lack of training in using AT, and time to teach compensatory skills as challenges that administrators need to address.

The Cross-Case Presentation of Results

All the four participants had unique individual experiences, perceptions and thoughts. However, there were also several similarities in the information that they provided. In this section, I identify the similar factors that emerged in each of the themes across the four participants.

Importance of early intervention and family support services for persons with visual impairments. Three of the four participants had congenital visual

impairments, and all went through some form of residential early intervention programs for the VI. Even Atieno, who lost her vision at the age of 15 years, while in tenth grade, had to go and learn braille in a neighboring elementary school that had a program for students with VI. All the participants recommended intense compensatory skills training for students with VI, as Anyango reported, *“I went to a day school and I went home every night but there was 100% braille program where I also learned the* (Anyango, p.3, L31-32).

All four participants also acknowledged the importance of family support. Adoyo recognized her father as taking the key role to ensure that she had access to a residential school for the blind that was 200 miles away from her home. The father still took her home every weekend to be with her family (Adoyo, p.1 L14-15). Awino and Anyango recognized their mothers as being instrumental in helping them to learn independent living skills. Awino described her mother as her first encounter with accommodations. She said, *“She would close her eyes and button her clothes to figure out how to teach me”* (Awino, p.1, L26-27). Similarly Anyango reported how her parents never restricted her from venturing out and being active like any other child. She even learned to ride a bike and had accidents like any other child of her age would have.

The special skills and strategies the teachers who are blind need. Planning and organization are important skills for all teachers who want to be efficient educators. Although all teachers plan lessons as part of their professional requirements, the teachers who are blind have to go an extra mile in planning their work. All four participants identified the skill as a priority in their work. Two participants reported that they have to prepare work for their students in advance and in accessible formats for each student

(e.g., braille, large print, and audio). Unlike the sighted teachers who can have one plan for a whole class, the teachers who are blind have to plan for individual students. Atieno reported that she has to start her work way in advance to accomplish her tasks in time. She said, *“What I do is; I start way in advance. Like I know I have IEP coming at a certain time. Well I start like a month in advance. I do it way in advance because I know it takes time. If I don’t do it like that, it hits me and then I panic, and then I’m not good at all and I don’t get anything done”* (Atieno, p.9, L21-26). Similarly, Adoyo demonstrated that she practices advance planning as part of her routine. I observed her assigning topics to students to go read, and write on at home for discussion in the next class. She had prepared the texts for the students each in her or his accessible format. This was evidence that she had started planning for a future lesson even before she came to school that day. The participant also reported that she organizes her work using computer folders. She said, *“I have the books in digital recordings. I keep a lot of my things on the computer, like the study guides and the things I refer to while the kids are working. So I just access them on the computer and the kids are used to that”* (Adoyo, p.7, L29-31).

The ability to use technology emerged as a very important skill to all the participants. They all recognized the importance of technology in their professional lives. Therefore, each one of them had strived to learn to use AT and embraced it as a tool. Awino said that she teaches both TVIs who are sighted and students with VI to use AT in accessing information and facilitating learning. I observed her teaching a student how to use an Apex to create documents (Awino, p26, L2). Anyango and Atieno reported that they use AT to edit electronic documents, format, and put in accessible formats for both their students and the administrators (Anyango, p.16, L29-37), while Adoyo said that she

uses AT to get organized, access information easily, and work efficiently. Regarding her own initiative to modify the function of the Victor Stream, Adoyo said, *“When you connect it to the speaker, which I got from Target, it’s loud enough for the whole class to hear it”* (Adoyo, p.8, L20-23). All the participants indicated that they use the AT to access, and be familiar with different resources such as the BARD services from the National Libraries. Regarding learning to use the AT, all the participants indicated that they had made individual efforts to acquire the skills and would appreciate if the administrations sponsored them for AT training.

It is important for teachers of students with VI to differentiate instructions to meet individual students’ needs because students are often different in their abilities and learning styles. Anyango, Atieno and Adoyo demonstrated in their lessons that they had planned the lessons with the individual students’ needs in mind. Anyango brought to class reading materials that were in different levels of difficulty, and accessible formats for each student (Anyango, p.20, L43-45). The teacher also gave the students one-on-one attention by spelling out the words that they were learning, giving the braille notations of the different letters, and reminding the students of when, and how to space using the Perkins brailers (Anyango, p.26 L22-25). Atieno practiced differentiation of instruction through giving each student tasks at his/her own pace and level. In a math class, some of the students could do multiplications problems mentally while others needed one-on-one assistance. The teacher ensured that each student had learning resources in accessible formats (e.g., braille, large print, contrasting colors). Adoyo also demonstrated differentiation of instruction according to the students’ abilities and learning styles. In a

social studies class, each student took turns to read, using the medium that was most accessible to him or her. The students also took notes in these accessible formats.

The participants emphasized the importance of exposing the students to practical experiences with the concepts that they were learning. They planned for lessons to be presented in tactile graphic individual or group projects. In one lesson, the students in Anyango's class had worked on their projects at home with the help of their parents. During the class presentations, they were to describe what was in their dioramas and the process they had gone through to make it. They were also to describe the arrangement on the charts (e.g., using the terms; right, left, in front, behind), the colors and the materials used. If a sighted teacher was to teach the same concepts in the general education classroom, the skills would probably be taught using pictures which the students would point at for the rest of their classmates to see instead of having to describe the positions, colors and materials used.

Teachers who are blind need to acquire the skills to work with assistants who are sighted. The teachers need to learn how to give clear instructions to the assistants and the questioning skills to get the right feedback about their work environments. All the participants reported having had to use support from people who are sighted at different points in their work. They need the support to perform tasks that require vision. Awino reported that whenever she used an assistant for such tasks, she had to instruct him or her on the steps to follow and what to do (Awino, p.7, L7-13). She said she had to learn to question the people working with her so that she could get the feedback on what was going on. She would say, *"Okay, let us show him this card, what is the visual behavior"* (Awino, p.9, L24-25)?

Anyango reported using sighted assistance mainly for paperwork that is not available on the computer. I also observed her using the TAs to enhance her class management skills. She would ask the TAs to sit amongst the students as she taught, to ensure that the students focused their attention on the lessons. The TAs also helped to verify what the students who had low vision and used print wrote. She would also ask the TAs to move around checking what the students wrote.

I observed Atieno use a substitute TA to access information on the computer although she was computer savvy. On inquiry, she intimated that she preferred to use assistance from a person who is sighted whenever it was available to read what is on the computer screen because it is faster than having to figure out JAWS (Atieno, p.12, L20-25). I also observed Adoyo use students with low vision to perform visual tasks. She asked one student to check for her if the electric charger for the recorder in the room was working. Incidentally, it had not been working so the student figured it out and it started to work. She also used volunteers who are sighted to help her grade print work from students with low vision. She reported that she used her friends to step in and help her observe students during tests. She said, *“I would have like, a friend of mine walk down the hall (laughing). I’ll just tell them to do a random walk through, you know, at an unspecified time”* (Adoyo, p.20, L16-18).

All the participants in this study seemed to have taken flexibility in time management in to consideration. I saw each of them demonstrate this when working with the students. In an IEP meeting I observed Awino explain to the members that learning through hearing needs repetition over and over and should be backed with a lot of reading experiences. This calls for flexibility in time when working with students with VI. She

suggested that students with VI can be pulled out of music and art classes to allow them time to work on their skills in other academic areas. However, she cautioned that students should not be pulled out of physical education classes because movement is very important for students with VI. I observed Anyango spending as much time as she could with individual students in a lesson in which they were learning new words. She assigned TAs to individual students to make sure the students got the spellings correct, and she did not move to the next step of the lesson until all the TAs gave her feedback that all the students got the concepts right. The teacher repeated her points several times and constantly reminded the students to observe punctuation marks and read what they had written over and over before submitting their work for grading.

Atieno explained that the students with VI cannot learn at a glance (e.g., how to write fractions in braille). She had to teach the concepts using one-on-one basis as opposed to using the blackboard to teach all the students as a group. She took at least five minutes with each of the students (the same amount of time a teacher who is sighted would have taken to teach the same concept to all students in a general class). She commented that the administration did not seem to understand that teachers of students with VI needed time to get students to understand the concepts. The teacher also showed her flexibility by giving the students time to express their curiosity when they were learning about abstract concepts (e.g., wild animals). Adoyo used repetition in different ways. She had the students repeat what they heard her or other classmates say. She replayed recorded information over and over, discussed the main points of the lessons, explained for clarification, asked questions and gave corrective feedback to responses.

She also listened to, and addressed every student's concern (e.g., she took time to ask simple questions to help break up a seemingly complex concept).

All the participants reported that they believe in and use continuous learning to acquire the skills that they need in their work. Awino reported using professional organizations as her sources of information. She said, *"I rely a lot on the services of the residential school for the blind. They have good outreach department"* (Awino, p.10, L17-18). Anyango said that she uses her own time to learn technology for accessibility. She reported that when she learns something new, she shares the information with her colleagues who are blind. She explained that at times she uses trial and error approach to learning technology. She said, *"Just kind of trial and error, just doing it"* (Anyango, p.7, L9)! Still Adoyo explained that she has no boundaries when it comes to learning new technology. She said that she learns some of the evolving technology from her students, *"You just get a student to teach you (laughing). That's what I do when I want to learn something. And so actually they do teach me"* (Adoyo, p.19, L9-10).

The positive aspects of having teachers with blindness teach students who have visual impairments. All four participants emphasized the importance for people with VI to work in programs for students with VI. They identified these aspects as beneficial to teachers and students who have VI. The benefits identified included; enhanced access to information; making a difference in the students' lives and seeing them succeed; inspiring the students; offering consultancy services to the students and their parents; and being examples of success to the students and their parents.

All the participants expressed their satisfaction with the levels of access to technology offered at their places of work. Anyango said, *"The IEP is electronic, and*

very accessible. We get our computer equipment; we get the programs that will help us use it” (Anyango, p.6, L21). I also observed each of them use different types of technology for access at different points in their work.

All the participants agreed that it was important for them to make a difference in the lives of the students with VI. Awino said that she enjoyed the satisfaction she got from her students’ success. She said, *“If they accomplish great things, I’ll be very grateful that I had a little bit of something to do with it”* (Awino, p.11, L23-24).

Anyango said that she regarded her job as a way in which she could give back to her mentors who played important roles in her life as a child who was blind. She said, *“I remember how important the teachers who were in my life as a child and I feel that my role is to model for them”* (Anyango, p.10, L1-2).

The participants reported that teachers who are blind are better placed to successfully instruct students with VI because the teachers have more experience on what the students with VI learn. I observed all the participants use real objects and dioramas to make the learning very practical for their students. All the participants used constant interaction with their students to ensure the students focused their attention on what they were learning.

Teachers with VI understand that students with VI need more time to learn. Anyango mentioned that students with VI need more time because they have so much to learn in addition to the regular curriculum. She observed, *“In my experience, I have seen that there is a lot where, just given the right amount of time, just allowed to do it, they can do it. I can safely say that a blind student, even the most capable blind student can really benefit by an extra year. Because there is so much that they need to learn*

nowadays; technology they need to learn. They need to be technology proficient. That's our world" (Anyango, p.15, L23-29). Similarly, Adoyo observed that students who have VI take longer to learn concepts, experience things, and practice what they learn; hence, they could benefit from extra time. She said, *"They do take longer to learn, to really learn the concept and it's going to take longer if you are really going to give them the experience of letting them actually really do stuff"* (Adoyo, p.15, L36-38). In the same classroom I observed that it took longer to effectively communicate with individual students in their different communication modes. At one point the teacher directed a question to a student who had deafblindness, and the TA/interpreter had to ask the teacher to give her time to interpret the question to the student before the student could respond in tactile sign language, and then the TA would communicate back to the teacher.

In a braille reading class, I observed that Anyango had to give one-on-one attention when teaching braille symbols' recognition. One of the students needed to read each braille symbol/letter in a word separately before connecting them to form words. The teacher made sure that the student recognized the positions of the dots in different braille symbols. Once that was done, the student read the sentences really well, and fast.

All the participants reported that they serve as consultants to the students or the students' parents and the teachers who are sighted, concerning how students who are blind learn. They said that they often avail themselves to the students and let them know they are free to ask any issues they are concerned about. Adoyo said, *"And I always tell them they can ask me anything they want to know. If it is too personal I'll tell them. If they want to know what it is like to do something, or what it was like in college or what it*

was like looking for a job you know, I'm willing to tell them anything that I can. To tell them....it really is possible to get independent as an adult and a contributing member of the society and you know, to have a family and have a career" (Adoyo, p.11, L1-6). The participants also mentioned that they assure the students and their parents that people who are blind are capable of achieving success in life like any other person. They let the students know that people who are blind can work and lead normal lives. In addition, they teach the parents about blindness, and how to raise children who are blind, as Anyango reported, *"And they can ask me questions. They do it all the times. How do you go shopping? How do you"* (Anyango, p.10, L16-17)?

Accommodation challenges for teachers who are blind. All four participants did not initially plan to become teachers of students with VI. Awino and Adoyo reported being discouraged by people's attitudes (e.g., people who are blind cannot teach students who are blind; they will not let you). The decisions of the participants to become teachers of students with VI were influenced in different ways based on their having VI.

Awino was assertive and forced her way into the profession because she believed she had something special to share with students with VI (Awino, p.6, L1-7). Anyango trained as a general education teacher but decided to switch because of her interest, and the fact that there was nobody in her school district knew about the compensatory skills for students with VI. She had to train to be a TVI through in-service (Anyango, p.1, L15-17).

Atieno had always wanted to be a teacher, but when she lost her sight, she made up her mind to train to become a teacher of students with VI (Atieno, p.2, L1-6). Adoyo did other jobs for a number of years before deciding to volunteer at a school for the blind.

She developed an interest and decided to go for certification in teaching to be a TVI (Adoyo, p.3, L20-25). All these reasons for being TVIs point to the fact that all the participants felt a need to serve students who have the same educational challenges they had themselves gone through as students. They felt that they were in a better position to assist the students because they understood the students' education needs.

Concerning career options for people with VI, Awino and Adoyo reported being discouraged from joining training programs to become TVIs because they were blind. Awino reported her professor who was in charge of the VI program at the time saying, *"Blind people should not teach blind children"* (Awino, p.5, L35). This philosophy may result in delayed provision of accommodations to the people with disabilities. Adoyo reported that she never really considered teaching as a career option because she had been discouraged by many people. She reported, *"I had been told that 'they wouldn't let you in. They wouldn't let you in the teaching program if you are blind' because they thought it was inappropriate"* (Adoyo, p.12, L9-11). Awino insisted and advocated to be admitted into the profession. She was accepted with conditions, *"I said, 'Dr. T. these kids are not going to live with me. They'll still have their parents. I do feel there's something to impart to these children.'"* She said *"Ok, I'm going to allow you in the program, but I want you to know that you are going to be accountable for everything"* (Awino, p.6, L1-7). However, Adoyo had to offer herself as a volunteer for a period of time to prove that she could successfully work with the students before she had the chance to train for certifications. She said, *"I went back and got all my certifications, SPED and VI"* (Adoyo, p.3, L21).

This study revealed that schools were well equipped and prepared to accommodate students with VI but not as much for teachers who are blind. This observation was evident through the fact that three of the four participants had limited access to support by assistants who are sighted while all the students had access to such accommodations at all times that they were in school.

Negative attitudes from support staff also emerged as a challenge. Anyango observed that some sources of information for teachers come with pictures that people who are blind do not need. Such documents need to be scanned and put in accessible formats for people with VI, but the person who scans needs to block the pictures to scan faster. This task can only be done by a person who is sighted.

The teachers also mentioned that some electronic materials come with repeated information that is not necessary to the consumer. Teachers who are sighted easily see these things and skip the unnecessary information. Some documents also come with some parts of the texts highlighted for emphasis, but the JAWS that people who are blind use to read does not recognize the highlights (Anyango, p.18, L35-37). As much as the teachers can access the documents and read them on the computer, they still need support from sighted people to help with the editing and scanning to produce accessible formats with reduced bulk. Anyango said that some of the support staff may think that the teachers are making unfair demands concerning accommodation. Thus she said, *“They don’t understand why I want it that way. Why they can’t just provide some PDF”* (Anyango, p.18, L15-16).

All the participants reported that although computer technology provides more access to information, people who are blind have to be computer savvy to use the

programs. The teachers need formal training on how to efficiently use technology which also happens to be evolving continuously. While the participants appreciated that the school districts do sponsor them for some training, they all agreed the training provided is not enough. Anyango had this to say about the training she received regarding the use of electronic IEP, *“We all went to the computer lab in the district in groups, and they trained us but it was kind of..... I just sat there and listened. Just listened to how it was set up. I couldn’t just do it fast enough because I didn’t know it”* (Anyango, p.7, L7-9).

The participants also reported limited access to documents that are not electronic (e.g., paper report cards). In a test grading meeting Anyango participated in, the instructions on the grading guide were not in braille and she had to ask colleagues to read them for her.

Another challenge with access that the participants reported concerned having to go an extra mile to access some materials that are readily available to teachers who are sighted (e.g. teacher guides). Anyango explained that such teachers’ lesson plan books usually have instructions, and demonstrations of lesson presentations, but the books do not come in accessible formats for teachers who are blind. Sometimes she has to purchase online resources to help her access such materials. Awino, Anyango and Adoyo reported having spent their own money to purchase resources to access information that was freely available to teachers who are sighted. Anyango said, *“I have purchased for myself a subscription called Ed Helper, and Ed Helper has a lot of lesson plans in there”* (Anyango, p.7, L9-10). The teachers also mentioned a challenge regarding access to some electronic sources of information such as digital books that have restrictions, and once

they are downloaded on one computer, they cannot be moved to another. Therefore, the teachers have to work on specific computers.

The JAWS program that teachers who are blind use to access information on the computer does not have some services (e.g., a person who is blind cannot use the program to select text independently. The person usually needs guidance on where to start and stop selecting). The JAWS cursor that the people with VI use does not interact with the PC cursor, therefore, when a person who is sighted uses the computer, he/she cuts off the JAWS cursor, and it has to be reset. The speed at which some of the equipment for people with VI work is a challenge. The equipment (e.g., Duxbury) takes much longer to print braille copies than ordinary printers.

The participants also reported that they have limited access to information because they have not learned how to use some technology for people who are blind. They expressed their need for training in using computer programs for people who are blind as part of the accommodations that schools can provide. They reported that the school districts do sponsor them for some training but although the trainers who are often sighted know how to use the programs for people with VI, they do not understand how people who are blind can navigate the keyboard to perform tasks. They may expect a person who is blind to use a mouse and click on icons. The participants thought that a trainer who is blind would be more appropriate.

Limited time to accomplish all responsibilities was reported as a challenge. The participants observed that they spend a lot of time accessing the information that is readily available to teachers who are sighted. For example, some electronic documents are not fully accessible to teachers with blindness, so the teachers have to retype the

documents in a Word Program to work on them, and then e-mail to their administrators. The teachers also reported having limited time regarding what their students need to learn. They said students who have VI have to learn the expanded core curriculum areas in addition to the regular school curriculum. They reported the time the teachers have is never enough. Additionally, the teachers observed that students with VI take longer to learn concepts because they usually need one-on-one demonstrations. Anyango commented, *“I know it takes me longer, and like I said you know that is just a fact that if you are a visually impaired person, it’s going to take you longer”* (Anyango, p.15, L30-32).

The paperwork that the teachers who have VI have, takes lots of time to complete. In addition, the computer systems for working on the documents keep on changing and they are not always accessible. These teachers have to learn new systems again and again as they are introduced. Concerning this issue, Adoyo observed, *“The biggest challenge to me in this job is paperwork. We have to do the IEP for each student. The IEPs have to be written and the reporting and they keep on changing the systems we do it on”* (Adoyo, p.13, L21-24).

The participants reported that having an administrator who does not understand the needs of teachers who are blind can be a big challenge in the workplace. Anyango observed that such administrators may assume that it is the work of TAs to assist teachers who are blind. She said, *“That’s a false impression, especially when we get new principals, and that has not been made clear. They are not here to help us do our job easier because we are blind”* (Anyango, p.8, L17-20). Lack of supervisory leadership that is conversant with VI at both the school and district levels is also a challenge as

Atieno observed, *“But in this program we don’t have a supervisor that is trained to teach blind students and it just makes it hard”* (Atieno, p.6, L26-27).

All the participants identified performing visual tasks as part of their professional responsibilities, a challenge. Often the teachers are expected to observe during tests, grade for students who have low vision, and complete paperwork that is not available electronically. Adoyo reported that sometimes she would ask her friends to do the observation for her. She also did not allow the students to use technology when they were taking tests. She admitted that having VI makes it difficult for her to be in full control, and some students may be tempted to cheat, *“You know how with the Braille-Note, the Apex they can chat with one another? They were telling each other the test questions, not in my class but in another class where they were taking the test”* (Adoyo, p.9, L27-30).

As much as the administrators want to serve the teachers with VI in the same way with their colleagues who are sighted, services to the teachers with VI sometimes are delayed when the support staff who are responsible to make the accommodations for them do not deliver the services in time. The teachers with VI find this frustrating because they may not participate in activities with the teachers who are sighted at the same level. Adoyo observed, *“It is the little things like the meeting agendas, there would not be one in braille. There would be handouts in the meetings that would not be in braille. And they would just be like, ‘Oh gosh, Ms Adoyo, I’ve seen you. I just didn’t have time to do it. I didn’t remember, I forgot”* (Adoyo, p.14, L22-27).

Suggestions concerning accommodations for teachers with visual impairments. All four participants had recommendations and suggestions on how they think issues of accommodations for teachers and students with visual impairments can be

effectively addressed. These are broken down into four groups; suggestions for teachers with VI; suggestions for administrators; suggestions for parents, and suggestions for teacher preparation programs.

For the teachers who have VI, all participants suggested the need to understand their work, how they need to do it, and what resources they need to use. When the teachers know the resources they need to work efficiently, they are in a better position to instruct the support staff on how to assist them. When teachers with VI understand their own accommodation needs, they will be able to help the administration to understand the same needs so as to provide the right accommodation. Anyango explained that the school districts may not know how to provide accommodations for people with VI; hence the teachers should give guidance on how they need to be given accommodation. She said, *“I explained, so we had to go through human resource, and get them to see there wasn’t reasonable accommodation, and so now anyone who is a blind teacher, that’s kind of an assumed thing that they have asked for”* (Anyango, p.4, L23-26).

The participants suggested that teachers with VI need to be active participants regarding accommodation. As much as the ADA of 1990 gives people with disabilities the entitlement to reasonable accommodations at their workplaces, individuals with disabilities should know the type of accommodations they need, and make requests on an individual basis before the administrators or employers are obligated to provide the accommodations (EEO, 2011). Awino and Anyango stressed the need for the teachers who are blind to advocate for themselves so that they can be provided with the right accommodations.

Regarding the provision of reader services, Anyango said, *“I had to ask, I had to really push. I had to advocate receiving the reader services because they were trying to make it my TAs’ job and I’m like, ‘No my TAs are hired to work with the kids and not to do my paperwork”* (Anyango, p.6, L4-6). Adoyo said she had to request the administration for a different kind of accommodation than what she had been using before, because she was developing other health complications. She said, *“I was given the Voice Note. It’s like the Apex. I asked for one without the braille display because my braille was getting really bad, then I knew it wasn’t going to be useful. They were kind enough to buy this one for me. I asked and I really had no idea that they would actually do it”* (Adoyo, p.23, L1-3).

The participants also suggested that teachers with VI consider accommodations their own responsibility and not other people’s. If teachers with VI let other people decide on how to make accommodations for them, the teachers will lose control of how they want things presented to them. Anyango observed that, as much as the ADA of 1990 gives the teachers their rights to accommodation, the teachers should not sit back and wait for other people to decide what and how to provide what they need. She said, *“I think the mistake you can make is to think that it is somebody else’ responsibility to do it for you, and that’s ok, but what you are doing is giving up the control of how you would want it presented”* (Anyango, p.17, L14-16).

The participants suggested that teachers with VI should take their responsibilities like other professionals at their places of work. Adoyo observed that people who are blind may only need to work a little harder than those who are sighted (Adoyo, p.11, L7) and have the determination to achieve. Anyango, on the same point, observed that if

teachers who are blind want to be respected at their places of work, they have to earn it. She said, *“If you are working in a site, and you want to be respected as a teacher on that site, you need to work like one. You need to take on all the responsibilities that come with being part of that faculty”* (Anyango, p.16, L23-25).

The participants advised that teachers with VI should network, and consult other teachers with VI so that they can agree on effective strategies to use. While Awino reported that she networks with professional organizations and uses them as her sources of information, Anyango said that she searches for resources, but before she uses them in teaching. She consults with her colleagues to make sure that her ideas are workable. Regarding the use of Open Book as a resource she said, *“I sent notes to my colleagues because we needed to cut it, and present it all together. So they needed to know what I was covering”* (Anyango, p.16, L34-35).

The participants suggested that teachers with VI should challenge the students with VI to maximize their abilities. Awino reported that as she works with the students, she learns the abilities of each one of them, and she can be very straightforward with them. She does not encourage laziness or overprotection from the parents because she understands the abilities and limitations that the students may have that result from having a VI. Thus she reported saying to the students, *“I know, so don’t give me any excuses why you are not doing your work because it can be done”* (Awino, p.11, L16-17). I observed Anyango demonstrate in her class sessions that students need to be challenged to maximize their abilities. In reading, she insisted that each student had to learn to read correctly all the words for that lesson. While she would allow them to take breaks when they felt tired, she insisted that they had to finish the work for the day and

discouraged them from listening to what their peers were saying (Anyango, p.22, L10-12). Each student had to recognize the letters, and figure out the words. She emphasized good finger-reading techniques, and good posture when reading, *“No resting on your elbow, honey”* (Anyango, p.22, L4-5)! She would say.

All four participants suggested that teachers with VI should model the right way to do things with their students. The participants observed that the teachers who are blind have a lot of skills for teaching the students with VI (e.g., the compensatory skills, and the sources of information for VI). Atieno said, *“Well, I really think they should have braille, really good skills, Nemeth code, and a strong belief in the importance of those skills, orientation and mobility, technology”* (Atieno, p.8, L8-10). The teachers who are sighted and parents could also benefit from the resources that the teachers who are blind have.

The participants suggested that teachers with VI should reach out to sighted peers and let them know how they would like to be assisted. This strategy was recommended by Awino and Atieno who felt that unless the teachers reached out to the sighted community, they may not be able to carry out their duties that often require assistance from sighted people. I observed Awino interact with people at her workplace and most of the times, she was the first to initiate interactions. She reported that during her time as a student in a regular school, she experienced more positive reactions from her peers who were sighted when she opened up and started talking to them. She said, *“I would listen to them talk, telling jokes and I would say, well, I know one, and I would tell them a joke and they are like, oh, really? Wow”* (Awino, p.4, L1-3)!

The participants suggested that teachers with VI should learn to try out new technology in order to be effective. Adoyo said, *“I haven’t taught people how to use the Apex, but I think if they get over their fears of it and just go in there and wrap their minds around it”* (Adoyo, p18, L1-2). On the same point, Anyango suggested that teachers should find their own time to learn the technology for accessibility and help each other to use it. Thus she described the way she uses the technology (Open Book Scanning Software), *“When I scan the article straight out of the book, I can take pieces out of it and put in a document. I could then copy from it”* (Anyango, p.17, L3-4).

All the participants had suggestions for administrators of programs for students with VI. They emphasized the importance of helping students with VI to develop compensatory skills. These skills are taught as the expanded core curriculum areas, and the teachers expressed concern that they usually do not get enough time to teach the areas (Anyango, p.9, L21-22). The teachers suggested that the administrators allow them flexibility with time to teach these areas because the students with VI need to master the skills to be able to compete in employment opportunities with their peers. Anyango stated, *“I’m a firm believer in intense braille instruction in the beginning, how to do it right so that they really have a good foundation as they move out into the sighted world they have skills to compete. Otherwise, they fall further and further behind and they believe that is the way it is going to be”* (Anyango, p.16, L3-7).

The teachers suggested the need for consistency and professionalism in hiring teaching assistants. As much as teaching assistants are employed by the school districts to assist the students who have VI and not the teachers, they work with the students under the teachers’ instructions. At times they help the teachers who are blind to carry out the

visual tasks (e.g., for students with low vision). All the participants recognized the need for support from assistants who are sighted in the course of their duties. I observed all the participants getting assistance from TAs at some point during their lessons. For example, TAs assisted the teachers by reading information on computer screens, grading students' work, monitoring what the students were doing during lessons, and labeling classroom displays. However, the teachers expressed concern that the TAs did not have any training in the work they were supposed to do. The teachers were expected to train each new TA that was assigned to work with them. Anyango observed that it would have been better if the TAs had basic training at least in braille so that they could help the students better. She said, *"We prefer this and of course it makes our job easier when they do it. It is that they learn the braille to assist the kids"* (Anyango, p.8, L27-28). The other assistants who were sighted that the teachers used were the readers who were employed by the school districts to assist the teachers with the paperwork that was not accessible on the computer, and volunteers. Again the teachers expressed that they do not have choices when it comes to picking the person to read for them and Anyango reported, *"You pick whoever is in line"* (Anyango, p.7, L30-31). Because the readers do not have any professional training in working with teachers who have VI, they may not understand the structures of the documents they work on with the teachers as reported by Anyango. She said, *"I have had problems with my reader, where she left out important information about the setup and I left out some grades because she didn't tell me there were sub-categories"* (Anyango, p.7, L17-19).

The study also revealed that the teachers who are blind would appreciate the services of TAs if they were officially considered part of their accommodations. At least

this would give the teachers more voice and job security as they work with the assistants. I observed all the participants making use of TAs at one time or another during the study. They seemed to need the services more in performing visual tasks such as observing the students as they worked on projects or took tests. Adoyo stated, *“Oh, I’d love that. I used to have an aide who would come for a couple of classes....but these past few years; I haven’t had one at all. But I hate to ask for something like that because at the same time, I don’t want them to think that I can’t do my job”* (Adoyo, p.22, L3-6).

The participants expressed that they need to get support and resources from the administration that are comparable to what the teachers who are sighted (e.g., the teacher’s guide for lesson plans). Because not all resources come in accessible formats for people who are blind, the teachers felt that the administration could ensure the support staff adapt the resources for people with VI. This accommodation calls for the administrators to be flexible regarding the terms of employment of the support staff. Adoyo reported requesting to have the TAs braille the teacher’s guide for her but was turned down. She said, *“...I asked, ‘Would the TAs braille the teacher’s guide for me?’ They said. ‘No they wouldn’t. They wouldn’t do it for you because they are only to serve blind students, and to serve blind teachers is not in their responsibility,’ even though the sighted teachers get a copy of the book in their reading medium (laughing)”* (Adoyo, p.7, 24-27L).

On a related issue Atieno observed that teachers who are sighted are entitled to have substitute teachers to step in when they work on their Developmental Reading Assessments (DRA). However, teachers who are blind are not entitled to substitutes. She suggested that the administrations should consider getting substitutes or TAs to step in

for teachers who are blind when they work on their IEPs. She said, *“The sighted teachers get subs so they can take the DRA-their developmental reading assessments. They get a sub! So why can’t we get a sub so that we can work on the IEPs”* (Atieno, p.9, L34-35)?

Other suggestions for administrators were concerning accessibility. The participants felt that both physical and software accessibility for people with VI should be made priorities by institutions before constructing or buying them. As accommodation measures, the administrators need to consult with the teachers who are blind to determine the accessibilities of buildings or software before purchasing them. Regarding this, Adoyo suggested that administrators should consider more, what is friendlier to the consumer than what is on sale or what the construction company advises them to buy. Thus Adoyo advised, *“Just try, just not to make accessibility an afterthought, but try to make it a real priority and concern....think of it before they do something”* (Adoyo, p.16, L26-27).

The participants also suggested that administrators should consider providing teachers who have VI with more training in the use of AT, and opportunities to update their AT skills regularly because technology keeps evolving (Adoyo, p.18, L18-19). All the participants appreciated the improved access to information through the training in technology provided by the schools, but they also observed that more training opportunities would give them increased access and competence, thus making them more productive professionals. Adoyo said, *“I know there are things I could do if I knew more, you know, things like Chat, Google. That way you could have a page where people can comment on it, you can have a discussion, like an on-line discussion forum or something like that”* (Adoyo, p.18, L19-22).

The participants had suggestions for the parents, and one of them was that parents should be educated on the importance of early intervention programs for students with VI. They should be made aware about the importance of letting the children with VI venture and experience the real world like their peers who are sighted.

All three participants who had congenital VI confessed that their parents were active in getting them to early intervention programs for children with VI. The parents played major roles in their adjustments to living as persons with blindness. Anyango stated how the mother would close her own eyes to learn how to do things and then demonstrate to her. Awino and Anyango reported how their mothers helped them develop confidence by treating them like any other ordinary children and allowing them to play outdoor games with friends. Adoyo reported that her parents had to relocate from a rural setting to live in a city so that she could live at home but go to a residential school for children with VI where she had all the resources to help her adjust. Thus she sums it up, *“I had the best in both worlds.....getting to live at home and getting to go to the school for the blind”* (Adoyo, p.1, L29-30). All the participants considered their rich early life experiences as the basis for their success as people with blindness. They all recommended that parents should be active participants in the early education of their children who have VI.

For the teacher preparation programs, the participants suggested that they should focus on the capabilities of people who are blind, and how to make accommodations so that the teachers with VI adopt alternative ways of accomplishing tasks. Adoyo suggested that teacher preparation programs should consider the students with VI as future adults with blindness that need to be helped to develop value. She said, *“I think you really need*

to believe in the capabilities of blind people in order to teach blind children” (Anyango, p.16, L15-16).

The participants suggested that the teacher preparation programs expose university students to practical experiences for immersion in the different ways people with VI accomplish tasks, and how student teachers who are blind can use these skills to help students with VI learn. Also, instructions need to be part of the university curriculum as well. Adoyo observed that although she was born with blindness, she had never thought of what is involved in teaching a student with VI. Therefore she had to learn how to do it as an adult. She observed, *“Before I started volunteering here (program for students with VI), I hadn’t really thought much about how to go about teaching a blind child. I hadn’t spent much time thinking about it”* (Adoyo, p.3, L20-21). The programs should involve organizations for the individuals who are blind in developing the training curricula, especially the expanded core curriculum.

The participants suggested that teacher preparation programs should train their students with VI about the importance of knowing their individual needs for accommodations and the possibilities that are available. They should use this knowledge to figure out their individual needs and how they would like those needs to be met. The teacher preparation programs should also emphasize to the trainees the importance of acquiring the compensatory skills besides the academic skills. Atieno had this to say on the issue, *“Well, I really think they should have braille, really good skills, Nemeth code, a strong belief in the importance of those skills, orientation and mobility, technology”* (Atieno, p.8, L8-10).

The participants felt that some teacher trainees who have VI might not be aware of the accommodation opportunities that could be available for them in places of employment. The teacher preparation programs should make the students with VI aware of the available options to them. Awino suggested that when the university professors go out to observe the students in the schools during student teaching experiences, they should point out to the students with VI that they can ask the regular teachers to assist them with accomplishing tasks that require vision. She suggested the professors can say, *“Hey, have the teacher here involved! You don’t have to do all this stuff alone”* (Awino, p.13, L20-21).

Summary

In this chapter, I have presented the results of the study as obtained from within-case and cross-case analyses. The main conclusions that emerged from the analyses are presented here. It is important for people with VI to have access to intervention services immediately when a person is diagnosed with an eye disease or a VI so that they learn the compensatory skills to enhance their participation in life like their peers who have sight. All the participants acknowledged the roles their parents played in enrolling them in early intervention programs.

All the participants expressed that they decided to pursue careers in teaching students with VI because of their visual conditions. They all went through the certification processes of being TVIs as was required by the university systems and state education licensing boards. Although the participants used different approaches in teaching their students, they all concurred on the importance of learning to use technology and teaching the skills to their students. The teachers emphasized the

importance of teaching compensatory skills, and individualizing instructions. They observed that it was important for them to teach students with VI because they act as symbols of success, and the fact that people with VI can learn and achieve like any other person. The teachers also play consultancy roles to the students and their parents regarding how people who are blind accomplish tasks, and how to raise children who have VI, respectively.

The participants identified several challenges that they face in workplaces as a result of having a VI. The most common challenges mentioned were large amounts of paperwork, having to perform visual tasks, inadequate training in technology, working with TAs who do not have professional skills and lack of time to meet job demands.

Finally the teachers gave suggestions in four categories regarding accommodations for people with VI. They gave suggestions to other teachers who have VI, to administrators of programs for students with VI, to teacher preparation programs that admit students with VI, and for parents of students with VI. Teachers with VI should make the effort to learn to use technology. They should also participate in making decisions concerning individual accommodations. Administrators should consult with individual teachers regarding their accommodations, and exercise time and flexibility concerning paperwork that is not available on the computer for the teachers with VI. The teacher preparation programs should expose student teachers who have VI to practical experiences and advise them on the available alternative ways to accomplish tasks. Finally the teachers suggested for the parents of the children with VI to seek early intervention services for their children, and encourage their children to venture and have active childhoods like their peers who are sighted.

CHAPTER 5

CONCLUSIONS, IMPLICATIONS FOR PRACTICE, AND RECOMMENDATIONS

Conclusions

This study was to explore and understand the experiences and perceptions of teachers who are blind about the accommodations they use or need to function effectively as they teach students who have VI. It was also to help establish their opinions on what can be done to make their situations better. The study generated information leading to the conclusion that teachers who are blind use and need accommodations to compensate for their limitations that result from having a visual impairment. The accommodations teachers reported using include applying special skills and strategies to work with their students, using assistance from people who are sighted, using AT, being organized and planning work in advance, continuous professional development, and being flexible with time. However, the teachers could perform better if all of their individual accommodation needs were adequately addressed. The study also revealed that there are positive aspects in having teachers who are blind teach students with VI. The teachers also reported facing many professional challenges as a result of having a visual impairment. Finally, the study generated suggestions for possible improvements to different stakeholders in the field of VI concerning the issues of accommodation.

It is important for children who have VI to receive early intervention services and family support so that they can develop compensatory skills to prepare them for independence in school, career development, and adulthood. All the participants reported having received early intervention and family support in different ways. They attributed

their successes and independence to these early training. In addition to appreciating the different support from family members, all participants emphasized the importance of braille and orientation and mobility for children with VI to be independent at school.

Teachers who have VI and teach students with VI use special skills and strategies to successfully perform their jobs. All the participants emphasized the importance of AT to access information and teach their students. They reported having strived to learn to use AT on their own and embraced it as a tool. This is really different from many teachers who are sighted in their sixties who may not embrace technology as readily because the need is not as compelling. The observation also supports the opinions of Holbrook and Koenig (2000), Belson (2003), and Merri and Monties-Cabot (2005) who said that AT can make the work of teachers with VI more manageable, but the teachers must first learn to use the AT before they can adapt it for teaching. They recommended training for teachers to increase their understanding of AT.

Differentiating instruction is an important strategy for teachers to meet individual needs of students. All participants demonstrated use of this strategy in different ways (e. g., preparing materials in accessible formats; letting students work at their own paces). This conclusion supports the report by Correa-Torres and Howell (2004) that teachers reported not having enough time with the students who have VI.

Working with assistants who are sighted seemed to improve access for all of the participants. Teachers who are blind would like this accommodation provided according to individual needs. However, all the teachers expressed the need for some consistency and basic professional training regarding this accommodation. Parker and Kirchner (1997) observed that people with VI can get visual information (e.g., from televisions)

through description by sighted friends or family. However, they also noted that this is sometimes inconvenient to both the sighted person and the person with VI. The person who is sighted may not enjoy the show as other important incidences go on during description. In addition, the person may not be good at the description, making it difficult for the person with VI to follow. Lewis, et al. (2003) also reported that when teachers have to use readers who are sighted, it is important to identify the readers who can be trusted to keep students' confidentiality. These suggestions point to the fact that there is a need for professionalism when providing sighted support as an accommodation for people with VI. It is important that the assistants get some basic training in assisting people with VI. Similarly, Corn and Erin (2010) observed that people who are blind can benefit from the services of live readers, but to use them efficiently, they need to guide the readers in a time-efficient manner to gather the information.

All teachers who are blind need to embrace planning and organization as a priority in their work because they have to plan for individual students and get the materials in accessible formats both for themselves and their students. Ottowitz (2013) emphasized the importance of organization for teachers who are blind. She observed that having a place for every item one uses and putting things back in designated places after use makes it easy to locate the items when one wants to use them. It is also a better way to manage the environment, besides saving time and energy and reducing stress. She suggested that teachers who are blind can organize things that they use in categories (e.g., how they are used, and order of use).

Teachers who are blind have limited access to information; therefore, they need to embrace continuous learning to acquire skills needed to work. Participants in this study

reported and demonstrated different ways in which they learn new skills, including networking, attending conferences and workshops, and using the internet among others. Ottowitz (2013) observed that networking, and the use of resources that are available can help one to learn about other resources and adaptations that they may not be aware of. She advised teachers who are blind be familiar with websites that have databases for professionals who are blind and are willing to share information about how they manage their work. Additionally, she said attending professional conferences is also a way to meet people, refresh, and develop further skills. This strategy is important because professional organizations usually have the latest updates on research reports and latest resources.

Teachers who have VI and teach in programs for students with VI have enhanced access to information through technology. All the participants expressed their satisfaction with the levels of technology offered at their workplaces. I also observed each of them use different types of AT to access information and to teach their students. This observation confirms Ottowitz (2013) who said that much information is accessible to people with VI through computer technology.

It is important for teachers with VI to teach students who have VI because they can play mentors while teaching. All the participants expressed the feeling that it was their responsibility to make a difference in their students' lives and help them to succeed. They regarded mentoring the students as a way of giving back to their own mentors as children who had VI, and they said they enjoy the satisfaction that comes with their students' successes. In addition, the participants said they had experiences, they had "worn the students' shoes," and they know the best resources and where to get them.

They can advise both the students and their parents. In line with this viewpoint, Ottowitz (2013) observed that teachers who have VI can inspire and motivate students and parents as examples of success. Similarly, Bradsborg, et al. (2001) reported observing a TVI who was blind involve her student in constant interactive learning. In my opinion, this constant interaction with the students is appropriate because it would serve the same purpose as facial expressions from the teacher in a class of students with sight and would keep the students from distraction. In the same vein, Morais et al. (1997) concluded that orientation and mobility instructors who are totally blind have successfully taught cane travel possibly because people who have blindness have developed their own unique, effective innovations for teaching these skills.

It also emerged from the study that teachers with VI should teach students who have VI because the teachers are better placed to challenge the students to maximize their potential. The participants said that they have similar conditions and know what the students can achieve. On the other hand, teachers who are sighted might be driven by sympathy and not push the students to maximize abilities.

Although there are laws in place regarding accommodations for teachers who have VI, this study clearly shows that the teachers with VI face many challenges as professionals. They lack of time to accomplish professional responsibilities is a major challenge to the teachers. In addition to spending a lot of time accessing information that is easily accessible to peers who have sight, the teachers do not have enough time to teach the expanded core curriculum areas that their students need to learn. This finding supports the report by Griffin-Shirley, et al. (2004) that TVIs often do not have time to conduct functional vision evaluations and learning media assessments. Similarly, Brown

and Beamish (2012) pointed out that the pressure of time may affect the TVIs' capacity to support students with VI who often require individual attention. Perkins (2012) also reported that teachers who have VI need time to prepare for every step of their lessons because they cannot rely on improvisation. They have to spend time focusing on the needs of individual students. Similarly, in Bradsborg, et al. (2001), a teacher reported that time limitations affect the quality of her teaching and ability to observe. Like one of the participants in this study, the teacher confessed performing poorer when pressed for time because teachers with VI need to use almost the same amount of time as students with VI. Just like their students, the teachers depend on alternative methods of observation that are more time consuming.

Technology has improved access for teachers who have VI, but the teachers still do not have full access to different resources as their peers who are sighted. The participants expressed that there is information (e.g., teacher's guide books) readily available to teachers who are sighted but that does not come in accessible formats for teachers who are blind. The teachers who are blind have to find their own time and means of accessing this information.

Some administrators of programs for students with VI do not understand the accommodation needs of people with VI. The participants identified administrators who do not have a background in VI as a challenge. Such administrators may expect the teachers to work on visual tasks (e.g., report book) and meet timelines the same time as teachers who are sighted. Some official documents (e.g., IEP) that are already on the computer are not fully accessible to the teachers with VI, and they have to rewrite them in Word programs before submitting them to the administrators. This lack of accessibility

is extra work for teachers who are blind. However, the study revealed that most administrators are willing to make accommodations for teachers with VI if the teachers educate them on their individual accommodation needs.

The other perceived administrative challenge is working with support staffs that do not have training in VI and therefore do not understand what the teachers with VI expect of them. The staff may delay with the services to the teachers or give sub-standard support to the teachers such as not filling out official documents correctly.

Compared to people who are sighted, individuals with VI have fewer career options. Lepkowska (2012) reported that many teacher preparation programs are reluctant to admit students with disabilities in their programs because the institutions do not have the right accommodations in place for the students. Additionally, Lepkowska (2012) observed that most schools are well equipped to accommodate students with disabilities, but teachers are not given the same considerations. In this study, all the students had the AT and TA support that they needed, but the case was not the same for the participants.

This study also generated suggestions for stakeholders in the field of VI that may improve issues of accommodation for students and professionals with VI. Teachers who have VI need to understand their own conditions and know the appropriate accommodations needed. This knowledge would enable the teachers to advise their administrators on the right accommodations to provide in order to better educate their students with VI.

The study revealed that it is important for teachers who have VI to network and consult with each other so that they can agree on the best strategies to use. Through networking, they can share ideas and information about resources. The participants

suggested that teachers with VI should challenge the students who have VI to maximize their potentials because the teachers understand their students' abilities and limitations. They also encouraged other teachers who have VI to model to the students how to accomplish tasks because the teachers have a many skills for teaching the students with VI. In addition, they encouraged other teachers with VI to reach out to people who are sighted for assistance with visual tasks. The participants observed that most people who are sighted are willing to help but may not know how to provide the accommodations; therefore, they need to be guided. The participants emphasized the importance of AT for enhanced access to information. Teachers with VI should embrace AT and strive to learn it as it evolves.

The participants suggested that administrators of programs for VI allow them to be flexible with time so that they can teach their students the expanded core curriculum areas that are necessary to compete favorably with peers who are sighted. Brown and Beamish (2012) reported that the pressure of time to carry out their dedicated duties may affect the teachers' capacity to support the students with VI who often need individualized attention.

The participants suggested the need for consistency and professionalism in hiring teaching assistants. Although the assistants are hired to help students and not teacher, the teachers are expected to train them on how to assist the students. Perkins (2012) advised teachers who are blind to train the assistants they work with on the most effective methods of assisting their students. Ottowitz (2013) also advised the teachers to always ensure that they are in-charge and instruct the assistants on how to perform tasks. If the administrators would give a pool of sighted assistants some basic training in VI, then it

would save the teachers who are blind the trouble of having to train a new person every time. In addition, the participants expressed the need to have teaching assistants considered as part of the accommodations for teachers with VI. This arrangement would give the teachers more voice and job security as they work with the assistants.

The study revealed that not all resources for teachers come in accessible formats for people with VI. Therefore the participants suggested that administrators could instruct the support staff to adapt the resources for teachers with VI. Other concerns regarding accessibility were about constructions of buildings and educational software that were not friendly to people with VI. The participants suggested that the administrators consult with people who have VI on accessibility before purchasing of software and constructing buildings. Finally, the participants suggested the administrators to consider providing teachers who have VI with more training in AT, and opportunities to update their skills regularly because technology keeps evolving.

The participants had an important suggestion for parents of children with VI. They all emphasized that parents should be educated on the importance of early intervention services and letting their children venture into and experience the real world, just like the children who are sighted. This freedom would facilitate the adjustments of the students with VI into living as independent adults with VI.

The last category of suggestions from the study is for teacher preparation programs. The programs should focus on the capabilities of the student teachers who have VI and use these to adopt alternative ways of accomplishing tasks. This suggestion calls for helping the student teachers to develop creativity and learning to use the available AT to enhance access.

It is important for teacher preparation programs to expose students to practical experiences for full immersion into how people with VI accomplish tasks and how they can use the skills to help students with VI learn. The participants suggested that teacher preparation programs should involve organizations for people who are blind in developing such training programs.

The student teachers who have VI should be trained on the importance of identifying their individual accommodation needs. This study should help the teachers to figure out how they would like those needs to be met. In addition, some student teachers may not be aware of the accommodation opportunities available in places of employment. The teacher preparation programs should point this out to them during training.

Implications for Practice

In this section, I suggest recommendations to the practitioners that can benefit from my study, the possible changes that need to be made, practices that can be introduced as a result of the findings, and good practices that should be upheld.

Teachers who have VI can adopt the strategies that the participants in this study shared and that seemed effective to improve their performances. They can also use the information in this study to advise their employers on how to provide them with accommodations, based on individual needs. It came out strongly in this study that teachers who are blind need to take their professional responsibilities like any other teacher to earn respect and be recognized as capable of doing their jobs. However, to achieve this level, the teachers need to have appropriate accommodations in place to compensate for their perceived limitations. The teachers need to advocate for such

accommodations as individuals. They need to come out and help the administrators to understand their specific accommodation needs. As revealed in this study, schools have AT teams that do not necessarily include teachers who are blind. It would be appropriate to include teachers with VI in the teams that make decisions concerning acquiring AT.

The study revealed that networking with professional organizations of people with VI is an effective way for teachers who are blind to learn about important resources and new skills for better access. It is important for the teachers to learn and try new technology skills and resources so they can teach their students, the students' parents, and fellow teachers with VI.

All the participants acknowledged that they often need assistance from people who are sighted to accomplish visual tasks. Some schools offer these service as an accommodation but not on a full-time basis; therefore the teachers may, at times, need the services but not get them because the assistants are not available or not on duty all the times. The teachers need to be open, make friends, and reach out to sighted colleagues and friends, and use assistance for visual tasks whenever assistants who are sighted are not available.

It is important for teachers who are blind to understand their work, how to do it, and the resources needed to enhance performance. This knowledge places the teachers in a better position to advise their administrators on their individual accommodation needs. The participants in this study demonstrated that they can measure up to the expectations of their positions. Through this study, administrators of programs for students with VI can understand that, with appropriate accommodations, teachers with VI are in a better position to teach students with VI than teachers who are sighted. This advantage is

because teachers with VI have experience and understand the students' learning styles, their abilities, and limitations. Therefore, the administrators can improve on accommodations by consulting with the teachers about individual needs and involving the teachers in decision-making.

Administrators need to sponsor teachers who have VI for training on the use of AT. The trained teachers can in turn train other teachers and students with VI. All participants in this study observed that they usually do not learn much from the training workshops they attend because the trainers are often sighted and do not understand how people with VI navigate the computer keyboard; therefore, they expect them to use the mouse. However, some teachers who are blind have learned AT skills on their own and usually teach colleagues the new skills on their own time and for free. I would recommend for administrators to recognize such talents and make time and resources for them to train other teachers and students who are blind to use the programs. This can be treated as a reasonable accommodation measure for the teachers and students.

The study showed that teachers who are blind need assistants who are sighted to assist with visual tasks. All my participants acknowledged the importance of assistants who are sighted and identified the tasks for which they use such assistance whenever available. The administrators should hire the assistants for more hours to work with teachers who have VI. Additionally, there is a need for consistency so that teachers can work with particular assistants on a regular basis. The teachers reported not having options of choosing the TAs they prefer to use for assistance. They take whoever is available and, often have to train the assistants each time they get a new one. It would be better if the sighted assistants are given basic training to work with people who have VI.

The administrators need to allow extra time for the teachers who are blind. The teachers expressed that they need extra time to teach compensatory skills which are very crucial for their students who have VI. This need is because each student with VI is a different individual, and their instruction has to be very individualized. One participant suggested that the teachers should be allowed to pull out the students from subjects such as music or art and use the time to teach them compensatory skills.

This study revealed that most school administrators are willing to provide accommodations for the teachers who are blind, but they may not be knowledgeable about the relevant accommodations for individual teachers. I suggest that the administrators involve teachers with blindness in making decisions regarding accommodations. The participants expressed that more often than not, building constructions and software updates that are made in schools with good intentions later turn out to be unfriendly to the teachers and students with VI. At times, the buildings have to be reconstructed and software has to be re-designed. It would be less costly and time saving to involve the people with VI in the planning of the changes rather than making their accommodations as an afterthought. The administrators should consider discussing the physical and software accessibilities with the teachers who are blind before putting them up for use in schools.

Administrators need to consider providing resources to teachers who are blind in an accessible and timely manner. Some resources (e.g., teacher's guide) are freely and readily available to sighted teachers in print but not accessible for teachers with VI. One of the participants in this study said she spent a lot of time scanning resources that were readily available to teachers who are sighted. The support staff can adapt such materials

to make them accessible to teachers who are blind. The participants also expressed that often the administrators entrust the support staff to adapt some information for the teachers, but they do not do it in time and sometimes not at all. For example, it is common for a teacher who is blind to appear for a meeting and find no agenda in braille or in her e-mail while the teachers who are sighted have theirs in print. The administration and support staff should understand that it is important for teachers who are blind to participate in professional matters at the same level with their colleagues who are sighted.

Administrators of programs for the VI should employ teachers who are blind and work with them to promote the education of students with VI. While it was apparent that most schools are reluctant to hire people with VI, this study revealed that the teachers are better placed to help the students succeed because they understand the students' abilities and limitations; they know the best resources to use; they can advise parents on how to raise the students; and they can be reality based with the students.

This study can be a good source of information for teacher preparation programs. The suggestions for training of student teachers who have VI can be used by universities to improve the learning conditions for the teachers and provide better access to resources and therefore produce more confident and high-quality teachers. The teacher preparation programs should consider students who are blind and would like to be TVIs as future professionals and focus on these students' capabilities. The programs should train the students on the alternative ways to successfully perform tasks. They should expose the students to different resources and train them to use the different AT for the VI and the strategies that the students can use to teach their students with VI to use the same AT.

Some participants reported that, if a student teacher has a VI, it should not be assumed that he/she knows how to teach students with VI. They need to learn how to educate children with VI in their teacher preparation programs. The professors should point out the options that are available for the students (e.g., when they supervise them during student teaching). It is also important to emphasize to the teachers who are blind that they need to understand the issues of accommodation, figure out their individual accommodation needs, and help their employers to understand how they would like their accommodation needs met.

Recommendations for Future Research

Extension of the Study with More Participants and Varied Demographics

This study used information from four participants. All were females, in their sixties and were from only two neighboring states. A larger sample, including male participants, and varying ages from more states would probably glean more information on this subject.

Extension of the Study in Developing Countries

As mentioned in my researcher's context, the initial intent was to conduct this study in Sierra Leone, a developing country with limited resources and having the majority of the teachers with VI teaching students who have VI. Sierra Leone, like many developing nations, does not have a teacher preparation program for students with VI. An exploratory study of how the teachers manage in their situations would provide insight for possible accommodation support for the teachers.

A longitudinal Study

As mentioned in the timeline for data collection, this study was conducted at a time when the schools were about to close for summer vacation, so at times the participants were observed reviewing what they had taught earlier in preparation for end of year tests. Therefore, some observation sessions did not fully capture what the teachers usually do when teaching new concepts. It would be interesting to conduct the study at the beginning of the school year when the teachers introduce new concepts to their students, and over a longer period to enable tracking of changes over time. This would also allow more time for observation sessions and enable collecting data from a wider variety of teaching and learning activities.

Summary and Conclusion

This study was intended to explore and understand the experiences and perceptions of teachers who are blind concerning what accommodations they use or need to function effectively as they teach students who have VI and to establish their opinions on what can be done to make their situations better. A qualitative case study design was used, and data was collected through interviews, observations, and documents analysis. Participants were four teachers who are blind and teach students with VI in public and residential schools in the United States. Data was analyzed on two levels of within-case and cross-case analyses to generate similarities and differences among the themes that emerged. The study results illuminated issues of accommodation for the teachers in the areas of family support and intervention, special skills and strategies the teachers use, positive aspects about having the teachers in the programs for VI, accommodation

challenges in the workplaces, and suggestions and recommendations regarding how accommodations for people with VI can be improved.

Additionally, the study revealed that teachers with VI who teach students with VI need to advocate for their accommodations to be provided. The participants in this study who seemed vocal and reported asking for or demanding specific accommodations saw improvements. They had more advanced technology skills (probably because they had opportunities to receive training in the skills), a variety of technology at their disposal, and access to some level of sighted assistance. On the other hand, participants who were not as assertive did not have access to as varied accommodations. I believe the implementation of suggestions in this study report will make the workplace for teachers who are blind more accommodative and friendly.

This study has provided valuable answers to the pertinent research questions. The study has revealed that teachers who have VI use different types and forms of accommodations to accomplish tasks. Some of the accommodations used include computer technology, assistive devices, and assistants who are sighted. However the teachers expressed that the provision and access to these accommodations are not consistent for all individuals with VI. The participants also identified the accommodation challenges that are related to their having a VI, and provided suggestions regarding how improvements can be made.

The study revealed that the teachers who have VI appreciate the improvement in accommodations provided by their school districts. However they expressed the need for more regular training in using AT, provision of TAs who have basic professional training in working with people who have VI and, consideration for extra time by the

administrators so that they can teach the extended core curriculum areas and accomplish paperwork that is not compatible with computer programs for VI. The study also revealed that it is important for teachers who have VI to teach students with VI because the teachers have the experiences and understand how the students learn. In addition, the teachers know the best resources, where, and how to access them. Therefore the teachers can be good consultants to both the students and their parents on issues of VI.

The study revealed that teachers who have VI face a number of challenges in workplaces. They do not access teaching resources at the same levels and time with their peers who are sighted. Sometimes teachers who have VI have to incur costs to put these materials in accessible formats. They expressed a need to have these resources freely and in accessible formats. The teachers also reported the huge paperwork that they have to accomplish, but is not available on the computer. Additionally, some administrators, especially newly appointed ones do not understand the needs of teachers with VI and expect them to perform visual tasks (e.g., observations during tests). Other challenges identified included; limited time to adapt teaching materials for their students and teach extended core curriculum areas; limitations in using AT because of lack of training; and delayed delivery of available accommodations by the support staff, leading to frustration and apparent less participation in professional matters at the same level with their peers who are sighted.

This study also illuminated some of the ways in which the teachers deal with the challenges in their workplaces. For the paperwork (e.g., IEP forms, core curriculum standards) that is not accessible to people with VI on the computers, some teachers re-

write them in Word programs before submitting to the administrators, and others use their friends or volunteers to assist in filling out the forms.

The teachers emphasized that, organization and prioritization of activities is key to success for teachers with VI (e.g., they know that it takes much time for them to work on the IEP, so they start weeks or months in advance). The teachers also start their days earlier and work late. All the participants in this study were seen reporting to work before 7:00am daily. They also reported going to bed past midnight to meet job demands.

All the participants in this study had used their individual initiatives, time and resources to learn the evolving AT. They also reported networking and learning about new resources through workshops, conferences, and websites for professionals in VI. The teachers advised other people with VI to adopt the same practices for better access to information.

Summary

This study has illuminated the strategies that the teachers who are blind and teach students with VI use, the importance of having those teachers in the programs for students with VI, the perceived challenges that the teachers face, and the suggestions for improvement of accommodation issues for the teachers. Therefore, the study is an important source of information about issues concerning accommodation for teachers who are blind, administrators of programs for students with VI, and teacher preparation programs that admit students with VI.

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APPENDICES

A. Interview Protocol

Hi _____. My name is phoebe Okungu, a doctoral student at Texas Tech University and I want to thank you so much for allowing me to interview you. I am a teacher for the students with visual impairments by profession, and currently I am working on my Doctoral degree in the same area. In my Doctoral dissertation, I would like to explore the issue of accommodations that need to be made for teachers who are blind and are braille readers and teach students with visual impairments. The law is emphatic on accommodations for students. Are the teachers given the same attention? I have a number of questions for you on the subject but please feel free to share any additional information that you feel my questions have left out. Please feel welcome.

1. Please tell me about your early life and the onset of your visual impairment.
2. What kind of schooling system (residential/special/integrated/inclusive) did you go through?
3. Pleases share some of the experiences you had in school as a student with a visual impairment.
4. How did you get into teaching students who have visual impairments?
5. Please describe the special skills, if any that you needed to learn to function comfortably as a teacher of students with visual impairments.
6. What strategies do you use to meet the needs of the students with visual impairments?
7. What are the positive aspects of your job?
8. Please describe your role as a model to your students who have visual impairments?

9. Please share with me the challenges (if any) you associate with your job that you think are as a result of your vision.
10. What changes or improvements would you suggest to be put in place so that the work of blind teachers of students who have visual impairments would be more manageable?

Thank you so much for the information you have shared with me today. If you think of anything else that you would like to add to what we have shared, I would be glad to receive it. I may have to call you again for further clarification and if you know of any other person who has a visual impairment and teaches students with Visual impairment in a public setting, please I would like to have their contact for a possible interview.

B. Participant Consent Form

Thank you for accepting to participate in this study. This form describes the study and what I will expect you to respond to today. Please read it carefully and let me know if you have any questions.

What is the purpose of this research?

I am interested in finding out the kind of accommodations that are made to help you function effectively as a teacher for your students. I would also like to see how you make accommodations to help your students learn.

What will be asked of me today?

I would like to interview you and the interview will take approximately one hour. The questions will be about your early school life, your career path, your job as a teacher and your opinion on the present status of accommodations provided for you as a teacher with a visual impairment. I will be audio recording the interview sessions if that is ok with you. I would like to accompany you in all the activities you will be involved in today and tomorrow so that I can observe how you go about your daily routines. Meanwhile I will be taking notes and audio taping the sessions. Lastly, I would ask you to share with me any documents that could be relevant to our discussions as well as any material equipment or devices that support your work in this environment.

Are there any risks in participating?

We are going to conduct the study in your daily working environment. I do not anticipate any risks.

Will my privacy be protected?

Your privacy is very important to me. All the information you share with me will be kept under lock and key so that it can only be accessed by me and my supervisors. You will be known by a unique code in my records and I will not share the recorded information with anybody. I will destroy the recorded information five years after the completion of the study. The report that will be published from the study will not refer to you as an individual but as a member of a participating group.

Is this research voluntary?

Your participation is totally voluntary. You can decide at any time that you do not want to continue and that is fine. Please be assured that whether or not you accept to work with me in this study, it will not affect your relationship with Texas Tech University. There are no penalties for not participating in the study.

Will I receive any compensation?

There is no compensation planned for in this study.

Can I find out the results of the study?

Upon request, you will receive an update of the findings. The results will however be general and not specific to individual participants.

Whom should I contact if I have more questions?

Dr. Nora Griffin-Shirley will answer any questions that you may have about the study.

You can call or email her on the contact below.

Dr. Nora Griffin-Shirley
Box 41071
Lubbock, Texas 79409-1071
n.griffin-shirley@ttu.edu
(806) 742-1997 X 247

Name_____

Signature_____

Name of school_____

Date_____

This consent form is not valid after_____

You can also direct any questions that you may have about the study to the Human Research Protection Program (HRPP) on the contact below.

The Human Research Protection Program (HRPP),

Office of the Vice President for Research, Texas Tech University, Lubbock, Texas
79409,

Phone: 806-742-2064

(Remember even if you say “yes” now, you can change your mind.)

C. Email To Superintendents Of Schools For The Blind

Dear Sir/Madam,

Re: Research study with teachers who are blind and are braille readers

My name is Phoebe Okungu, a doctoral student in Special Education (Visual Impairments) at Texas Tech University and I intend to conduct a study for my dissertation on accommodation needs for teachers who have total blindness and teach students with visual impairments. The planned study involves interview and observation sessions with the teachers at your school.

As a stakeholder in the area of visual impairment, I am requesting for your assistance in identifying the teachers who meet the criteria in your school and would be willing to participate in my study. If you have any questions, please contact,

Dr. Nora Griffin-Shirley, Ph.D., Director
Virginia Murray Sowell Center for
Research and Education in Sensory Disabilities
3008 18th Street, Box 41071
Lubbock, Texas 79409-1071
n.griffin-shirley@ttu.edu
(806) 742-1997 x 247 or 233

I will highly appreciate your cooperation.
Sincerely,

Phoebe Aoko Okungu
Doctoral Student
Virginia Murray Sowell Center for
Research and Education in Sensory Disabilities
3008 18th Street, Box 41071
Lubbock, Texas 79409-1071
Phoebe.okungu@ttu.edu
806-445-6925

D. Emails To Participants

Dear Sir/Madam,

Re: Research study on accommodation requirements for teachers who are blind and teach students with visual impairments

My name is Phoebe Okungu, a doctoral student of Special Education (Visual Impairments) at Texas Tech University. I intend to conduct a study for my dissertation on accommodation needs for teachers who are blind and teach students who have visual impairments.

I am writing to you this mail to request for your participation in my study. I plan to conduct the study through face-to-face interviews and observations at your place of work. Hopefully, the successful completion of this study will yield outcomes that can be useful in developing policies for accommodation practices for teachers with visual impairments. If you have any questions, please contact,

Dr. Nora Griffin-Shirley, Ph.D., Director
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3008 18th Street, Box 41071
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Thank you.

Sincerely,

Phoebe Aoko Okungu
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Research and Education in Sensory Disabilities
3008 18th Street, Box 41071
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