

Experiences of Teachers of Students with Visual Impairments Teaching Social skills
to Children with Deafblindness

by

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ABSTRACT

Deafblindness (DB) is a unique disability that affects individuals differently. Children with DB are affected in different areas of their development such as communication, mobility, cognition, socialization, emotional well-being, and literacy. Children with visual impairments or DB lack significant visual cues in their environment such as gestures and facial expressions that facilitate interaction. These children lack visual learning opportunities. Reduced access to visual cues and imitation of social skills behaviors and patterns contributes to the risk of learned helplessness and passivity of children with DB in their environment. Learned helplessness is said to be when an individual believes that their behavior does not have an influence on their environment.

This qualitative study explores the experiences of teachers of students with visual impairments teaching social skills to students who are deafblind. The study aimed to gain insights into the unique challenges, and strategies, for teaching social skills to this specific population.

The research utilized a qualitative research design, employing semi-structured interviews with a purposive sample of experienced teachers of children with visual impairments working with students with deafblindness. Thematic analysis was used to identify recurring themes and patterns in the participants' experiences.

Findings highlight the complex challenges TSVIs face in teaching social skills to students who are DB. These challenges include the need for specialized communication strategies that integrate tactile signing, and alternative modes of

communication to address communication barriers. The teachers reported the importance of creating a structured curriculum, and predictable environments to support social interactions, considering the unique sensory needs of their students. Teachers also emphasized the significance of individualized instruction, recognizing each student's diverse abilities, preferences, and learning styles. Strategies such as peer-to-peer modeling, role-playing, repetition, tactile signing, hand-over-hand, problem-solving, real-life situations, and conversational/verbal instruction were reported as effective in facilitating social skills development. Collaborative partnerships with other professionals, including occupational therapists, speech-language pathologists, and orientation and mobility specialists, were identified as valuable resources in promoting social integration. Teachers expressed satisfaction in witnessing their students' progress in developing social competence, building friendships, and fostering a sense of belonging within the school community.

The findings of this study contribute to the existing literature by shedding light on the experiences of teachers who work with students with visual impairments in teaching social skills to those who are deafblind. The results underscore the importance of specialized training, interdisciplinary collaboration, and individualized approaches to effectively support the social development of students with dual sensory impairments.

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CHAPTER 1

INTRODUCTION

Experiences of Teachers of Students with Visual Impairments Teaching Social skills to Children with Deafblindness

Deafblindness (DB) is a condition that limits an individual from accessing their environment both visually and auditorily. “DB is a combined vision and hearing impairment of such severity that it is hard for the impaired senses to compensate for each other and to compensate for the combined vision and hearing impairment, the tactile sense becomes important” (Nordic Centre for Welfare and Social Issues, 2018 p.1). It affects social life, communication, access to information, orientation, and the ability to move around freely and safely of individuals who are DB.

According to the Individuals with Disabilities Education Act (IDEA) (2004), DB is a condition in which there is a combination of hearing and visual loss that could cause severe needs that cannot be addressed in programs for students who are deaf or students who are blind (Neal et al., 2004). According to the report of 2017 on the National Child Count of Children and Youth who are DB, 10,000 students in the United States, birth through age 21, were served through Part B or Part C of the IDEA, a federal program that focuses on the early intervention, special education, and related services of children with disabilities and their families and were eligible to receive services from DB projects (National Center on DB [NCDB], 2017). Each individual has different degrees of vision loss and auditory loss, thus making the DB community unique with a diverse range of hearing and visual impairments. Because of this diversity, each individual with DB requires an individualized lifestyle,

communication, education, and work support based on their degree of dual sensory deprivation to improve their ability to live independently (Aitken et al., 2013).

There are numerous challenges individuals who are DB encounter (Bruce et al., 2016; Ingraham, 2007; World Federation of the Deafblind [WFDB], 2018). These challenges include, but are not limited to communication, isolation, mental health issues, orientation and mobility, inequality, unemployment, and poverty (WFDB, 2018). The first-ever report by WFDB stated that individuals who are DB are more likely to be unemployed and live in poverty (WFBD, 2018). Additionally, the educational outcomes of students who are DB are lower when compared to their peers with other types of disabilities and those without disabilities.

Irrespective of the individual's severity of DB, the combined effect of the disability restricts life opportunities, especially for interaction, and learning. DB hinders socialization, access to information, and movement around the environment (Aitken et al., 2013). This means that if an individual has residual vision or hearing, neither of the senses can be used as the main source to access information. For typical individuals, interaction with other people makes them feel a sense of belonging and love as well as stabilizes their mental state. For individuals who are DB, the absence of social interaction can increase their feelings of loneliness and isolation, contributing to mental health concerns related to depression, anxiety, and feelings of worthlessness (Brennan et al., 2005, Brennan et al., 2006; Capella-McDonnall 2009; Dammeyer 2011; Harada et al., 2008; Ingraham, 2007; Moller, 2003; Saunders et al., 2007; Tiwana et al., 2016; Viljanen et al., 2014). Therefore, the need for social interaction is

very important for individuals with disabilities, particularly those with DB. Studies have used social skills and social communication skills interchangeably (Craig-Unkefer, & Kaiser, 2002; Dickinson, et al., 2007; Landa, 2005; Wattanawongwan, et al., 2022)

Social interaction is a social-communicative exchange that occurs between two or more people. DB affects all areas of development in children which includes access to environmental information, communication, and social-emotional growth (Hartshorne & Schmittel, 2016). Social interaction, independence, and engagement are delayed in young children with developmental disabilities when compared to their peers (Merrell & Holland, 1997). Lack of social interaction may result in a range of problems such as anger, depression, anxiety, identity issues, low self-esteem for the child who is DB, and shame and guilt for the parents. (Ingraham, 2007).

Studies have also shown that individuals with disabilities interact less socially due to their impairments (Bruce et al., 2016; Viljanen, 2014). A review of literature has found that individuals who are DB participate less in everyday social events and are likely to choose not to participate in activities due to stigma, self-esteem, and or other responsibilities (Harada et al., 2008; Moller, 2003; Tiwana et al., 2016).

Understanding others and being understood causes fatigue, frustration, and stress that result in barriers to social inclusion for individuals with dual sensory impairments (Chia et al., 2006; Lehane et al., 2017; Lehane et al., 2018).

According to WFDB (2018), “a lack of adequate support for a person and their family, the cost of assistive devices, the lack of interpreter-guide services, and the lack

of rehabilitation services significantly restricts social participation and increases isolation” (p. 43). Okungu et al. (2020) also stated that programs that train personnel that serve students who are DB have limited capacity and scarce resources contributing to the country-wide shortage of trained personnel. Children affected are significantly disadvantaged from incidental learning from families and peers, and therefore, require specialized trained TSVIs to provide specific direct instructions for students who are DB.

Social interaction on the other hand is one of the areas of the Expanded Core Curriculum (ECC). ECC is referred to as a set of components of the curriculum that requires emphasis for children who are school-aged to increase independent living as they transition to adulthood. “ECC is a globally recognized prerequisite to the inclusion of students with vision impairment (those who are blind or low vision) in schools” (Opie, 2018 p.76). It was created to empower school-aged children with disabilities to access their education and make their own choices throughout life.

According to the NCDB (2021), developing social skills supports self-esteem, mental health, and social competence, and at the same time reduces loneliness and social isolation. Hartshorne and Schmittel (2016) stated that genetic risk, sensory impairment, family stress, lack of resources, challenging behavior, and problems with self-regulation and self-monitoring are some of the risk factors affecting poor social-emotional development of children who are DB. Social skills are necessary for basic human interaction (Miller, 2022). These skills include verbal and non-verbal (e.g., gestures, body language, and movements) language that individuals use to

communicate their feelings and thoughts to interact with others. Hartshorne and Salem-Hartshorne (2011), explained that social skills learning includes initiation of interaction, responding to others, and sharing in activities with others. The knowledge and skills required to effectively interact with other individuals are acquired through observation and practiced across several social and cultural settings in various environments. To teach social skills to students who are DB, TSVIs must be considerate of the student's communication needs, interests, and preferences, and must be aware of the most effective activities for teaching those social skills (Haring et al., 1995).

Statement of the Problem and Purpose of the Study

Since DB is a unique disability that affects individuals distinctively, it is expected that TSVIs teaching students who are DB would require unique expertise in evaluation and instructional strategies associated with the students' education (McLetchie & MacFarland, 1995). Without appropriate intervention from trained TSVIs, students who are DB could experience a significant loss of access to information and social skills required for socialization. A specialized mode of instruction is required for children who are DB to learn social skills and manage their interaction within their environment. McLetchie and MacFarland (1995) stated that despite the unique needs of students who are DB, only a few TSVIs may be competent to teach social skills to these students. To further depict the shortages of trained personnel in the field of DB, it was stated that out of 1200 colleges and universities that offer teacher preparation programs only 10 have programs that prepare TSVIs for

DB students (McLetchie & MacFarland, 1995). In addition, the lack of preparedness has been observed to effect more graduating teachers joining the profession in terms of challenges these teachers face attending to various students' needs in the classroom (Musyoka et al., 2016). To assist graduating teachers to meet the challenges of various needs of students who are DB, we need a better understanding of the experiences of these TSVIs which will provide information in understanding the strategies, challenges, and support/resources that are available for the TSVIs providing social skills instructions to students who are DB. This makes it important to understand TSVIs' experience as they work closely with children who are DB.

In addition, a person who is DB may present with a variety of needs across all areas of development, including communication, socialization, cognition, motor, and perceptual development. These issues may cause educational needs that cannot be accommodated in a general classroom, nor in other special education programs that are solely for students who are deaf or blind (Wolford, 2016). More studies have demonstrated that social functioning deficits, communication deficits, and less peer-to-peer interaction have been prevalent in children who are visually impaired and are hard-of- hearing (Fadda, 2011; Fortner, 2015; Ho & Keiley, 2003). Although there has been extensive research on different issues related to DB, none has focused on exploring TSVIs experiences towards instructing students who are DB on acquiring social skills. Research is required to understand the experiences of these TSVIs providing life skill services to this population. Hence, this study will focus mainly on

exploring TSVIs experiences related to teaching social skill strategies to students who are DB.

Objectives of the Study

The objectives of this study include the following:

1. To determine the components of social skills TSVIs teach to students who are DB
2. To determine the challenges faced by TSVIs when teaching social skills to students who are DB.
3. To discover the strategies employed by TSVIs when teaching social skills to this population.
4. To identify what types of social skill instructional supports are offered to the TSVIs by the school.

Research Questions

This study will answer the following questions.

1. What components of social skills do TSVIs perceive to be effective when teaching children who are DB?
2. What teaching strategies TSVIs perceive as the most effective when teaching children who are DB social skills?
3. What issues do TSVIs perceive to be more challenging when teaching social skills to the students?
4. What kind of resources and support do TSVIs perceive to be more appropriate while teaching children who are DB social skills?

Significance of the Study

This study aims to fill in the gap in previous research studies that focused on other issues of the deaf and the blind populations alone. There has been a gap in the body of knowledge regarding the social interaction of children with DB (Bruce et al., 2016; Ferrell et al., 2014; Haegele et al., 2014; Hartshorne & Schmittl, 2016; Lieberman, 2017; Mar & Sall, 1995) and the experiences of TSVIs that provide instructional skills and strategies. To address this gap, this study will use a representative, population-based sample to understand the experiences of the participants. The study will primarily focus on the TSVIs and create awareness of their perceived experiences. This research may provide useful instructional information to both individuals who are DB and their teachers. It may provide useful ways for TSVIs to cope with the challenges they face in teaching their students as well as help individuals who are DB to effectively interact and communicate more to the larger society. It may also be a useful tool for other researchers who would wish to further research this topic.

Scope of the Study

This study will investigate TSVIs experiences teaching social skills to learners who are DB. This study will occur in schools in a Southwestern state including special education schools that enrolled students who are DB. The participants of this study included 11 TSVIs who have experience teaching social skills to students who are DB.

Conceptual Framework

Figure 1 conceptualized deafblindness and the understanding of the development of social skills as discussed in the literature review section. (Figure 1).

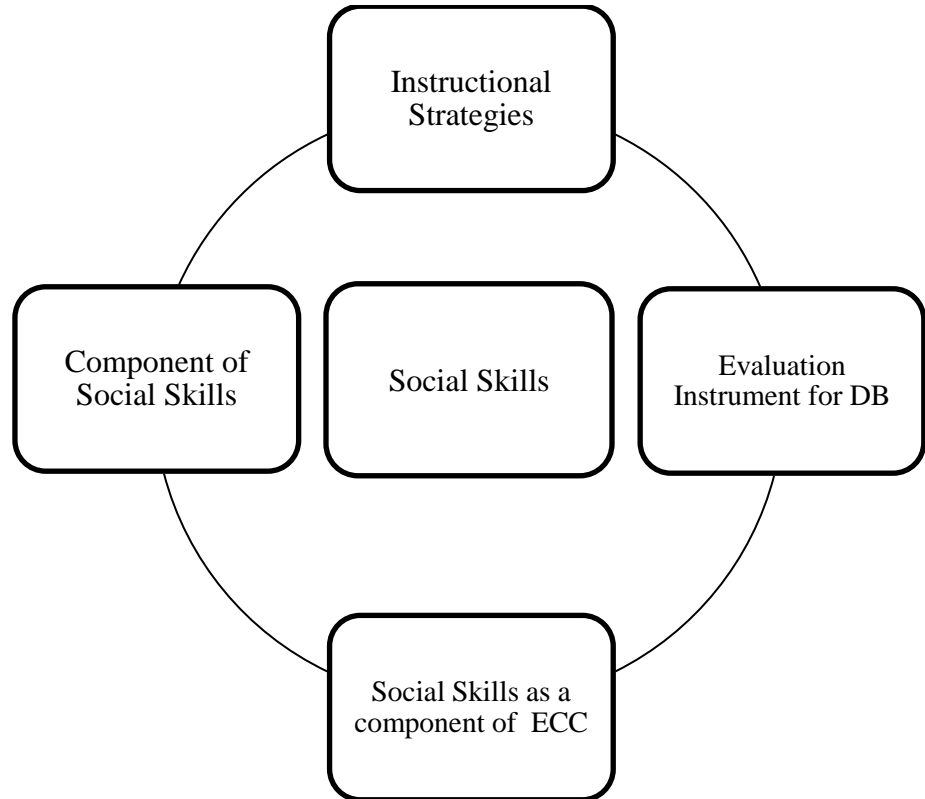


Figure 1. *Conceptual model depicting the elements discussed in the literature review.*

Theoretical Framework- Symbolic Interactionism Theory

A theoretical framework is a foundation from which knowledge from the empirical study is constructed, and it provides a grounded base for literature review, justification for the proposed methodologies, and analysis (Osanloo & Grant, 2016). This study draws its foundation from the symbolic interactionist theory because the focus of this study is on the social interaction of a unique population that has a unique way of making sense and meaning of their environment.

“Symbolic interactionism is a micro-level theoretical framework that addresses how society is created and maintained through repeated interactions among individuals” (Carter & Fuller, 2015 p. 1). Symbolic interactionism theory has three elements: meaning, language, and thought (Carter & Fuller, 2015), through which the theory of self may be constructed. Symbolic interactionists believe in the idea that individuals use language and significant symbols in their communication with others (Carter & Fuller, 2015). This theory is concerned with the interpretation of subjective viewpoints and how individuals make sense of their world from their perspective. Symbolic interactionists believe that individuals act based on the meaning objects have for them. Interaction occurs within a particular social and cultural context in which physical objects/persons and situations must be defined based on individual perceived meanings. Meanings emerged from interactions with other individuals and society, and meanings are continuously created and recreated through interpreting processes during interaction with others (Blumer, 1969). Individuals who are DB, as well as teachers, create their meaning based on the information they receive from their communication partners (teachers). It would be appropriate to view this population through the lens of symbolic interactionist theory where people create and recreate their meaning.

Definition of Terms

Callier-Azusa Scale– This is an assessment instrument designed specifically to aid the assessment of children with DB (Stillman, 1974).

CHARGE Syndrome- Coloboma, heart defects, atresia choanae (Choanal atresia), growth retardation, genital abnormalities, and ear abnormalities (CHARGE) syndrome is a complex genetic syndrome and the most common cause of DB (Wanka, 2020).

Communication Matrix – A communication matrix is one of the instruments used to assess the communication level of individuals in their earliest stages of development (Rowland, 2009).

Congenital Rubella Syndrome- Congenital rubella syndrome (CRS) was first recognized in 1941 according to (Thompson et al., 2016). This infection has been linked to both hearing and vision losses.

Dacryostenosis- This is a condition where a baby tear duct is blocked, and tears have no place for drainage. This can occur in one or both eyes (Boston Children Hospital, 2022).

Deafblindness (DB) - Deafblindness is an impairment in vision and hearing that limits an individual from accessing their environment both visually and auditorily. DB is a condition in which there is a combination of hearing and visual loss that could cause severe needs that cannot be addressed in programs for students who are deaf or students who are blind (Neal et al., 2004).

Dual Sensory Deprivation – this is a combination of visual and hearing impairments (Schneider et al., 2011).

ECC – The expanded core curriculum is a set of components of the curriculum that requires emphasis for children who are school-aged to increase independent living as they transition to adulthood. ECC is a globally recognized prerequisite to the inclusion of students with vision impairment (those who are blind or vision) in schools” (Opie, 2018 p.76)

Free and Appropriate Public Education (FAPE)- Free and appropriate public education is an educational entitlement of all students in the United States who has been identified as having a disability. FAPE requires schools to provide students with disabilities with special education, and related services under the civil right law (Yell & Drasgow, 2000).

Hand-over-hand- Placing your hand above the student’s hand for exploration of objects (Bruce, 2005).

Hand-under-Hand- Placing your hand under the student’s hand for exploration of objects (Bruce, 2005).

IDEA- “Individuals with disabilities education act is a federal law that has been in effect since 1975. IDEA requires public schools to provide a free and appropriate public education (FAPE) to eligible students ages 3-21 with disabilities. IDEA also provides legal protections for these students and their parents” (Texas Education Agency, 2022, p.1).

Individualized Education Plan (IEP) – Individualized education plan is a mechanism that uses assessment, evaluation, and programming system to individualize services for students with special need (Pretti-Frontczak & Bricker, 2000).

Low-Incidence Disability – Low-incidence disability is any impairment for which a small number of personnel with highly specialized skills and knowledge are needed to provide early intervention services for the persons affected (IDEA, 2004).

Meningitis- Meningitis Is inflammation of the meninges that is identified by an abnormal number of white blood cells in cerebrospinal fluid (Feigin, 1992).

Object Permanence – Knowledge that objects continue to exist even when they are out of sight and or touch (Bruce, 2010).

One-on-session- Having separate time with one student at a time (Demmeyer, 2014).

Picture Exchange Communication System (PECS) – Picture Exchange Communication System is one of the ways students who are DB who may have some residual vision can be encouraged to start a conversation. PECS improves functional communication and helps the individual to make an independent request from the communication partner (Bracken & Rohrer, 2014).

Peer-to-peer interaction- Pairing students with their classmates for interactions (Demmeyer, 2014).

Picture/object/tactile symbol- Using a picture of objects, or real objects to make a request, or to represent a real object or an activity (Bruce, 2005).

Problem-solving- Allowing the student to figure the situation out by themselves (Demmeyer, 2014).

Real-life situation- Following a real-life event, and providing feedback concerning the situation (Luckner et al., 2016).

Reinforcement-Providing a reward upon task completion (Bruce, 2005).

Repetition- Teaching a concept multiple time until mastery is achieved (Bruce, 2005).

Role-Play- Acting out conversations and behaviors to demonstrate appropriate social behaviors (Hart, 2006).

Tactile/Calendar Routine- Used to anticipate upcoming events (Bruce 2005).

Teachers of Students with Visual Impairments (TSVI)– Teachers of students with visual impairments is typically a licensed special education teacher who has received certification and specialized training, in meeting the educational needs of students who are blind or have visual impairments ages birth through 21” (Willings, 2020).

Turn-taking- Having students wait until their turn to complete a task (Hartshorne & Schmittel, 2016).

Usher Syndrome- Usher syndrome is a genetic condition that affects the hearing, vision, and balance of individuals who are DB (Fariss & Milam, 2022).

van Dijk Approach- This approach identifies indicators of communicative intents of children with DB, by allowing the child to make movements and by joining the child’s movements. This approach is considered a coactive movement approach and child-centered intervention (Miles, 2008).

Limitations of the Study

This study has some limitations. First was COVID-19, the planning of the study started during the COVID-19 period and data was planned to be collected through Zoom instead of face-to-face. There was no plan for observation of the teachers in their classroom due to COVID-19. Second, this study is limited by its data collection method which utilized only interviewing to gather data. Third, the research

design is limited to 11 participants, and therefore cannot be generalized to other TSVIs.

Summary

This chapter discussed the introduction of the study, statement of problems, objectives of the study, the research questions, significance of the study, the scope of the study, its conceptual framework, theoretical framework as well as the definition of some terms. Deafblindness continues to pose a change in communication, literacy, and interaction of individuals affected.

CHAPTER II

LITERATURE REVIEW

This chapter discusses the introduction, understanding of deafblindness (DB), challenges and issues faced by individuals who are DB, instructional strategies used by teachers of students with visual impairments (TSVIs) of students who are DB, and social interaction of students who are DB. This chapter reviewed literature in the area of understanding DB as a condition that limits access to information in the environment, some causes of DB, challenges, and issues (e.g., communication, mobility, support services, unemployment, poverty, inequality, mental health issues), encountered by individuals who are DB. Strategies TSVIs utilized while teaching interaction skills, the development of social skills for persons who are DB, and personnel involved in the services of individuals who are DB. Components of social skills as well as social skills as part of the ECC are discussed.

Definition of Deafblindness

DB is the condition of having impaired vision and impaired hearing (Aitken, et al., 2013). There are different degrees of vision loss and auditory loss within individuals who are DB, thus making the DB community unique with many types of DB involved. According to the World Federation of the Deafblind [WFDB] (2018), DB distinctly affects each individual's connection, communication, and experiences of the world differently. Participation in their environment depends on the level and severity of their vision and hearing loss and the age of onset. Because of this diversity, the unique needs of individuals who are DB regarding lifestyle, communication,

education, mobility, support, inclusion, and work needs to be addressed based on their degree of dual-modality deprivation to improve their ability to live independently. As of 2018, persons living with severe DB accounted for 0.2%, and 2% of people also had milder forms of DB in the world. Based on this estimate, over 15 million people are living with severe DB (Sense International, 2021; WFDB, 2018). The National Center on Deafblindness (NCDB) (2017), estimated that roughly 35,000 - 40,000 adults and 10,000 children in the United States are medically diagnosed with DB. These individuals have difficulty communicating, finding information, and moving around their environment (Aitken et al., 2013). Wiley et al. (2014) described a person who is DB as someone who is deaf or hard-of-hearing in combination with a visual impairment or blindness.

Generally, people who are DB often have difficulty in knowing where belongings are located, moving safely, and recognizing and interacting with people, places, and things (Welch & Prickett, 1995). Individuals who are DB like every other individual long to communicate, interact and establish relationships. The range of capabilities and support needs of individuals who are DB vary substantially from person-to-person because of differences in the extent of partial vision or hearing, if any, or the presence of additional conditions such as intellectual or physical disabilities. Children with DB belong to the low incidence group. According to the IDEA (2004), a low-incidence disability is a visual or hearing impairment, or a combination of visual and hearing impairment (DB), significant cognitive impairment, or any impairment for which a small number of personnel with highly specialized

skills and knowledge are needed for this population with the impairment to receive Early Intervention Services (ECI) or a FAPE (United States Department of Education, 2002). DB could be congenital or acquired later in life as a result of some specific conditions such as CHARGE Syndrome, Usher syndrome, Rubella, and Meningitis, among many others (Miles 2008; Vervloed et al., 2006).

CHARGE Syndrome

Coloboma, heart defects, atresia choanae (Choanal atresia), growth retardation, genital abnormalities, and ear abnormalities (CHARGE) syndrome is a complex genetic syndrome and the most common cause of DB (Wanka, 2020). CHARGE manifests in cranial nerve abnormalities that may affect vestibular functioning, swallowing, sense of smell, facial palsy, ocular motor control, and sensorineural hearing (Blake et al., 2008; Demmeyer, 2012). CHARGE may arise in the early stage of fetal development and affects multiple organ systems at birth (National Organization for Rare Disorders [NORD], (2012). “CHARGE is caused by a mutation change in the *CHD7* gene, or rarely a genomic alteration in the region of chromosome 8q12.2 where the *CHD7* gene is located” (NORD, 2021; p.1).

Coloboma is described as the failure to close the eyeball during fetal development which can result in a keyhole-shaped pupil or abnormalities in the retina, macula, or optic nerve. The coloboma may also result in significant vision loss, which includes spots, problems with depth perception, or legal blindness. Seventy to ninety percent of CHARGE patients are affected with colobomas (NORD, 2021). “Children with colobomas (even just an iris coloboma) may be sensitive to bright light

(photophobia)” (NORD, 2021 p.1). Colobomas cannot be corrected with surgery, however, nearsightedness and far-sightedness associated with coloboma may be aided with glasses.

According to NORD (2021), cranial nerve abnormalities are associated with sensorineural hearing loss caused by cranial nerve VIII. Hearing loss could range from mild to profound deafness in individuals diagnosed with CHARGE. External ears that tend to protrude and lack lobes are some of the features associated with CHARGE syndrome (CHARGE ear). Although hearing loss may prove difficult to measure in children, they can benefit from cochlear implants to assist their sensorineural hearing loss.

Usher Syndrome

Usher syndrome is one of the most common causes of DB. Usher syndrome is a genetic condition that affects the hearing, vision, and balance of individuals who are DB (Fariss & Milam, 2022). According to Fariss and Milam (2022), when both parents of a child carry a mutated gene of Usher syndrome, there is a 1 in 4 chance of the baby inheriting the Usher syndrome with each pregnancy. Babies born with Usher syndrome experience hearing loss at birth or develop hearing loss as they grow. About 10 percent of individuals with congenital bilateral and sensorineural hearing loss may have Usher syndrome (Fariss & Milam, 2022; Millan et al., 2011). Usher Syndrome causes abnormal development of the hair cells which are the sound receptors in the inner ear, and abnormal development of the vestibular hair cells, and sensory cells for movement (Millan et al., 2011; Moller, 2003). Usher syndrome is associated with

retinitis pigmentosa. Retinitis pigmentosa is a degenerative condition that makes it difficult to see in low light and weakening the peripheral vision (night blindness, tunnel vision). Hearing loss, and retinitis pigmentosa (eye disorder) are the two major symptoms of Usher syndrome. “Retinitis pigmentosa is a rare genetic disorder that involves a breakdown and loss of cells in the retina (light-sensitive tissue that lines the back of the eye)” (Fariss & Milam, 2022, p. 1).

There are different variations of Usher Syndrome, Type I is associated with severe hearing loss and or deafness, and balance problems (Millan et al., 2011). According to Millan et al. (2011), most individuals born with Type I Usher syndrome experience a profound hearing loss; they are either born deaf or lose hearing in the first year of life and may not develop speech. Vestibular dysfunction is present from birth. Vision loss begins at age 10 and gets worse with age. Type II is associated with moderate to severe hearing loss. Vision loss begins in the teens and worsens over time with no balance problem (Millan et al., 2011). Type III is associated with hearing loss which begins in late childhood. Vision loss begins early to mid-adulthood and there are balance problems in about 50% of those affected (Millan et al., 2011).

Meningitis

Meningitis has been associated with some kinds of disabilities. Feigin (1992) defined meningitis as inflammation of the meninges that is identified by an abnormal number of white blood cells in cerebrospinal fluid. Richardson (1997) linked bacterial meningitis to deafness. Deafness can result from serious complicated bacterial meningitis in childhood. About 10 percent of bacterial meningitis survivors are left

with permanent sensorineural hearing losses (Richardson, 1997). Kutz et al. (2006) conducted a study where they identified clinical risk factors that predict a higher incidence of hearing loss in children with bacterial meningitis. The findings showed that sensorineural hearing loss is common in children with bacterial meningitis. However, bacterial meningitis has declined by more than 99 percent in countries that have adopted universal immunization. This decline is due to the availability and introduction of conjugated vaccines against *Haemophilus influenzae* Type b organisms (Sáez-Llorens, 2003).

Rubella

According to Thompson et al. (2016), congenital rubella syndrome (CRS) was first recognized in 1941. This infection has been linked to both hearing and vision losses. An estimated 238,000 children are born with CRS in developing countries every year (Vijayalakshmi et al., 2002). Most births with rubella are in developing countries. Thompson et al. (2016) noted that rubella in most patients comes with minor illnesses with associated rashes. However, the study noted that rubella infection in pregnancy, if left untreated, can result in a wide range of severe adverse outcomes for the fetuses such as cataracts, cardiac defects, hearing losses, and intellectual disabilities. Vijayalakshmi (2002) stated that rubella in the first three months of pregnancy is a serious concern because of its effect on the fetus. Vijayalakshmi et al. (2002) findings align with the findings of Thompson et al. (2016) that rubella among other things can cause congenital malformations which include congenital cataracts.

CRS has also been noted to cause deaf-mutism, microcephaly, pigmentary retinopathy, and dacryostenosis (blocked tear duct).

The World Health Organization (WHO) has identified hearing loss as the fourth highest cause of disability (WHO, 2018). Several risk factors have been associated with hearing loss disability. Rubella as a risk factor for hearing loss is not among the leading factors for hearing loss (WHO, 2018). It has been estimated that with the rise of an aging population that the number of people with hearing loss related kinds of disabilities will be on a rapid rise (WHO, 2018). By 2030 about 630 million persons in general may have hearing losses and the number is expected to rise to 900 million by 2050 according to WHO. There has been a dramatic shift in age demographics in the United States and this has brought some increase in hearing and vision loss associated with this kind of disability (WHO, 2018).

Evaluation Instruments Used in Assessing Individuals who are Deafblind

According to Malloy (2010), standardized tests for typically developing children may have limited value for children with DB. There are assessment tools that have been specifically designed for children who are DB or have other disabilities. However, these tools cannot replace strategies such as family interviews and informal and structured observations. Communication Matrix and Callier-Azusa Scale among other tools will be discussed as assessment instruments for children who are DB (Rowland & Fried-Oken, 2004; Stillman, 1974). Other forms of evaluation instruments may not be adequate for assessing children with DB due to their limited

language abilities, corporation, or intact sensory modalities, and/or lack of comprehensiveness at lower levels.

Communication Matrix

This is one of the instruments used to assess the communication level of individuals in their earliest stages of development. Rowland (2009) explained that a communication matrix is an assessment instrument that is intended to evaluate the expressive communication skills of individuals with severe and multiple disabilities. According to Rowland (2009), a “communication matrix accommodates any type of communicative behavior, including forms of augmentative and alternative communication such as picture systems, electronic devices, sign language, and 3-dimensional symbols; pre-symbolic communication such as gestures, body movements, sounds, eye gaze, and facial expressions; as well as the typical forms of communication such as speech and writing” (p. 46). The assessment focuses on four basic reasons to communicate: to refuse, to obtain items, to socially interact, and to provide or seek information (Rowland, 2009). Communicative behaviors cover the full range one might expect to see, regardless of the type or severity of a child’s sensory, motor, or cognitive impairments. In addition, the scoring sheet is easy to use, and the graphic format is useful in describing a child’s present skills and opportunities for progress to parents and classroom staff. The instrument also offers brief but useful intervention suggestions (Rowland, 2009, p. 46). The communication matrix is easy to use with children who are DB, and it is comprehensive at lower developmental levels.

The profile provides an excellent graphic for communicating a child's strengths and weaknesses to parents and classroom staff. However, it assesses only expressive skills.

Callier-Azusa Scale

According to Stillman (1974), Callier-Azusa Scale is designed specifically to aid the assessment of children with DB. Some of the uses of the Callier-Azusa Scale are to assess children's developmental level. Callier-Azusa scale measures progress over time to determine the overall effectiveness of programming or the effectiveness of a specific educational or therapeutic technique for an individual child. It is also effective in guiding the planning of developmentally appropriate programs for each child (Stillman, 1974).

Callier-Azusa Scale is comprised of five areas which include motor development, perceptual development, daily living skills, language development, and socialization. According to Rowland (2009), the scoring of this instrument is based on observation of behaviors that occur in the classroom. This instrument is encouraged to be used by those familiar with the individual's typical behavior (parents/caregivers, teachers). This tool produces valid results when a different individual who has close contact with the child such as the teacher, aides, parents, and specialists evaluate the child on a consensus basis (Callier Center for Communication Disorders, 2021). There are two parts of the Callier-Azusa Scale, and they include Callier-Azusa G Scale, Callier-Azusa H Scale.

The Callier-Azusa G is administered by a person who is thoroughly familiar with the student who is DB such as the teacher, parents, or caregiver. The G scale

assesses the overall development of the student who is DB (Callier Center for Communication Disorders, 2022). This domain includes directions, motor development, perceptual abilities, daily living skills, language development as well as socialization (Callier Center for Communication Disorders, 2022). This G scale in addition, contains numerous examples under each item that describe how a child who is DB might demonstrate a particular skill. These examples were drawn from teacher/therapist reports and reflect behaviors observed among children who are DB (Rowland, 2009).

The Callier-Azusa H assesses the communication abilities of the students who are DB. The domain includes representation and symbolic abilities, receptive communication, intentional communication, and reciprocity (Callier Center for Communication Disorders, 2022). While the profiles derived from the Callier-Azusa H provide an accurate picture of the child's skills along important developmental dimensions, the profiles may be difficult to translate into activities, particularly in inclusion classroom settings (Rowland, 2009). However, many of the examples assume one-to-one interactions and classroom activities were prevalent when the instrument was developed, which may not reflect current practice. The Communication sections include both expressive and receptive language scales. Many items were derived from the van Dijk methodology and emphasized gestures and other nonverbal communication (Rowland & Stillman, 2010). The scale notes where items may not be appropriate for children having severe vision, hearing, or physical-motor impairments.

Some of the strengths of this instrument involve its design for children who are DB, its comprehensiveness at earlier developmental levels, numerous examples that help interpret behaviors and identify skills, and small skill increments at earlier developmental levels that make it useful for slowly developing children. However, one of the weaknesses is that many of the examples do not reflect current practice. Users who are not familiar with the van Dijk approach may not observe some responses in the context of regular activities. van Dijk approach identifies indicators of communicative intents of children with DB, by allowing the child to make movements and by joining the child's movements. This approach is considered a coactive movement approach and child-centered intervention (Miles, 2008).

Challenges and Issues Faced by Individuals who are Deafblind

A person who is DB will need to make sense of their world with the limited information that is available to them. According to Miles (2008 p.4), "children who are DB face the challenges of engaging in interactions to the best of their abilities and of availing themselves of the language opportunities provided for them". Socializing becomes overwhelming for the individual who is DB depending on the severity of the disability. Naturally, DB is accompanied by behavioral and emotional difficulties caused by a deficit in communication and interaction and sometimes complex medical needs and additional disabilities (Cmar et al., 2018; Miles, 2008; NCBD, 2016). Ingraham (2007) postulated that isolation is one of the major problems faced by individuals who are DB. People around them will have to make a conscious effort to interact with the person to facilitate communication and socialization. Learning sign

language and other appropriate modes of communication and interacting with fellow students who are DB, signers who are DB, and interpreters will reduce isolation significantly. Figure 1 is a representation of how these items pose challenges that limit individuals who are DB from participating socially. These items may affect the development of social interaction construct in individuals who are DB, and the items include communication deficit, orientation and mobility, mental wellbeing, inequality, unemployment, and poverty (Figure 2).

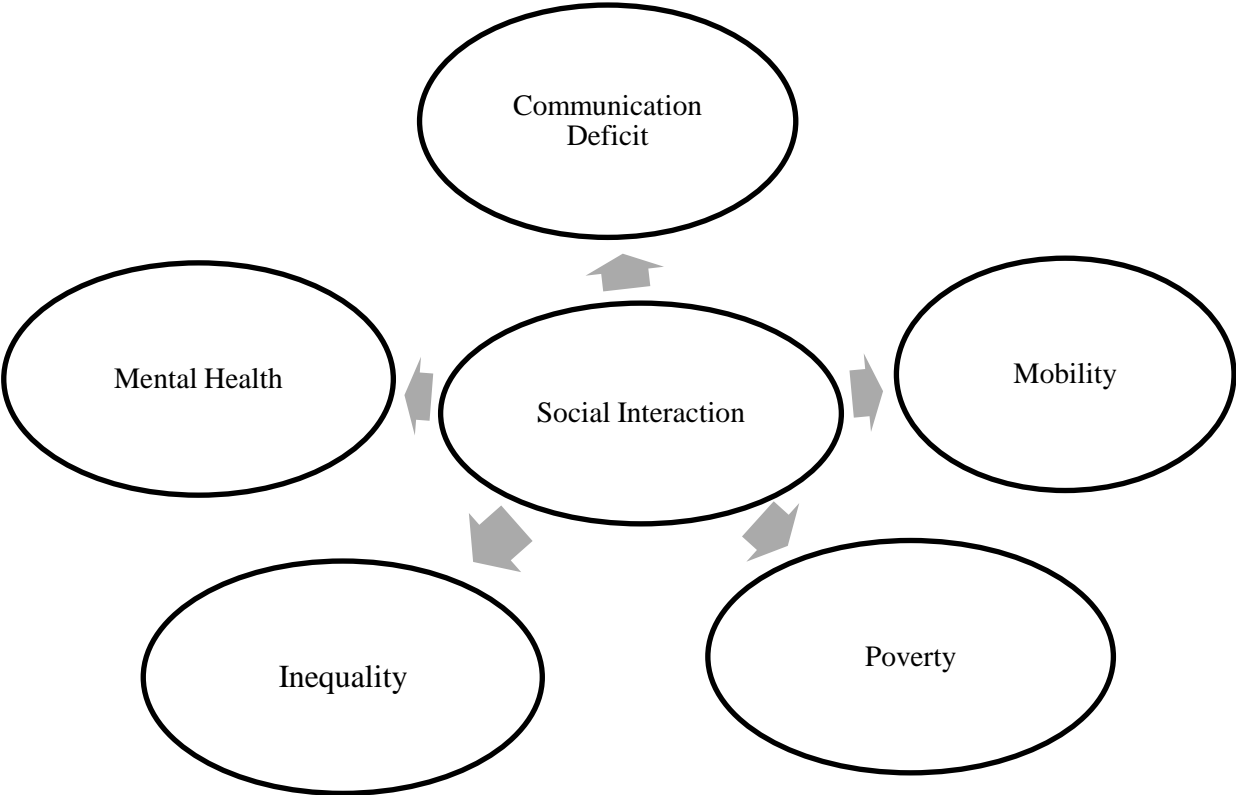


Figure 2. *Challenges faced by students who are DB as it affects participation in social interaction.*

Communication Deficit

One of the challenges families, TSVIs, and caregivers have is communicating meaningfully with individuals who are DB. This disability places a unique demand on TSVIs, families, and caregivers to ensure that these individuals have access to the world they cannot reach through vision or hearing. Communication is the process of interaction that involves the use of signals observed and interpreted by the recipient to transfer meaning (Bjerkan, 1996). Communication according to Miles (1999), is the way we reach out to each other; it is the way we touch each other. Through communication, we connect in the most meaningful sense of the word. The type of receptive and expressive modes of communication (speech and sign language), the perceived intent of the message, the message itself, and the context (environment, characteristics of the communication partner) are important features of communication. One of the greatest challenges children who are DB face is learning to communicate.

Communication is the basis on which socialization is facilitated and difficulty in communication results in the inability to socialize (Miles, 1999). Persons who are DB are expected to acquire communication through learning experiences from peers and teachers who may influence the modes of communication and socialization in their natural setting. TSVIs must ensure that a student with DB could access their world beyond the limitation of the reach of their impaired senses. This ensures that the child has the opportunity to develop fully. Making this meaningful communication has been a major challenge for TSVIs of students who are DB.

There are different modes individuals who are DB communicate, and these include spoken language, sign language, tactile sign language, touch cues, deafblind manual alphabets, tadoma, tactile lipreading, braille, large print, print on the palm, and picture symbols (Crook et al., 1999). Spoken language is communication through speech and the understanding could be through hearing or lip-reading. Sign language is the use of specific hand shapes, body movements, and facial expressions to represent ideas and concepts and they are received visually or tactually. Tactile sign language is when a person who is DB places their hand lightly on the signer's hand which uses a typical sign space and standard sign. Touch cues is a method used by the communication partner to help the child anticipate the next event to occur. Deafblind manual alphabets require using a different hand or finger to represent each letter of the alphabet. Tadoma was developed by educators actively in use in 1930 and 1960 (Reed, 1995), and it is a method of communication that individuals who are DB use to understand speech. Individuals who are DB place their thumbs on the communication partners' lips and their fingers on the jawlines. The three middle fingers fall on the cheek of the speaker while the little fingers pick up vibrations from the speaker's throat (Reed, 1996). This could be considered tactile lipreading. This method of communication provides the individual with a closer connection with speech. Braille is a reading and writing system that is composed of embossed dots. Large print requires a magnified print for easy reading. Print on the palm involves writing block letters on the palm of the receiver using the index finger as a pen by the person who is communicating. Picture symbols are a method where pictures are drawn, printed, or

photographed. A child who is DB can draw pictures to communicate their ideas and choices. Object symbols help represent events and routines for a child who is DB. For example, a toy may indicate playtime, and a spoon may represent feeding time.

Communication Intervention

According to Luckner et al. (2016), addressing communication development in individuals who are DB should be embedded into everyday activity, provided in the context of natural environments, and with sufficient opportunities for social interaction. A comprehensive communication programming for individuals who are DB should address forms, intents, content, and context which includes routines, physical environments, and communication partner skills (Miller et al., 2011). van Dijk's curricula approach has been applied to support communication development. These strategies include establishing trust, responding to the child's interests and communicative attempts, communicating using the child's expressive forms, selecting representations that are noticeable to the child, and utilizing different forms of dialogue and coactive techniques, among others (Janssen et al., 2004). Additionally, systematic instructional approaches have been effective in increasing the rate and variety of communicative intents that are expressed by children who are DB (Bashinski, 2015).

In establishing communication and interaction, touch is very essential for a person who is DB. van Dijk (1966) was the first to introduce unique ways TSVIs can identify indicators of communicative intents of children with DB, by allowing the child to make movements and join the movements. This is considered a coactive

movement approach and child-centered intervention. Imitating a child's movement and allowing the child to tactually explore with the partner in a nondirective way opens a conversational interaction and helps the child feel that their partner shares in their focus and interest (Miles, 2008). According to Hart (2006), imitation offers a particularly powerful means of communication. Imitation allows both partners to occupy a joint dyadic space, where the process of repairing the damaged communication partnerships that many people who are DB have been forced to function with throughout their lives can begin. Individuals who are DB miss many opportunities to communicate with other people, being unable to perceive the invitation offered by a communication partner's speech or by echoing vocalizations. Imitation is simply the starting place for a journey towards a natural language for people who are congenitally DB, a language where meanings are jointly negotiated from the actions, gestures, and vocalizations that develop between people who are DB and their communication partners (Hart, 2006).

Children and youth who are DB also often initiate communication through their hands because they may not be able to use their eyes or voice to establish joint attention. For this reason, educators must be sensitive to the student's hand motions and watch for subtle initiations, especially for beginning communicators (Miles, 2008). Joint attention and joint actions are considered important requirements for well-functioning communication between the child who is DB and the interaction partner. In planning to teach communication to a child with DB, it is important to determine the child's areas of strength to develop their system of communication. When learning

about communicating with students who are DB, it is good to understand the foundations of communication for all people. This allows educators to begin to see the elements of interactions between them and their students that are important for the development of meaningful communication and language (NCDB, 2021). It is also important to consider some of the tools necessary for evaluating children who are DB to provide appropriate intervention for them.

Mental Health Issues Among Individuals who are Deafblind

Individuals who are DB are vulnerable to a variety of mental health problems due to limitations in orientation, mobility, access to information, communication, and lack of interpersonal relationships as well as access to health care (Fellinger et al., 2017). DB may cause psychological distress in individuals who are DB (Demmeyer, 2014). They experience a range of mental health conditions like anxiety and depression, and low self-esteem due to a lack of socialization (Ingraham, 2007; Saunders et al., 2007). There is difficulty in emotional self-regulation and anxiety which may interfere with interaction. Viljanen et al. (2014) state that depression can lead to social inactivity, and equally, social inactivity may result in depression. Studies by Harada et al. (2008), and McDonnall (2011) demonstrated that there is a link between sensory difficulties and depressive symptoms with poor social activity. Severe mental health issues are common in individuals who are congenitally DB, and a higher prevalence rate among those with acquired DB (Demmeyer, 2014), when compared to people without DB. There is an increased risk of depression among the

elderly with DB due to a decreased rate of social activities (Brennan et al., 2005, Brennan et al., 2006; Capella-McDonnall 2009, Saunders et al., 2007).

According to Ingraham (2007), lack of social interaction may result in a range of problems such as anger, depression, anxiety, identity issues, low self-esteem for the child, and shame and guilt for the parents. Studies have also shown that individuals with disabilities interact less socially due to their impairments (Bruce et al., 2016; Viljanen, 2014). Individuals who are DB participate less in everyday social events and are likely to choose not to participate in activities due to stigma, self-esteem, and other responsibilities (Harada et al., 2008; Moller, 2003; Tiwana et al., 2016). Understanding others and being understood causes fatigue, frustration, and stress that result in barriers to social inclusion for individuals with dual sensory impairments (Chia et al., 2006; Lehane et al., 2017; 2018). According to WFDB (2018), “a lack of adequate support for a person and his or her family, the cost of assistive devices, the lack of interpreter-guide services, and the lack of rehabilitation services significantly restricts social participation and increases isolation” (p.43).

The Issue of Orientation and Mobility (O&M)

Another challenge encountered by a person who is DB is movement, a foundational skill upon which other skills are built (Tellefson et al., 2015). Typically developing children learn about their body awareness and spatial concepts incidentally as they interact with their environment. People who are DB tend to depend on others to move around their environment, and children who are DB may lack the motivation to move around due to their inability to visualize their space (Miles, 2008). It is

important that the individual understands where objects are located in relation to their bodies, which will help encourage them to move with purpose. Reduced motivation and limited mobility can have a negative impact on the child's socialization process

Intervention for O&M

Providing orientation and mobility instructions for those who are DB may require the use of O&M specialist who uses American sign language (ASL) and or familiar with the use of touch and cues, and accommodations that will enable the student to interact with the public. The use of an interpreter for the student with DB would be beneficial (Gense et al., 2004; Kelly & Hallak, 2019). The lack of auditory and visual input for some children may severely limit opportunities for them to learn about their environment and to develop language skills, hence O&M skills need to be hands-on learning for the child to enhance the lack of prior experience (Gense et al., 2004; Kelly & Hallak, 2019). Mobility instruction for a person with DB needs to be adapted to suit the impact of DB, potential balance issues, and unique communication needs (Kelly & Hallak, 2019; Lolli et al., 2010). Students who are DB should be encouraged by O&M specialists to use their residual vision and hearing in scanning their environment (Kelly & Hallak, 2019). Basic O&M skills that are appropriate for students who are DB include guided travel, protective techniques, trailing, mobility devices, dog guides, electronic travel aids, and wheelchair mobility (Gense et al., 2004). Kelly and Hallak in Pogrud and Griffin-Shirley (Eds.) (2019) stated that the use of assistance and alternate routes are strategies that can be used with students who are DB that may not have access to visual or auditory information.

The Issue of Support Services

Support services for individuals who are DB have been an area of concern (WFDB, 2018). Many countries have not recognized DB as a distinct disability therefore lacking specific support services for these individuals. WFDB and Sense International surveyed 50 of their members concerning recognition and specific support for individuals who are DB in their respective countries, only 19 (37%) out of 50 countries reported that DB is officially recognized as a distinct disability, of which these countries are more likely to provide specific support services for persons who are DB. Specific support services such as interpreter-guide are available in 58% of high-income countries with 48% reporting government funding, 10% of the low-income countries with only 1 country that reported government funding for interpreter-guide services (WFDB, 2018; Sense International, 2021). This contributes to the invisibility of persons living who are DB. This lack of visibility makes it difficult to capture statistical data on people who are DB.

A need to raise awareness about DB as a distinct disability exists. Due to a lack of visibility, which results in the non-recognition of DB, there are little, or no resources and funds allocated for support services for persons living with DB. Persons who are DB are made to choose to be either blind or deaf in their documentation, making it hard for them to obtain necessary support services specific to their needs (WFDB, 2018; Sense International, 2021). Deafblindness is a disability that requires highly specialized and expensive equipment services, and assistive technology that many states and districts find financially difficult to acquire for children who are DB

(Montgomery, 2014; Okungu et al., 2020). Stereotyping and lack of knowledge among family members and friends may cause isolation for the individual who is DB. When people do not receive adequate support and cannot communicate with a person who is DB, it could lead to violence, abuse, and or neglect (WFDB, 2018).

The Issue of Inequality

Inequality is present among persons who are DB WFDB (2018), and this includes individuals of all ages. There is always a missed opportunity for people to be involved in activities in their school environments due to a lack of social skills caused by limited vision, and hearing. According to WFDB (2018), fundamental needs, such as support services and assistive technology are viewed as luxuries by policymakers when compared to food and shelter. Most people do not receive adequate accommodations in terms of assistive technology and other support services they need to function in their daily living lives. Children who are DB are likely to have fewer opportunities to participate in physical activities in school due to overprotection by both parents and teachers (Hersh, 2013). In addition, individuals who are DB who are of school age are less likely to be in school than those with other disabilities or no disability due to the complexity of dual sensory impairments. With regards to inequality, studies have also found that persons who are DB may experience poorer levels of health, and barriers to accessing mental and health services (Crews & Campbell, 2004; Harada et al., 2008; McDonnall et al., 2016). Some of the barriers to accessing these services are a lack of accommodations in health facilities (e.g.,

communication, and mobility), and a lack of knowledge of and training on DB among mental and health professionals (Guthrie et al., 2016; Saunders & Echt, 2007).

The Issue of Poverty

Individuals who are DB are more likely to live in poverty than persons with other disabilities and no disability (WFDB, 2018; Sense International, 2012; World Health Organization & World Bank, 2011). A study conducted by the WFDB and Sense International showed that poverty was more pronounced among people who are DB when compared to other people with or without disabilities in countries including Ireland, the United States, Ghana, and Tanzania among the other countries in their study. They explained that households with younger adults (50 years and under), which are those of working age with DB, are more likely to be living in poverty in countries such as Brazil, South Africa, Vietnam, the United States, and Indonesia.

Support Personnel for Individuals who are Deafblind

Support personnel for individuals who are DB play a crucial role in facilitating communication, providing assistance, and enhancing independence for people with combined vision and hearing loss. They include paraprofessionals/interveners, and interpreters. Their specific roles and titles may vary depending on the region, organization, or educational system. These professionals often collaborate as part of a multidisciplinary team to address the unique needs and challenges faced by individuals who are DB.

Paraprofessionals and Interveners

Interveners and paraprofessionals are professionals who provide services to infants, and young children, who are DB and their families (Wiley et al., 2014). According to Riggio and McLetchie (2008), an intervener is a person who has training and specialized skills specific to DB and they provide one-to-one services to individuals who are DB (Alsop et al., 2000; Riggio & McLetchie 2008). Interveners provide students who are DB access to information and support for communication that can connect them to their environment. For a student who is DB to have access to effective continual sensory information that will support concept development and understanding, an intervener will be needed. Interveners facilitate access to environmental information that children with DB usually gain through vision and hearing. The expressive and receptive communication of individuals who are DB are facilitated by these interveners. Interveners develop and maintain trusting, interactive relationships to promote the social and emotional well-being of students who are DB (Alsop et al., 2000; Riggio & McLetchie 2008).

Interveners are responsible for increasing and strengthening the child's positive interactions with other people. It is important that the interveners provide support in social situations by orienting the child to where people are for interaction (Watkins et al., 1994). They provide choice-making opportunities to increase the child's sense of control. Interveners are responsible for ensuring that other people understand and respect the child's needs and gather information through touch and close personal space (Alsop et al., 2000). Students who are DB require qualified interveners to

support students' educational development (Probst, 2017). Although, this role of paraprofessionals is still evolving and gaining recognition in the U.S. with their training and certification options at the national level. Markowitz (2001) examines numerous topics including the paraeducator of students who are DB. The findings indicate that despite the challenges educators face serving children and youth with DB, there are personnel who provide specialized services and state regulatory guidance supporting this low-incidence population. According to these studies (Bruce et al. 2018; Huebner et al. 1995; Landa-Vialard et al. 2018; Okungu et al. 2020), there has been a shortage of teachers providing direct services to students who are DB for the past 25 years.

Interveners also play a key role in supporting educational outcomes for students who are DB. The main role of interveners is to facilitate access to environmental information which is normally gained through vision and hearing including receptive and expressive communication (Alsop et al., 2000; Watkins et al., 1994). There has been an increased awareness of the value of employing trained interveners to provide access to sensory information and communication to foster independence for individuals who are DB. This positive development has benefited children and youth in school settings.

Interpreters

Interpreters are personnel that receive and translate information to individuals who are DB through a means that makes sense to them. Interpreters are responsible for translating information from one mode or language to another (spoken language to

sign language and vice versa) these personnel are considered as the conduit through which information flows, and they work with individuals of all ages who are DB (Morgan, 2001). Interpreter services are usually tailored towards the student's specific needs. Some students require tactile interpretation which requires specialized training in interpreting for people who are DB (Probst, 2017). Educational interpreters work together with teachers and interveners in classrooms to convey information provided by teachers to the students.

Shortage of Qualified Personnel for Students who are Deafblind

There is a shortage of qualified personnel that serve children who are DB. (Bruce et al., 2018; Chen & Haney, 1999; Landa-Vialard et al., 2018; Okungu et al., 2020). The majority of educational professionals teaching students who are DB receive little or no training or support and capacity to work with students who are DB and therefore they face many challenges (Bruce et al., 2016; Hartmann, 2021; Luckner et al., 2016; National Center for Deafblindness, 2019; Nelson & Bruce, 2016; Okungu et al., 2020). Okungu et al. (2020) in their study recommend that TSVIs should be cross trained using an interdisciplinary team to better meet the individual needs of children who are DB. They stated that the retention of qualified teachers will improve services for students who are DB (Okungu et al., 2020).

Teachers teaching children and youth with DB are expected to be competent in areas including prelinguistic and linguistic learners (McLetchie & Riggio, 1997). These competencies will enable students who are DB to organize sensory information and orient to space and objects across environments, recommend adapted strategies for

access to the general curriculum, and participate in the school community using strategies to regulate their behaviors. There is a need for intervention studies that investigate effective instructional approaches and strategies in literacy. This is because modern views of literacy include expressive and receptive communication. Expressive and receptive communication are essential components in the area of communication and should be considered an important complement to communication and social interaction (Luckner et al., 2016). Teachers use literacy instruction to foster the acquisition of cognitive, social, and language skills.

It is significant to explore the experiences of TSVIs as well as their teaching strategies, resources, and challenges TSVIs of students who are DB could be facing.

Instructional Strategies Used in Teaching Students with Deafblindness

According to Nelson and Bruce (2016), the education of children and youth who are DB has progressed over time as students' needs and technology have changed. As the education for children and youth with DB has evolved into more inclusive schools and classrooms, the needs of educators who work with these individuals are also evolving (Nelson & Bruce, 2016). Students who are DB are a heterogeneous group, therefore, they will require varying teaching and learning strategies. For example, strategies may depend on the level of vision and hearing loss and or whether DB is pre-lingual or post-lingual (Dammeyer, 2014). Education is one of the key issues among the individuals who are DB, and it identifies the links between employability, social participation, and educational opportunities that are accessible to children and youths who are DB (Bruce et al., 2016). The multiple

learning needs of children who are DB require qualified professionals who can assist families in obtaining the appropriate medical treatments, ophthalmological and audiological services, and other related services (Chen & Haney, 1999). Personnel preparation for teachers of students with low incidence disabilities has been an area of concern over the years (Blaha et al., 2009; Bruce, 2007; DeMario & Heinze, 2001; Huebner et al., 1995; Ludlow et al., 2005; McLetchie & MacFarland, 1995). However, Janssen et al. (2003) stated that most educators of children who are DB are not equipped with the high levels of sensitivity, insights, or skills required to understand the experiences and emotions of these children and to deeply connect with them.

Some of the strategies that have been effective in teaching children who are DB include child-guided approaches, tangible representation, tactile approaches, systematic instructional approaches, daily schedules, and story boxes,

Child-Guided Approach

Child guided approach starts with the child and ends with the child. (Bruce et al., 2008). According to Bruce et al. (2016 p. 425), “child guided strategy involves establishing trust, responding to the child’s interests and communicative attempts, communicating using the child’s expressive forms, selecting representations that are salient to the child, using different forms of dialogue, and using coactive techniques”. Bruce et al. (2016) examined the state of research on communication and literacy in DB. Research found that child guided approach is effective in communication programming for children and youth with DB while targeting specific instructional needs for each individual. In a child guided approach, when the child shows readiness

for interaction, the adult rather than imposing, responds to the child's interest and preferred activity for learning by gently scaffolding the child's learning. This shows respect for the child's integrity as a learner (Bruce et al., 2008). According to Bruce et al. (2008 p.8), "adults do not rush the child to the next stage of development but seek to expand what the child knows to new materials, new people, and new settings in a sensitive manner that respects the child's interests and readiness". This strategy supports the uniqueness of each individual and their specific needs.

Tangible Representation

These are viable and effective communication forms for prelinguistic students who are DB (Bruce et al., 2011; 2008; Trief et al., 2013). These could be object representations and photographs. In a study by Rowland and Schweigert (2000) two- and three-dimensional tangible symbols were utilized, which showed an increase in the number of tangible symbols five children with DB used to express themselves. Trief et al. (2013) in their study examined forty-children ages 3-20. The children were taught naming tangible representations, which showed that there was a positive response to tangible symbols and increased skills at forty-six percent. Heller et al. (1994) provided dual communication board intervention systems with pictures to three students between the ages of 16 to 18, and all three students made increased communication with tangible symbols with 53% to 100% accuracy. Heller et al. (1996) also provided communication boards that focused on messages, greetings, offering of items, engaging in topical conversations, and close interaction with three students one with hearing impairment, DB, and intellectual disabilities.

Communication improved among the students who are DB with 92% and 88% accuracy. Schweigert and Rowland (1992) conducted a study with three students who are DB and introduced microtechnology such as microswitches. Findings showed that the students gained attention using eye gaze, touch, or microswitches to express preference and choice making.

Tactile Approach

Miles (2008) described the significance of hands that is, hands serving as eyes for individuals who are DB. A child with DB through touch and movement follows the information that is being communicated by placing their hands over the signer's hands. Miles (2008) stated that touch is essential for a child who is DB. It gives them the opportunity to tactually imitate and access information. This will establish a mutual interest that could possibly serve as conversational interaction between the child who is DB and the communication partner. Touch cues are a tactile form of communication, for example, while preparing to put on a child's shoes, the teacher may provide an opportunity for the child to touch and feel the shoes while explaining to the child what is about to happen. It is important to note that many children who are DB may often require sign language presented in a tactual form. They may often need instructional materials and approaches that are tactual.

Systematic Instructional Approach

Systematic instructional approach is an approach that is grounded in principles of behavioral theory according to that considers the level of communication for each as well as the symbolization process (Rowland, 2011; Vervloed, et al., 2006). This

strategy increases the rate and variety of communicative intents and or functions children who are DB could express (Brady & Bashinski, 2008; Sigafos et al., 2008). This approach has been useful in increasing the rate of expressive communication, the range of functions expressed, and also the vocabulary expressed forms. It is important in building evidence-based intervention on communication for children and youth who are DB (Bruce et al., 2016). This approach is effective in communication programming for children and youth with DB, however, the instructional goal differs for each individual depending on the child's level of communication and the process of symbolization (Bruce et al., 2016).

Daily Schedules

Daily schedule is known as the anticipation shelf or calendar system (Bruce et al., 2008). Daily schedules are important to learning one's routine, representations of activities within the routine, and left-to-right sequencing. Each trip to the daily schedule provides an opportunity for a conversation. A daily schedule serves as a tool for transition and literacy. It enables the child to learn to anticipate what activity will occur next and be able to have a conversation about the activity (Bruce et al., 2008). It is a means of evoking the expression of different communicative intents and it promotes the development of sharing of memories. The daily schedule represents activities that will occur daily. These routines are important to learn anticipation, and mastery of routine activities and it also reduces the stress experienced by the child.

Story Boxes

These are collections of objects that relate to an experience or a book. While reading a story, the teacher may stop and allow time for the child to handle the objects, name the objects, or use the objects to respond to questions about the text. (Luckner et al., 2016; Texas School for the Blind & Visually Impaired Deafblind Project, 2010). Story boxes are ways a young child with visual impairments experiences a story. It is an early literacy event that can easily fit into daily routines as well as a tool to enhance the learning of concepts (Drissel, 1997). A child with DB, through the experiences of story boxes, gives meaning to their lives through the development of concepts. Items that are used in a story box play the role of bringing the story to life. Story boxes are vital in offering children the opportunity to have a visual and tactile stimulus that allows them to take part in telling or re-telling a story (Sharp, 2005). According to Sharp (2005), story boxes or story bags are a way to involve children with texts, talk, and discussion as well as promote their interest in reading. In addition, story boxes can help students with vocabulary development and making connections between items from a story and their experiences (Collins, 2009). These are some of the effective strategies used in teaching children who DB.

Developing Social Skills for Children with Deafblindness

Social skills are closely connected with language and communication skills making it a challenge for persons who are DB due to their limited communication skills (Reynolds, 2021). For someone to communicate effectively, there is a need for accurate interpretation of both verbal and nonverbal communication. According to

Cook et al. (2008), students with poor social skills are often at risk for internalizing and externalizing behavioral challenges. Behavioral management skills are also required for teaching appropriate social skills (Cook et al., 2008). Children with DB need to be involved and taught specifically how to socialize with people around them to avoid isolation. Sacks and Silberman (2000) stated that because children with visual impairments are at a social disadvantage, specific instruction in social skills is necessary to overcome this challenge. They need systematic and purposeful instruction to learn social skills (Sacks & Silberman, 2000). Students who are DB need to be taught how to initiate interaction, manage their behavioral skills, and exhibit appropriate socially acceptable behavior.

Individuals learn by doing, and social skills need to be learned in a social environment. Students who are DB need to be engaged in role-playing activities to help them learn how to interact. Persons who are DB, especially school-aged children, use touch, taste, and smell to explore objects, understand the relationship of those objects in their learning environment, perceive feelings, act, and communicate. TSVIs need unique strategies to enhance the social skills of students who are DB amidst various tactile communication methods available (Dammeyer, 2010). In fostering interaction among peers, offering opportunities such as class activities can help convey students together, adopt teaching approaches that encourage collaboration among peers, modify curriculum and activities to include students who are DB, and provide positive feedback to encourage students to participate (Miles, 2008). A study by Correa-Torres (2008) described using long conversations with all students in the

classroom about disabilities and distinct learning styles, modeling to students without disabilities, and using helpers as strategies TSVIs, paraprofessionals, and interveners to facilitate socialization among students who are DB and their peers.

Bruce et al. (2016) examined socialization and self-determination in different-age dyads of students who are DB. Many children with CHARGE syndrome, one of the main causes of DB, experience challenges with emotional self-regulation and anxiety that may interfere with socialization. Findings indicated that learning about self-determination skills such as goal setting, problem-solving, and choice-making may improve emotional regulation and social skills in the context of socialization instruction. Nelson et al. (2016) stated that self-regulation is the process through which an individual controls emotions, moods, physiological state, and cognitive experiences. Self-regulation development may be disrupted in children who are DB due to combined losses of vision and hearing resulting in limited exposure to environmental motivations as well as limited ability to perceive how other people react and successfully cope with events (Nelson et al., 2016). To increase self-regulation of individuals who are DB there is a need to include the provision of meaningful and interactive activities, tangible, or visual strategies, such as calendar systems, designed to increase anticipation and make environments more predictable, and calming strategies such as touch, reflection of emotions, and hold (Nelson et al., 2016).

Social-Emotional Development and Social Skills Acquisition

According to Hartshorne and Schmittel (2016), “social-emotional development is the ability to form close secure relationships and to use their emotions productively in interactions with others” (p.445). The environmental experiences babies have as they grow and develop are important influences on their emotional and social development. Infants begin to develop the skills needed for self-regulation even before they are born (Hartshorne & Schmittel, 2016). Babies can feel interest, distress, disgust, and happiness from as early as birth. They can also communicate these feelings through their facial expressions and body posture. Infants can begin to show a spontaneous social smile around 2 to 3 months of age and begin to laugh spontaneously around 4 months of age (Pathways.org, 2020; Rudy, 2020). Also, between ages 2 and 6 months, infants express other feelings such as anger, sadness, surprise, and fear.

Between ages 5 and 6 months, babies begin to exhibit stranger anxiety and they can show this discomfort visibly (Pathways.org, 2020; Rudy, 2020). Hartshorne and Schmittel (2016) stated that in the process of development, children acquire the skills they need for receiving and interpreting the information they obtain, choose the kind of responses they display to events as well as manage their triggers. However, during this time babies are learning not only how to show their feelings, but also how to notice others' feelings. At 4 months of age, infants can begin distinguishing the different emotional expressions of other people around them. At 6 months, they begin

to imitate the emotions and expressions they see in other people (Rudy, 2020). These are necessary skills required for socialization.

When compared to children with DB, Hartshorne & Schmittel (2016) explained that children who are DB have trouble with social and emotional development due to a lack of communication skills and access to information from the environment, a problem with decision-making skills, self-management skills, problem-solving skills, and lack of peer relationships. Some of the risk factors for poor emotional development include genetic risk, sensory impairment, family stress, lack of resources, challenging behavior, and problems with self-regulation and self-monitoring (Hartshorne & Schmittel, 2016). Many children who are DB take a long time to learn about emotions. They often have the challenge and struggle of identifying emotions, both in themselves and the people around them. Some may have negative self-esteem because they may not have a lot of friends and are not interacting as much as needed to build skills necessary for social interaction (Natasha, 2012).

According to Gleason (2008), by encouraging the use of all sensory information the child can be encouraged to learn to use residual vision and hearing for functional activities, and to interpret the limited sights and sounds that are available to them. Gleason (2008) also suggests approaching the child gently to let the child know you're available for interaction, rather than surprising the child with unexpected or abrupt touches or sounds. Attend to and imitate any actions and sounds, invite him to take turns and let them know you share in their interests. It is important to offer

consistent touch and object cues when interacting with a child who is DB to signal the beginning of an activity and use movement and body contact during interactions.

Sensory Systems Development and Social Skills Acquisition

Development of a sensory system for typical babies begins at 0 to 3 months, while lying on their back, attempting to reach for a toy held above their chest, they can visually track a moving toy from side to side. While lying on their back, they can keep their head centered to watch faces or toys (Pathways.org, 2020). Typical babies can be calmed with rocking, touching, and gentle sounds. They can enjoy a variety of movements, and at 4 to 6 months they can use both hands to explore toys. Infants are generally happy when not hungry or tired will bring their hands and objects to their mouths (Pathways.org, 2020). They can calm with rocking, touching, and gentle sounds. From 7 to 9 months, they can use an increased variety of sounds and syllable combinations in babbling, they can look at familiar objects and people with names and can recognize the sound of their name. They can also participate in two-way communication, follow some routine commands when paired with gestures and show recognition of commonly used words, and imitate sounds (Pathways.org, 2020). At 10 to 12 months children can enjoy listening to songs, explore toys with fingers and mouth, and crawls to or away from objects the baby sees in the distance. At about 12 to 18 months children can help with getting dressed and undressed, may establish a regular sleep schedule, and eat an increasing variety of foods (Pathways.org, 2020).

In terms of developmental stages of children who are DB, there is little or no study specifically for their stages of development. Natasha (2012), children who are

DB have significant vision and hearing loss and therefore, cannot use any of these essential senses as a primary mode of learning. Children who are DB use some of the same techniques used by children who are deaf or children who are blind. They use braille to read and use sign language to communicate with others. When they want to get a message across, they use American Sign Language (ASL) and sign just like any child who is deaf. When they want to understand information, others are trying to convey to them, they have an interpreter who communicates back to them with any mode of communication they can use and understand (Natasha, 2012).

Neurological and Cognitive Development and Social Skills Acquisition

Newborns interact and learn about the environment through what is called reflexive behaviors (Lefa, 2014). This means that babies often may not think about what they are going to do, instead, they follow their instincts and involuntary reactions to obtain their needs, for example, food, air, and attention. According to Lefa (2014), babies begin to grow and learn about their environment through their senses, they engage in what is called intentional, goal-directed behaviors. This means that they are more concerned about tasks to accomplish, how they can accomplish the tasks, and finally, they get involved and ensure it is done. This is also the stage infants develop object permanence, (the ability to understand that something still exists even if it can't be seen). These two milestones, goal-directed behavior, and object permanence are the highlights and major accomplishments of infant cognitive development for typical babies (Lefa, 2014).

For children who are DB according to DO-GEENENS (1999), the process of cognitive development is skewed due to severe limitations in acquiring languages. The lack of adequate distance senses reduces the input to the brain greatly. Individuals born deaf and blind may often experience significant delays because they are not able to observe and learn about their environment like other sighted or hearing infants. Object permanence, the knowledge that objects continue to exist even when they are hidden, appears to be a difficult task for infants that are DB because they can only learn about their environment that is within their reach (DO- GEENENS, 1999). Children who are DB spend more of their time in a resting position, which resorts to self-stimulating behaviors instead of exploring their environment due to limited vision and auditory clues. According to Natasha (2012), some of the impacts DB has on cognitive skills include lack of access to information, limited incidental learning, perceiving the world differently, challenges in concept development, difficulty in generalizing, and relying on concrete learning strategies.

Components of Social Skills for Children Who are Deafblind

Children with disabilities, including those with DB, need to be taught how to appropriately interact with their peers and others. There are different components of social skills necessary for developing appropriate social interaction. Among many others are initiating interaction, managing a personal emotional state, responding to others, understanding reciprocity, and sharing in activities (Bruce et al., 2016; Hartshorne & Salem-Hartshorne, 2011). According to Bruce et al. (2016) and Haring et al. (1995), students' communication needs, interests, preferences, and most effective

activities must be considered when providing social skills instruction. This will be valuable in building skills for initiating interaction. Janssen et al. (2003) examined six children ages 3 to 9 years, 14 educators, mothers, and caregivers, and provided them with intervention strategies such as initiatives, confirmation, answers, turn-taking, attention, regulation of the intensity of the interaction, affective involvement and sharing of emotions, and independent acting. Findings showed that educators improved in all targeted behaviors. The children also improved in almost all targeted behaviors with the most improvement sustained in follow-up. Figure 3 depicts components necessary for the development of social interaction for students who are DB see (Figure 3).

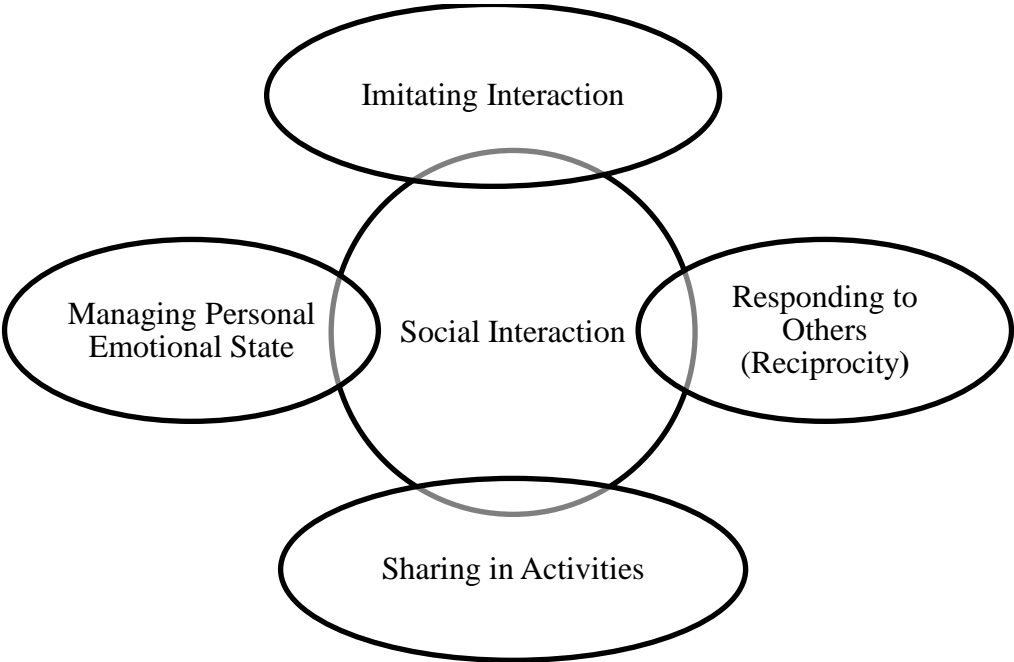


Figure 3. *Skills necessary for social interaction for students who are DB*

Initiating Interaction

Children with DB may have trouble initiating conversation if they are not aware of the people around them. This may result in the child being socially passive than risking being ashamed (Bishop, 1996; Parker, 2009). There are many ways students who are DB can initiate communication or interaction. Some of which are through expressive and receptive communication forms, including objects, partial objects, textures, photographs, line drawings, gestures, sign language, and speech-generating devices (Nelson, 2019). Picture Communication System (PECS) is one of the ways students who are DB who may have some residual vision can be encouraged to start a conversation with people around them. Studies have shown that PECS, with minor adaptation, has been successful with students who are DB making functional communication and initiating interaction (Bracken & Rohre's 2014; Parker et al., 2010; Parker, 2017; Parker, 2009, Parker & Ivy, 2012,). This skill is necessary for communication and socialization as it would decrease challenging behaviors among students (Bracken & Rohrer, 2014; Parker, 2009). PECS improves functional communication and helps the individual to make an independent request from the communication partner (Bracken & Rohrer, 2014; Parker, 2009).

There is also effective use of tangible symbols and objects in establishing interaction and communication with others. (Nelson & Bruce, 2019; Rowland & Schweigert 1989; Turnell & Carter 1994). Tangible representations include photographs, pictures, objects, and partial objects (Nelson, 2019). When teaching a child who is DB, it is necessary to consider the capability of the child. If the child can

use gestures like head nodding or shaking, pointing, or shoulder shrugging if the child can orient their body towards a person. If the child will be able to make facial expressions to indicate her feelings if the child's posture can communicate interest or disinterest (Wolffe et al., 2000). These are some of the behaviors to consider when teaching a child with DB how to initiate interaction. When they interact with other individuals around them, they are faced with others' emotional reactions and their reactions.

Managing Personal Emotional State

Children with DB are faced with challenges of emotional regulation and the management of their emotional state. This includes difficulty monitoring and managing their behavior, and its effect on other people around them (Bhargava, 2022; Conroy & Sellers, 2001). They also have issues with controlling their impulsivity (Hartshorne & Salem-Hartshorne, 2011). In addition, children with vision impairments often have difficulty interpreting body language and monitoring their behavior in social situations (Erwin, 1993). The way children with DB may behave in response to a lack of information may often be interpreted as intentionally bad or inappropriate behavior. These behaviors are, instead, natural expressions of distress caused by feelings of fear, confusion, anxiety, frustration, and helplessness. These expressions are often displayed in rejections, refusals, or aggressive and self-injurious behaviors. It is important to consider if the child can identify and label their personal feelings.

According to Hartshorne and Schmittel (2016), communication and sensory information are critical in learning to regulate emotions and emotional self-regulation

is particularly critical to social-emotional development. Some of the behaviors that result from dysregulated emotions can include high levels of anger, aggressive-disruptive behaviors, antisocial behaviors, addiction, suicidal ideation, and depression (Hartshorne & Schmittl, 2016). Children with DB that cannot manage their thoughts, emotions, behaviors, and physiology may not be able to learn from typical interactions and may not learn to develop advanced functioning (Hartshorne & Schmittl, 2016).

Self-determination plays an important role in managing the emotional state of children with DB. It is also important to identify if the child with DB can perceive and label the emotions of others by sensing when another person is angry by the tone of voice or body language (Bhargava, 2022; Bloom & Bhargava 2004). Having the child learn what triggers their emotions can help the child in avoiding triggers and managing their emotions (Bloom & Bhargava, 2004). Children with DB will need to be prompted to increase their awareness of their emotions and behavior. According to Bloom and Bhargava (2004) and Sacks and Silberman (2000), strategies such as audiotaping, videotaping, role-playing social situations, and individualized stories can promote thinking, self-evaluation and planning by the student. Being aware of their emotions can help the students to better manage their emotions and know when to respond to other individuals.

Responding to Others (Reciprocity)

Children who are DB like every typical child require interaction to learn and grow (Hartshorne & Schmittl, 2016). Stress and isolation among children with DB are caused by limited communication, mobility, and access to environmental

information (Hersh, 2013). According to Bruce et al. (2016), children who are DB also have difficulty responding to a communication partner due to limited attention and a partner who was not responsive at that moment. Peer rejection is one of the barriers that limit children with DB from interacting with other people (Hartshorne & Schmittel, 2016; Mar & Sall, 1995). Reduced awareness of the environment, social feedback, and social cues make it challenging for children with DB to respond to interactions (Hartshorne & Schmittel, 2016).

Responding and reciprocating to peers and other individuals is necessary for developing appropriate social skills. This will require the communication partner to learn specific forms of expression like touch cues, and tactile signs depending on the form the child with DB uses (Mar & Sall, 1995). These forms of expression may inhibit spontaneous interaction. This limits the child with DB from the opportunity to participate in natural activities, develop social relationships and form social networks (Mar & Sall, 1995). Interacting with other individuals will create the opportunity for children with DB to develop emotionally and socially (Hartshorne & Schmittel, 2016).

It is important to understand that play is one of the ways to increase social interaction among children who are DB. According to Hartshorne and Schmittel (2016), play is critical to a child's social and emotional development. Children interact with each other when they engage in play. This could foster reciprocity and develop their turn-taking skills required for appropriate socialization. Children with DB could learn more social skills incidentally when they play with other children (Hartshorne & Schmittel, 2016). When children who are DB engage in play with other children, they

observe how other children use social skills and manage their emotions, and they as well can imitate them through play (Hartshorne & Schmittl, 2016). Mutual play may pave a way for active participation and sharing in activities with peers and other individuals.

Sharing in Activities

Extending from reciprocity, children learn how to engage in turn-taking and sharing toys, objects, and activities with others during play. Studies have shown that recreational activities are beneficial to children who are DB in terms of socialization, and physical health (Lieberman, 2002). Sharing in activities can be instrumental in reducing physical, social, and psychological isolation (Haring et al, 1995; Mar & Sall, 1995; McInnes, 1999). Arndt et al. (2004) explained that physical activities can be a valuable strategy when children who DB participate with others. A study by Janssen et al. (2010) examined two children who are congenitally DB and provided interventions such as initiatives, confirmations, answers, turn-taking, attention, regulation of the intensity of the interaction, affective involvement and sharing of emotions, and independent acting. Findings showed that children made gains in initiative and turn-giving as well as an increase in shared affect.

In establishing and engaging children who are DB in activity sharing, enough time for exploration and instruction becomes essential (Arndt et al., 2004). There is the need for careful planning for extra time for children who are DB both in initiating and responding to interactions as well as taking instructions (Best et al., 2002; Downing & Chen, 2003). It is important to allow enough time for children to process

the information they have received before the activity. This will facilitate the development of trust with the partner and will enhance their confidence and sense of security. Allowing enough time for children to explore the environment and understand the activity will improve their skills in socialization and self-determination (Arndt et al., 2004). Planning for frequent breaks for these children will improve their knowledge of the skills needed for the activities. Another factor when planning to engage children who are DB in activity sharing is the resources that are essential to their specific needs. According to Arndt et al. (2004), essential resources comprise a collaborative educational team that can contribute meaningfully to establishing valuable programs and activities that children with DB can share in.

Socials Skills as a Component of the Expanded Core Curriculum (ECC)

Expanded Core Curriculum (ECC) is a set of components of a curriculum that needs emphasis for school-aged children who are DB to increase their independent lifestyle during adulthood (Allman, & Lewis, 2014; Haegele et al., 2014; Sapp & Hatlen, 2010). ECC targets areas of functional skills development for students who are DB as well as students who are deaf and/ or blind to enable them to access the curriculum. This will help in identifying specific areas of need within the student's individualized Education Plan (IEP) (WESP-DHH Outreach, 2022). There has been an emphasis in the field of visual impairment on ECC for children with DB. The ECC educational components include orientation & mobility, recreation, socialization skills, career awareness, technology, compensatory skills, sensory efficiency skills, independent living skills, and self-determination (Lieberman & Linsenbigler 2017).

Social skills are a component of the ECC because children with DB often require specific intentional instruction to comprehend the details of how to interact with people around them. Social interaction development skills are related to interpreting and using body language and other nonverbal communication, appropriate, social communication strategies, conversation patterns, and interactions; developing friendships and relationships; and monitoring one's social behavior (Lewis et al., 2014). Most social skills are learned through visual observation and auditory tracking, making the skills necessary to be taught explicitly to children who are DB.

Social skills are best taught by the TSVIs who are aware of the social gap and its impact on the understanding and development of students with both visual and auditory loss. In achieving socialization, skills such as turn-taking, understanding feelings of self and others, and social concepts among other skills are very essential. The more children with sensory impairments have the opportunities to improve on the skills of interaction from recreational experiences, the more foundational skills improve, and they may be more active as an adult (Haegele et al., 2014). Lieberman (2017) discussed that teaching appropriate recreational activities can facilitate independence, self-confidence, and socialization among children with DB.

Social skills have been extensively studied in children with other disabilities, however, there is little research on the social skills development of children with DB. (Bruce et al., 2016; Ferrell et al., 2014). Bruce et al. (2016) examined socialization and self-determination in different-age dyads of students who are DB. However, they recommend that a study should be done on the area of strategies and support of social

interaction among children with DB. Mar and Sall (1995) stated that there have been studies on social relationships of individuals with disabilities, however, only little focus was on social skills and social relationships of individuals who are DB. Over a decade later, Hartshorne and Schmittel (2016) stated that little has been written about the social-emotional development of children who are DB. They indicated that young children with developmental disabilities have, in general, been found to have significantly delayed social-emotional development relative to their peers, particularly in terms of social interaction, independence, and engagement.

Another study by Dyzel et al. (2020) specifically looked at research that focused on the use of assistive technology to promote communication and social interaction for people with DB. Findings indicated that assistive technologies aim to improve two-way communication, and more access to information, however, more research is needed to improve advanced technology to improve interaction. Brady and Bashinski (2008) presented findings on increasing communication in children with concurrent vision and hearing loss. There was an increase in the rates of initiated, intentional communication and new forms of gestures among all participants. They stated that there is a critical need for research on effective strategies for communication to foster socialization and learning for children with severe and multiple disabilities, including concurrent hearing and vision losses. Janssen et al. (2002; 2003a; 2003b) examined the effects of an educator-oriented program to enhance social interactions between children who are DB and their educators. Results showed that interactive appropriate behaviors increased in three out of the four

children and inappropriate child behaviors decreased due to improvement in the educator behavior. They stated that professional educators, including TSVIs and paraprofessionals, were faced with the problem of interacting with children who are DB; thus, the need for research in social interaction for children who are DB. None of these studies has explicitly focused on the experiences of TSVIs teaching social skills to children who are DB.

Luckner et al. (2016) explored a summary of communication and literacy evidence-based practices for students who are deaf or hard of hearing, visually impaired, and DB. They stated that visual or hearing impairment or combination of both of any type of degree potentially inhibits typical ways of interaction and learning, therefore professionals need to examine learning environments as it affects students' learning. Vervloed et al., (2006) examined the interaction between a teacher and a child who is congenitally DB. It was observed that a limited portion of time was devoted to communication and interaction between the child and the teacher. The study stated that the interaction between the child and the teacher was approximately equal. They recommended that more research should be done in the area of interaction between children who are DB and their teachers and or parents. Bruce et al. (2007) with regards to interaction skills examined gestures expressed; its topography, frequency, and functions by seven children who were congenitally DB. Results showed that the children who are congenitally DB through the use of physical touch expressed a variety of gestures to establish and maintain joint attention. They stated that further research is needed for instructional strategies that would promote gestural

development among children who are DB. Also, there is a need for research to fully capture rich gestures that children who are DB express.

A consistent conclusion from studies across the past 30 years indicates more research is needed to further examine socialization and learning for children with DB. This includes effective instructional strategies TSVIs utilize when effectively teaching social skills. It is, therefore, necessary to explore the experiences of TSVIs as they provide instruction to children with DB. Currently, no study has specifically focused on the experiences of TSVIs teaching social skills to children with DB. To bridge this gap in the literature, this study aims to explore the experiences of TSVIs' teaching social skills to children with DB. Gaining insight into the experiences of TSVIs will provide information on understanding their views, strategies, and challenges, as well as support/resources available, in providing instructions to students who are DB.

Summary

The chapter reviewed literature that is concerned with the issues of DB and how DBs can be understood. It also reviewed the literature concerning areas of issues and challenges those individuals who are DB face, communication, mobility, support services for individuals who are DB, inequality, unemployment, poverty, and mental health issues among individuals with deafblind. This chapter also explored literature on the kind of instructional strategies that are utilized by TSVIs of students who are DB, the issue of social skills; acquisitions of social-emotional development and social skills, sensory systems development, and neurological and cognitive development of children with DB. this chapter also discussed components of social skills such as

initiating interaction, managing personal emotional state, responding to others (reciprocity), and sharing in activities, as well as social skills a component of the ECC. Additionally, a result of the literature demonstrated that a need to study social skills of children who are DB. The research questions that guided this study are as follows:

1. What components of social skills do TSVIs perceive to be effective when teaching children who are DB?
2. What teaching strategies TSVIs perceive as the most effective when teaching children who are DB social skills?
3. What issues do TSVIs perceive to be more challenging when teaching social skills to the students?
4. What kind of resources and support do TSVIs perceive to be more appropriate while teaching children who are DB social skills?

CHAPTER III

METHODOLOGY

Background of the Study

This study is designed to explore teachers of students with visual impairment (TSVIs) experiences teaching social skills to students with deafblindness (DB). The foundation for this study focused on the phenomenological perspective of TSVIs teaching students who are DB and their instructional strategies for teaching social skills. This methodology section explained this study's research design and analysis procedures. The rationale for the study, the context of the study, data sources, methods of data collection, data analysis, data management, as well as trustworthiness, transferability, and ethical issues were discussed.

Research Questions

As discussed in the literature review, social skills are essential for interaction, and it has been established that lack of social interaction may result in isolation and a range of mental health issues including anxiety, depression, anger, and feelings of low self-esteem (Harada et al., 2008; Ingraham, 2007; Moller, 2003). Given the problems that may emanate from lack of socialization, this study seeks to explore TSVIs' experiences teaching social skills to students who are DB.

The research questions that guided this study are:

1. What components of social skills do TSVIs perceive to be effective when teaching children who are DB?

2. What teaching strategies TSVIs perceive as the most effective when teaching children who are DB social skills?
3. What issues do TSVIs perceive to be more challenging when teaching social skills to the students?
4. What kind of resources and support do TSVIs perceive to be more appropriate while teaching children who are DB social skills?

Rationale of the Study

Students with multiple sensory impairments are at a higher risk of social isolation, rejection, and/or being ignored by peers, which often results in mental health issues (Ingraham, 2007). Appropriate peer interaction improves the mental health of students. The strategies used to address social skills significantly impact how students who are DB interact with others. However, past research has consistently indicated that individuals with disabilities such as DB have difficulty communicating, finding information, and moving around their environment (Aitken et al., 2013). This creates a social skills deficit which results in social isolation and a range of mental health issues. Disabilities cause many individuals life stress, resulting from limitations in their daily living and increased mental health conditions. Ingraham (2007) postulated that lack of social interaction may later result in a range of mental health problems, identity issues, and low self-worth for the individual who is DB, and may result in the feeling of shame and guilt for the parents. It is important to discuss specialized instruction for children who are DB regarding their involvement in social activities to reduce social isolation.

Teaching students who are DB requires specialized training and modified teaching strategies. Luckner and Carter (2001) explained that the most highly ranked competencies of TSVIs teaching children who are DB involves teaching techniques, classroom environment, teaching strategies, and collaboration. Cooperative learning strategies, problem-based learning, inquiry-based learning, differentiated instruction, have also been identified as effective teaching strategies for individuals who are DB (Ewing, 2011). Teachers of students who are DB require highly specialized skills to teach students who are DB, hence, the need to understand the experiences of TSVIs teaching students required specialized skills to socialize with other individuals.

Research Design

A research design refers to the type of inquiry the researcher chooses to provide direction for the research procedures (Creswell, 2014). A research design is a plan developed by a researcher to address the research questions and purpose of the research (Patton, 2015). This study aimed to explore the unique experiences of TSVIs who work with students who are DB. The study focused on the experiences of TSVIs teaching social skills to students who are DB. The study employed a qualitative design that consisted of individual interviews. According to Jones et al. (2006), qualitative approach guides the method of data collection, analysis, and reporting in a heuristic phenomenology. A qualitative approach is most appropriate to capture the unknown aspects of the unique experiences shared by a small portion of the distinctive educational field of teachers of individuals who are DB.

To address the research questions posed in this study, it was necessary to employ a qualitative approach to deeply understand the experiences of these teachers. This qualitative investigation identified meaningful experiences of TSVIs teaching students who are DB. Individual interviews with TSVIs identified rich descriptive information associated with the experiences of teaching social skills to students who are DB. Using a qualitative approach allowed the researcher to obtain rich and thick descriptions of the phenomenon that has not been widely investigated (Creswell & Creswell, 2018). This provided a strong foundation for gaining an understanding of the experiences as reported by the participants and the meanings each participant ascribed to their experiences (Litchman, 2014).

Qualitative researchers are interested in capturing participants' points of view through interviewing and observation, emphasizing the goals of discovering and describing and using research questions and contexts to better understand the event of interest (Heppner & Heppner, 2004; Lichtman, 2014). Participants provided their perceptions and details based on experience and were not constrained by specific questions as applicable in a quantitative research method. This open exploration of the events allowed the participants to convey information that was related to their experiences, beliefs, attitudes, and perceptions. This flexibility in the research design allowed for deeper exploration and clarification of the participants' responses. This research design allowed for a deeper probe into the experiences of TSVIs teaching students who are DB. Capturing the feelings and emotions expressed as part of the

participant's experiences provided an insightful connection and understanding of the reported data to the reader (Lichtman, 2014).

Context of the Study

This study was conducted in the southwestern part of the United States. The region was selected due to access to the targeted population of TSVIs teaching students who are DB. The interviews were conducted through Zoom.

Data Sources

Participants

This study recruited 11 participants who met the selection criteria. The following criteria identified participants who were qualified for the study: TSVIs who had or are currently teaching students who are DB, and the years of experience. TSVIs teaching students who are DB Criteria: This criterion identified TSVIs who had taught or are currently teaching students who are DB and are currently employed in a southwestern state in U.S. Most of the participants hold an active certification status, are currently employed, and are certified TSVIs. Years of Experience Criteria: Participants have at least 1 year of experience teaching children who are DB.

Sampling

This study utilized purposive sampling in selecting participants for the study. This means that the researcher was selective in choosing participants for the study as stated (Creswell & Poth, 2016). A purposive sampling strategy was appropriate for this study because the research questions targeted a specific group of TSVIs who are

teaching a unique population. This strategy was suitable for gathering in-depth data to understand the experiences of TSVIs because students with deafblindness are a unique population that require a specialized group of teachers for instruction. These teachers have specific characteristics which made them unique in their teaching. In addition, purposive sampling allowed the researcher to gather specific qualitative responses, which led to better insights and more precise research findings.

The researcher recruited 11 TSVIs that are currently teaching social skills to students who are DB. This size of participants is within the number emphasized for phenomenological studies (Creswell & Creswell, 2018). The following qualitative studies that focused on the experiences of teachers also interviewed a sample size of 8-12 teachers (Ballet & Kelchtermans, 2009; Hall, et al., 2016; Yaşar & Amac, 2018; Ziaian-Ghafari & Berg, 2019). Of the 11 participants, 10 are female, and 1 male.

Data Collection Procedures

Data collection began upon receiving approval from the Texas Tech Human Research Protection Program. The researcher sent an email to the vision consultants at the Educational Service Center (ESC) regions. The vision consultants forwarded the email to the TSVIs in the region. Upon receiving responses and contact information from the participants who had indicated their interest in the research, the researcher sent an invitation to the participants in the study through email explaining the study and the informed consent which the participants voluntarily signed and emailed back to the researcher. The researcher sent another email to the participants to schedule a time for the interview. The researcher also used snowballing strategy as part of the

recruitment process. Four of the participants who were interviewed by the researcher contacted their colleagues they knew were eligible for the study. The invitation included a brief overview of the study, the criteria required for participation, informed consent, and the researcher's contact information for questions.

Data was collected using semi-structured in-depth one-on-one interviews via Zoom. Semi-structured interviews were utilized in this study to answer the study's research questions. The intent of a semi-structured interview "is to capture the unseen;" and to investigate "how respondents think or feel about something" (Glesne, 2016, p. 134). Interviews are important to qualitative research because knowledge is constructed through interaction between the participant and the researcher (Brinkmann & Kvale, 2015). Semi-structured interviews allow for the opportunity for the interviewer to ask additional questions based on what the interviewee says, it also provides more flexibility in the order in which the wording of the questions is considered, and the questions are asked (Berg & Lune, 2012). This study followed the seven stages of the interview inquiry protocol which are theming the inquiry, designing the study, interviewing, transcribing interviews, analyzing the data, verifying the validity, ensuring reliability, generalizing the findings, and reporting the study (Creswell & Poth, 2016).

Semi-Structured Interviews

Semi-structured interviews consist of a general set of questions pre-developed by the researcher to outline the format and guide the flow of the interviews with the flexibility to adapt the questions as the situation demanded (Lichtman, 2014).

Interviews are interactional conversations that provide a way of generating data (Gubrium & Holstein, 2003). The interview was conducted via Zoom to understand the experiences of TSVIs teaching social skills to students who are DB. Seidman (2006) stated that at the root of in-depth interviewing is an interest in understanding the experiences of the people and the meaning they make of that experience. The researchers sought approval from the participants to record them through Zoom and they consented. Interviews were recorded through Zoom and transcribed by the researcher. The identities of the participants and their locations were assigned fictitious names for confidentiality purposes. In addition, the researcher observed the participants during the interview and documented any additional information, for example their body language and nonverbal cues. Observations are the exchange of information through non-linguistic signs (e.g., gestures, body language) (Lincoln & Guba, 1985). Nonverbal cues that the participants may reveal during the interview may be important information in the case of a disjunction between the nonverbal behaviors and the spoken word. “Nonverbal cues are best used in a supplementary fashion to flag items of information that require more detailed attention later” (Lincoln & Guba, 1985, p. 276). The researcher observed the participants body language and nonverbal cues and journaled as they proceeded with the interview. The interview was within 45 to 60 minutes. The interview protocol can be found in Appendix A.

Journal

Reflective journaling is an important element of data collection in a qualitative study. Clandinin and Connelly (2000) noted that collecting multiple sources of

information in a qualitative study helps clarify meanings in the data sets. Reflective journaling provides an additional outlet for the interviewer to note relevant thoughts, memories, and information relevant to the study (Clandinin & Connelly, 2000). The researcher maintained a journal throughout the study. The purpose of using a journal was to provide the researcher with an outlet to archive any thoughts, responses, personal bias or emotions during the study. The journal was utilized as individual data and was coded as part of the data analyzed. The process of reflective journaling is an important component of the dependability of a study (Creswell & Poth, 2016; Lincoln & Guba, 2015; Saldaña, 2016). In this study, the researcher documented specific thoughts, information, and analysis that occurred throughout each stage of data collection. For example, the body language and non-verbal cues of the participants were documented in the journal during the interview stage. During the data analysis, the notes taken by the researcher were incorporated into the analysis by comparing the information the participants provided with their disposition.

Data Management

The data management plan (Huberman & Miles, 1994) was concerned with participants' confidentiality and the accuracy of the data collected. Each participant was assigned a pseudonym. The participants' true identities were not recorded in any of the results that were made public. The researcher created passwords to protect all electronic data on the laptop. For the purpose of accuracy, following each interview, the researcher personally transcribed and reviewed each interview for accuracy. Transcriptions from the recorded interviews, raw data from the Zoom recording, and

the research journal compiled by the researcher during the interview are in the possession of the researcher, protected by a password on the researcher's computer, throughout the duration of the study. Upon completion of the study, the researcher will delete all digital recordings and will preserve the transcriptions for up to 3 years before deleting.

Ethical Consideration

All steps required to avoid any sense of ethical impropriety by adhering to the requirements established by the Human Protection Program at Texas Tech University were taken by the researcher. The researcher used participants pseudonyms to protect their identity. Data were stored in a passworded laptop. The researcher alone had access to the data collected. The participants were reminded of their right to discontinue if they had wished to do withdraw from the study.

Data Analysis

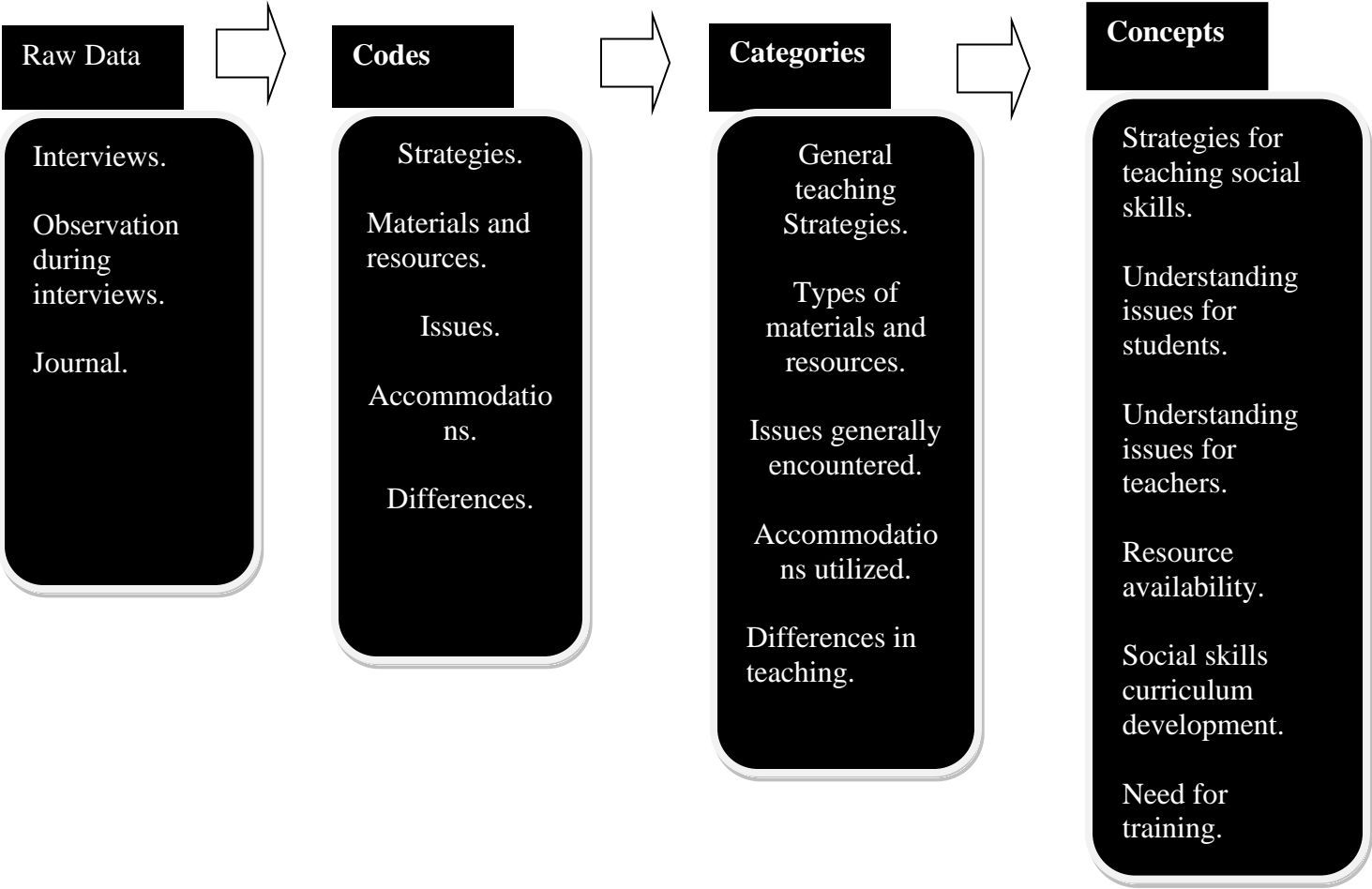
Thematic data analysis was used to identify categories and patterns of meaning across the data set that provided answers to the research questions being addressed. Thematic data analysis is appropriate for questions related to people's experiences, or people's views and perceptions, such as experiences of TSVIs teaching social skills to students who DB. Data analysis in a qualitative study are said to begin as the data unfolds during data collection (Creswell, 2014). The interview recordings were transcribed and read numerous times by the researcher. Then coding started as the researcher continued to read the transcript and gathered both similar and dissimilar information provided by the participant about their experience. Themes and subthemes

emerged from the codes which were reported in the result. Creswell (2014) explains that data analysis is a process that involves taking apart data and putting it back together. Data analysis is a complex process that involves organizing data, conducting preliminary analysis, coding, organizing themes, representation, and finally interpretation (Braun & Clarke, 2006; Patton, 2015). Emergent themes are reported through rich, thick descriptions of experiences, as told by participants, to convey a deeper meaning of an individual's perception as it relates to the phenomenon (Lichtman, 2014).

For this study, the data analysis procedure incorporated Lichtman's three C's (codes, categories, concepts) of data analysis. This includes collection of data through interview, followed by coding, categorizing, and identifying concepts.

Figure 5 depicts the summary of the data coding, stating from the interview raw data that was gathered through interviews, observation of body language and journaling. The researcher listened to the Zoom recording several times and transcribed them accordingly. This was followed by the generation of codes through open and axial coding that was discussed in this section. These coding formed categories that generated into concepts.

Summary of the Data Analysis



Coding

Coding is the process through which data is organized and classified into categories (Patton, 2015). To code data in qualitative research means the researcher is generating an interpretation of the data into a broad category (Saldaña, 2016). According to Grbich (2013), the data coding process means the researcher is dividing, grouping, reorganizing, and linking data together to consolidate meaning and develop an understanding of the data. The researcher first arranged the data in an Excel spreadsheet systematically after transcribing. The researcher then organized the data from the interview transcripts using open coding in the Excel sheet based on the questions asked during the interview. The researcher generated codes from the data such as strategies, materials and resources, issues, accommodations, and differences in teaching students.

Open Coding

In this study, the researcher first used open coding to organize the data into broad categories. Creswell and Poth (2016) stated that open coding codes the data into the dominant categories of information. The open coding process was important to data analysis because it assisted the researcher in generating broad categories within the data set (Cohen et al., 2018). The broad categories enabled the researcher to evaluate and analyze the data into specific groupings based on criteria such as frequent words, themes, or concepts within the data (Cohen et al., 2018).

After reading the transcripts numerous times, the researcher then organized the data in an excel spread sheet making a column for the questions asked, different columns for each participants names and their responses based on the question asked. These formed into broad categories such as general teaching strategies used by the participants,

types of materials and resources available for participants, issues encountered by the participants and the students, accommodations that are commonly used by the participants, and differences in teaching different students. These categories were further utilized in the axial coding stage as the focus was on the research questions of the study.

Table 2: Broad Categories and Examples

Broad Categories	Examples
General teaching strategies used by the participants	Role-play, tactile signing, hand-under-hand, peer-to-peer interaction, problem-solving, real-life situations, turn-taking, repetition, conversational and verbal skills, hand-over-hand.
Types of materials and resources available for participants	Perkins School for the Blind, American Printing House for the Blind, Education Service Centers.
Issues encountered by the participants and the students	Communication barrier, multiple/additional disabilities, expectations of parents and others, Time constraints and large caseloads, lack of assistive technologies.
Accommodations that are commonly used by the participants	Tactile Sign/Objects, Braille devices/Communication Boards, Magnifying tools, FM systems, Large Screen Laptops.

Axial Coding

After the open coding process, the researcher employed axial coding. In axial coding, the researcher utilized the categories of open coding, identified the central experiences, and then returned to the data to identify strategies or actions employed, context, and issues. The axial coding process connected the categories to the central focus of the study which was the research questions. Axial coding's primary purpose was to assist the researcher in identifying which codes from the open coding process were most dominant and which was less dominant based on the research questions. In the same excel sheet, another sheet was opened and the researchers created a column for the research questions followed by columns for each response that addressed each of the research questions. This process filtered the codes into the best representation of the data as seen in the result section. The researcher identified strategies for teaching social skills, issues both students and the TSVIs encountered, resource availability, social skills curriculum development, and the need for specialized training for TSVIs. These themes were identified as the central phenomena of the study describing the experiences of the participants as it relates to their teaching of students who are DB.

Saturation

Data saturation is a key concept of qualitative research (Creswell & Poth, 2016). It is used to determine when the researcher has attained enough information from participant responses to decide that no further data gathered would add substantial discrepancies to the data already collected. The principle of qualitative research is used to help the researcher recognize when no further data collection or analysis is necessary

because of the redundancy of the primary themes already established from the data set (Creswell & Poth, 2016).

After interviewing eight of the participants, it was clear that the information provided was similar and redundant. Three more participants were interviewed to confirm the saturation of information received from all the previous eight participants. The data generated from the three participants confirmed the redundancy of the information that was gathered from the interviews. At this point, the data collection process reached its saturation point which ended the interview process. No new information was gained after interviewing all 11 participants.

Member Checking

Member checking is a trustworthiness technique that improves the credibility of research (Lincoln & Guba, 2015). It is the practice of “sharing interview transcripts, analytical thoughts, and/or drafts of the final report with research participants” (Glesne, 2016, p. 38). In establishing the credibility of this study, the researcher provided an opportunity for the participants to confirm the accuracy of the data recorded (Lincoln & Guba 2015). Interview transcripts with interview protocol were emailed to the participants for member check which was to clarify and validate the information they provided through interviews. The participants reviewed and confirmed the accuracy of the information they provided during the interview.

To ensure that participants’ thoughts are clearly captured and represented in the study, it is essential that member checking be utilized (Lincoln & Guba, 2015). This allowed the participants to correct any error in the information that has been transcribed to avoid any misunderstanding.

Trustworthiness and Transferability

Trustworthiness in a qualitative study is a critical component that establishes the soundness of the study (Patton, 2015). In this study, multiple strategies were used to ensure the accuracy of the findings. The strategies are credibility, transferability, confirmability, and dependability (Patton, 2015).

Credibility

Credibility is concerned with producing research findings that can be trusted and reliable (Patton, 2015). It is the confidence the researcher has in the accuracy of the research findings. In establishing the credibility of this research, the researcher utilized member checking to ensure that the information from the data collected was reviewed by the participants to ensure accuracy. Member checking involved the researcher engaging with the participant by asking questions relating to accurate interpretation of the participant's input (Creswell & Poth, 2016). This was done through emailing the participants the transcripts.

Transferability

Transferability has to do with making sure that the findings of the study are produced in a way that can be generalized to other studies and contexts (Creswell & Poth, 2016). The researcher used purposive sampling to gather data. To ensure transferability, purposive sampling ensured the specific sources and contexts in which the data were derived can be transferred to other participants in a similar context. Transferability measures and or tests to what extent, the study's results are applicable within other contexts, circumstances, and settings, this was demonstrated through thick description as provided by the TSVIs who are experienced in teaching social skills to students who are

DB. This qualitative study utilized sample size of 11 to ensure some level of generalization to other people in a similar context.

Confirmability

This is the degree to which data and its findings can be trusted and corroborated (Patton, 2015). To ensure that this study was credible, the researcher maintained an audit trail in an Excel© spreadsheet throughout the research process. An audit trail highlighted every step of data analysis that was made to provide a rationale for the decisions that emerged.

Dependability

This is the degree to which the research findings are reliable and can be replicated. To establish dependability, the researcher maintained an audit trail, and engaged in code and recode activity to ensure the accuracy of data. Transcriptions were given to each participant for validation and clarification of their input. The researcher, in addition, used an inquiry audit to establish dependability, which required an outside person (a doctoral candidate) to review and examine the research process and the data analysis to ensure that the findings are consistent and could be repeated. In addition, the researcher utilized reflexivity throughout the research process to ensure dependability. According to Creswell and Poth (2016), reflexivity is the ongoing documentation of perceptions, reactions, emotions, and experiences of the researcher through the research process. Reflexivity allows the researcher to be constantly mindful and engaged with potential biases that the researcher may have.

Context of the Researcher

In a qualitative study, the researcher is the main instrument, and the lens through which the study is viewed therefore, the researcher ought to be understood. Holmes (2020) stated that readers are better informed in making judgments on the influence the researcher has imposed on the study and its outcomes when the researchers disclose as fully as possible their positionality within the research.

My interest was drawn to the field of deafblindness when I worked with an individual who was totally blind and had a hearing impairment (DB). I was curious to understand how she communicated and interacted with peers and people around her. After observing her for a long period of time, I learned how difficult it was for her to access information, explore her environment, and socialize with people around her. I observed how lonely she appeared sitting in a corner of the room and rocking herself most of the time. Hence, my interest in researching the social/communication skills of children who are DB. My mother always say, “There is always that one person that shapes our lives and career.” I watched as she sat in one spot and mumbled unintelligible words most of the time. The only interaction she received was from the staff. Each time a staff approached her, she held on to the staff and refused to let go while screaming, as this became a behavior for her. Holding onto staff made staff distance themselves from her while guiding other residents from her grabbing behavior. I watched her wallow in loneliness and isolation. Although, I believed that all she wanted was someone to spend some time interacting with her as she appeared calm each time a staff spent some time interacting with her. As a person with a counseling background, all I could imagine was the fact that she may have experienced depression from being lonely and isolated from

other residents. This made me wonder what other individuals who are DB may be going through in their respective schools. I started thinking about how social skills can be effectively taught to students by their teachers to improve their communication intent and be able to socialize with people around in their environment. Since DB is a unique disability, I know that their instructors will require specialized training to be able to interact with and teach these students. Since many states in the United States have not institutionalized the Teacher of Students with Deafblindness (TDB), I decided to first understand the experiences of TSVIs teaching social skills to students who are deafblind as this will enable me to understand the aspects of social skills they teach, strategies they perceive to be effective, resources and support they receive, and issues they may encounter while teaching social skills to individuals who are deafblind. This became the reason for my study in social skills of individuals who are DB.

Summary

This chapter describes the qualitative approach the researcher used for this study. A qualitative approach is best for this research due to the uniqueness of the population of individuals who are DB and their teachers that are being studied. This approach is appropriate for gathering data on the experiences of TSVIs teaching social skills to students who are DB. Interviews, observation of the participants during the interview process, and journaling allowed the researcher to gain perceptions and identify meaningful themes related to TSVIs experiences which may provide information to other TSVIs and the field of DB in general.

CHAPTER IV

RESEARCH FINDINGS

This study investigated the experiences of teachers of students with visual impairment (TSVI) teaching social interaction skills to students with DB. Of interest are the specific components of social skills that TSVIs teach to students who are DB, effective strategies they use, challenges and issues they face, and the type of accommodations and resources they utilize when teaching social skills. This chapter includes information about participants and the data collected from their interviews detailing their experiences working with students who are DB. After describing the 11 participants, the themes and subthemes that emerged from the analysis will be presented. Data were collected and analyzed to address the following questions:

1. What components of social skills do TSVIs perceive to be effective when teaching children who are DB?
2. What teaching strategies TSVIs perceive as the most effective when teaching children who are DB social skills?
3. What issues do TSVIs perceive to be more challenging when teaching social skills to students?
4. What kind of resources and support do TSVIs perceive to be more appropriate while teaching children who are DB social skills?

Data Collection Process

Data collection began for the study after receiving approval from the Texas Tech University Institutional Review Board. Participants' emails were obtained by emailing the Visual Consultants of each Education Service Center in a state in the Southwest

United States. Additional recruitment was completed through snowball sampling. All 11 participants participated in semi-structured interviews. Interviews were conducted through Zoom and the researcher recorded, transcribed, and analyzed the data. Member checking was conducted to allow the participants to review the data collected during the interviews. This member checking ensured the accuracy of the information provided and allowed an opportunity for the participants to add any meaningful additional information.

Analysis of Data

After data collection, the researcher transcribed the interviews. The researcher reviewed the transcriptions and notes used during the interview process to identify patterns and themes (Creswell, 2007). In identifying and developing categories from the data collected, open coding was used to aggregate the text into smaller categories and associate the codes with different themes that emerged. Coding helped the researcher to identify concepts, including similar and dissimilar themes during the data analysis (Creswell, 2007).

Description of the Participants

To ensure the anonymity of participants, pseudonyms were used in place of their real names. All 11 participants were recruited from the Southwest United States and have all taught social skills to students who are DB. All participants are adults, 10 self-identified as female, and 1 as male. Ten of the participants were certified as TSVI while 1 of the participants is yet to be certified and is currently employed as a TSVI. Three of the participants reported having some disabilities. Participants were identified in the order they were interviewed. Basic demographic information about the participants is included in Table 1.

The participants were between the ages of 26 to 65. Three participants reported having disabilities (visual impairment, hard of hearing, and undiagnosed ADHD). Eight participants identified as Caucasian, one as Caucasian/Native American, one as Hispanic, and another as Hispanic/Anglo. Ten of the participants completed their master's degree, and one completed a Bachelor of Science and years of experience teaching students who are DB ranges from 1 to 25 years.

Hana is a 26-year-old Caucasian female who has been teaching for 5 years. Hana earned her master's degree in visual Impairment (VI). Hana also earned a certificate in DB. Hana was certified as a TSVI in 2022 and has 5 years of experience teaching students from 0-22 years old. Hana reported teaching personal space, and conversational skills (e.g., turn-taking, listening skills, appropriate questions to ask, respecting peoples' opinions, and waiting for your time to speak) to students who are DB.

Lora is a 65-year-old Caucasian female. Lora earned her master's in VI and her certification as a TSVI in 2006. Lora has also been teaching students who are DB for 12 years. In addition, Lora teaches awareness of body language (e.g., gestures, facial expressions), personal space, relationships, self-control, age-appropriate human sexuality, and different norms of what is acceptable and where is important to students who are DB ages 0-22.

Pola is a 61-year-old Caucasian female with masters in VI. Pola has been teaching students who are VI and DB for 25 years. Pola teaches turn-taking, communication, peer interaction, and sharing to students with DB.

Mica is a 59-year-old Caucasian male who has been teaching students who are VI and DB for a year and 6 months. Mica has VI as per self-report. Mica teaches

conversation skills, time management, self-initiating activities, self-advocacy, peer interaction, body awareness, problem-solving, and turn-taking to students who are 18 years and above.

Cala is a 43-year-old Caucasian female. Cala has a master's in VI and has been teaching students who are DB for more than 1 year. Cala teaches students who are in 5th grade communication, gestures, and daily living skills.

Ana, a 26-year-old Caucasian female, has masters in VI. Ana reported being hard-of-hearing and has been teaching students who are DB from 18 to 22 years old. Ana teaches appropriate touch, appropriate emotional expression, advocacy, self-determination, communication, journaling, peer interaction, and turn-taking for 4 years.

Kara is a 42-year-old Caucasian female. Kara earned her master's degree in VI and has 11 years of experience teaching students who are DB. Furthermore, Kara teaches communication, appropriate behaviors in the school environment, interaction with others, and tactile signing to students from 0 to 22 years of age.

Puma is a Caucasian female in her 50s. Puma was certified as a TSVI in 2010 and has 13 years of experience teaching social skills to students who are DB. Puma teaches interaction with others, work skills, and social skills to students from ages 13 to 22.

Eva is a 41-year-old Hispanic female. Eva earned her master's in VI and has been teaching students with DB for 1 year and six months. Eva has undiagnosed ADHD per self-report. In addition, Eva teaches social-emotional learning skills (self-awareness), mindfulness (meditation and deep breathing), Self-determination, and movement/posture to students who are 18 years and above.

Jese is a 40-year-old female who identified as Hispanic/Anglo. Jese was certified as a TSVI in 2013 and has been instructing students who are DB for 15 years. Jese teaches conversational skills (tone of voice), personal space, body language (nonverbal), and social-emotional learning skills.

Luna is a 44-year-old Caucasian female who got her TSVI certification in 2006. Luna has been instructing students with DB for 21 years. Luna teaches conversational skills (e.g., asking questions, turn-taking) social-emotional learning skills, self-determination, advocacy, and technology.

Table 3: Participants Demographics

Participants	Age	Gender	Disability	Ethnicity	Education	Certification Year	Years of Experience	Age of students
Hana	26	Female	No	Caucasian	Masters	2002	5	0-22
Lora	65	Female	No	Caucasian	Masters	2006	12	0-22
Pola	61	Female	No	Caucasian	Masters	1998	25	0-22
Mica	59	Male	Visual Impairment	Caucasian	Bachelor of Science	No	1 1/2	18+
Cala	43	Female	No	Caucasian	Masters	2022	1	10yrs
Ana	26	Female	Hard of Hearing	Caucasian/Native American	Masters	2022	4	18-22
Kara	42	Female	No	Caucasian	Masters	2011	11	0-22
Puma	50+	Female	No	Caucasian	Masters	2010	13	13-22
Eva	41	Female	Undiagnosed ADHD	Hispanic	Masters	2023	1	18+
Jese	40	Female	No	Hispanic/Anglo	Masters	2013	15	18+
Luna	44	Female	No	Caucasian	Masters	2006	21	0-22

Analysis

The following seven themes emerged based on the research questions: (1) strategies for teaching social skills, (2) understanding issues for students, (3) understanding issues for teachers, (4) support and resource availability, (5) accommodations and equipment for teaching, (6) need to develop a modified social skills curriculum and, (7) need for specialized training for teachers. Some of these themes have subthemes that emerged, and these subthemes are:

Theme 1: Strategies for teaching social skills:

- Role-play/Modeling
- Extra Time
- Repetition
- Tactile routine/calendar routine
- Hand-under-hand
- The use of modified picture/object/tactile symbol
- Real-life situation
- Conversational/verbal instruction
- One-on-one session
- Turn-taking
- Hand-over-Hand
- Peer-to-peer interaction
- Problem-solving
- Reinforcement

Theme 2: Understanding issues for students:

- Communication Barrier
- Multiple disabilities
- Expectations of parents and others
- Transition to adult after graduation from high school

Theme 3: Understanding issues for teachers:

- Time constraints and large caseloads
- Access to professionals including classroom teachers, interveners, and interpreters
- Lack of assistive technology

Theme 4: Support and Resource Availability:

- Collaboration with other Professionals
- Schools (Perkins School for the Blind, DB support team, Deaf school in Texas, American Printing House for the Blind, Education Service Centers in Texas, Texas Workforce Commission)

Theme 5: Accommodations for teaching:

- Augmentative Alternative Communication (AAC) (e.g., hearing aids, PECS, tangible symbols, IPAD, FM systems, iPhone, handphones)
- Assistive Technologies (e.g., braille, magnifying tools, CCTV, large screen, projector device, fidget boards, screen readers, slant board)

Theme 1: Strategies for Teaching Social Skills.

All participants stated that they use a variety of strategies to teach students who are DB, and they primarily determine the appropriate strategy based on the cognitive level of the student. Six of the participants mentioned learning media assessment as one of the ways they determine their learning mode. Learning media assessment is an assessment to determine the most appropriate sense children who are DB use to access general education curriculum. Ten out of the 11 participants stated that it depends on the student's most impacted sensory loss. For example, if a student has some residual vision, or hearing, they are encouraged to use any of their residual vision or hearing to access information. In addition, others mentioned that they assess their students informally through the student's interests and what they respond to in terms of learning. Overall, teaching strategies for a student who is DB depend on many factors such as the degree of vision and hearing loss, age, motor skills, personal interest, and cognitive abilities.

Luna stated, "It really depends on the student if they're willing to engage and learn, or if they're in a place where they not, that can be an issue" (Luna: 07:27).

According to Cala,

Cognitive level, that's the important part, because if you're not meeting that child on whatever cognitive level, they're on...they're not going to progress, you don't want to, use a baby book with a teenager..." Grade levels do not matter as much as cognitive levels when working with students in the area of DB. You have to meet a child where their cognitive development is, you

cannot teach concepts that do not have any real meaning to the student. (Cala: 12:13)

All participants also mentioned that they use extra time, tactile routine calendars, and repetition, as strategies for teaching students who are DB. Time allocated for teaching is one of the challenges all the participants reported when teaching students who are DB. The participants all emphasized the need to create more time for the students due to the fact that students who are DB access information differently. They explained that before they can get students engaged in the task or the topic being discussed the time for the session is almost over. Students who are DB require extra time to access information and make meaning out of the session.

The calendar systems serve as a timepiece that helps students who are DB learn about the time concept and be able to anticipate upcoming events in the day-to-day activities. Students who are DB may make decisions on their own schedule and have conversations about their anticipated events. Participants all mentioned that they utilize the calendar schedule for their students.

All participants described repetition as being a vital strategy for teaching students who are DB. They stated that repetition is basically what they do every day with the student, and this is because most students who are DB have other disabilities which makes it difficult for some of them who are functioning within a low cognitive level to retain information. They explained that with repetition the student is able to practice the task many times till mastery is achieved.

Table 4: Theme 1 Quotes from Participants

Participants	Quotes
Luna	It really depends on the student if they're willing to engage and learn, or if they're in a place where they not, that can be an issue (Luna: 07:27).
Cala	Cognitive level, that's the important part, because if you're not meeting that child on whatever cognitive level, they're on...they're not going to progress, you don't want to, use a baby book with a teenager... Grade levels do not matter as much as cognitive levels when working with students in the area of DB. You have to meet a child where their cognitive development is, you cannot teach concepts that do not have any real meaning to the student (Cala: 12:13)
Luna	I think role-play helps a lot, using a method to communicate with them so that they understand (Luna: 04:09)

Other strategies mentioned are as follows:

Sub-Theme 1: Role-Play/Modeling

All participants stated that they use role-play to teach social skills to students who are DB. Luna stated, “I think role-play helps a lot, using a method to communicate with them so that they understand” (Luna: 04:09). Jese stated that “We do a lot of role-playing, where we're practicing in an unstructured environment, and then we'll use those skills before they go into the public, we practice communicating

in a way that the partner can fully understand what they're trying to say” (Jese: 02:13).

One of the participants explained how she uses modeling to teach the students

appropriate behavior and interaction. Kara stated,

I'm trying to model appropriate behaviors with them and their friends. So, we may play a game together. One of my favorites is Uno. My kids all love to play Uno and so I play with them and make sure that I'm showing them appropriate interaction, for example, things that you can say, things that you shouldn't say, and correcting them if I need to at that point”. (Kara: 02:47)

We do a lot of role play, like setting the situation ahead of time and making sure it's clear to everyone, often we'll have staff modeling first, we'll do like an unexpected or not appropriate situation and then an expected or like how you should handle a situation model. It's always funny to start with like the bad one first and it's like you're freaking out over something and you're like rolling on the floor, and they think it's hilarious because they're like, duh, you're not supposed to do that. And so, starting with modeling, and role-playing, are really helpful. (Ana: 02:34)

Ana described how modeling inappropriate behavior is also a strategy she uses in teaching what an appropriate response would be. She explained how they start off with what they are not supposed to do and then model the appropriate behavior to the students, so it makes sense and becomes meaningful to them. Other participants also explained how they engage in modeling and role-playing to teach their students. For example, Mica explained how he uses modeling to teach students who are DB to self-

initiation interaction. According to him, he engages the students in a hands-on task where they are able to ask questions either to their peers or to the teacher, and by so doing, they are taking charge of the situation, building a connection with one another, and problem-solving at the same time. Mica stated,

When we have a task, I explain how to use a machine first, show them how to use the machine, and then get them to engage with it and get them to try it while I guide them. And then I kind of step back and let them try it on their own. So, I do the same thing in class. We do a lot of modeling, you know, introducing something, we will talk about things, and I walk through and verbalize what it looks like or what I'm doing. So, the guys that can't see me are getting a mental picture of what is happening too. (Mica: 04:20)

The social skills that participants modeled included inappropriate social skills, appropriate social skills, problem-solving, initiating interactions, maintaining conversations, building connections, and maintaining body position during a conversation.

Table 5: Sub-theme 1 Quotes from Participants

Participants	Quotes
Jesse	<p>We do a lot of role-playing, where we're practicing in an unstructured environment, and then we'll use those skills before they go into the public, we practice communicating in a way that the partner can fully understand what they're trying to say" (Jese: 02:13).</p>
Kara	<p>I'm trying to model appropriate behaviors with them and their friends. So, we may play a game together. One of my favorites is Uno. My kids all love to play Uno and so I play with them and make sure that I'm showing them appropriate interaction, for example, things that you can say, things that you shouldn't say, and correcting them if I need to at that point". (Kara: 02:47)</p>
Ana	<p>We do a lot of role play, like setting the situation ahead of time and making sure it's clear to everyone, often we'll have staff modeling first, we'll do like an unexpected or not appropriate situation and then an expected or like how you should handle a situation model. It's always funny to start with like the bad one first and it's like you're freaking out over something and you're like rolling on the floor, and they think it's hilarious because they're like, duh, you're not</p>

Table 5, Continued.

supposed to do that. And so, starting with modeling, and role-playing, are really helpful. (Ana: 02:34)

Mica

When we have a task, I explain how to use a machine first, show them how to use the machine, and then get them to engage with it and get them to try it while I guide them. And then I kind of step back and let them try it on their own. So, I do the same thing in class. We do a lot of modeling, you know, introducing something, we will talk about things, and I walk through and verbalize what it looks like or what I'm doing. So, the guys that can't see me are getting a mental picture of what is happening too. (Mica: 04:20)

Sub-Theme 2: The Use of Modified Picture/Object/Tactile Symbol

All participants stated that they prefer using symbols, including tactile, pictures, objects, and Picture Exchange Communication Systems (PECS). One of the participants explained that they use real objects in the classroom, such as coffee makers, spatulas, microwaves, cups, and some other kitchen equipment to teach the students to cook. Ana stated,

So, I'll either use the noun project, which has, like universal symbols for adults, or I'll find real-world objects or images that I can use, and so we'll do that. I've also seen people do, like tactile symbols... and then we have tactile

symbols as well for students who are completely blind, or don't have usable vision... for me in my classroom, because all my students are low vision, everything is written in a huge print, twelve font is nothing to us, everything is huge, so we use a lot of visual supports. We have a lot of picture support.

(Ana: 03:12)

Another participant stated, "I honestly see kids usually all morning, and then all afternoon I am making things and researching things, lots of hand-on tactile items, we've used different types of counters or items to count" (Cala: 06:47). In addition to the tactile objects and symbols, all participants reported modifying almost every item they use for their students who are DB, which allowed the students to utilize objects and tactile symbols constantly. Mica stated, "Basically, I have been putting braille and tactile on everything, all our cabinets are brailled up and my guys like it" (Mica: 11:14). Ana stated that everything they use in the classroom is modified to incorporate tactile symbols or objects. In her words, "We make everything simplified or broken into chunks" to avoid missing out on information. "We tend to break up large paragraphs or large chunks of information into very simplified sentences and separate them visually" (Ana: 13:47). Cara reported that after seeing the students every morning she uses the rest of the day modifying objects to create tactile symbols for her students.

Table 6: Sub-theme 2 Quotes from Participants

Participants	Quotes
Ana	<p>So, I'll either use the noun project, which has, like universal symbols for adults, or I'll find real-world objects or images that I can use, and so we'll do that. I've also seen people do, like tactile symbols... and then we have tactile symbols as well for students who are completely blind, or don't have usable vision... for me in my classroom, because all my students are low vision, everything is written in a huge print, twelve font is nothing to us, everything is huge, so we use a lot of visual supports. We have a lot of picture support. (Ana: 03:12).</p> <p>“We make everything simplified or broken into chunks” to avoid missing out on information. “We tend to break up large paragraphs or large chunks of information into very simplified sentences and separate them visually” (Ana: 13:47).</p>
Cala	<p>I honestly see kids usually all morning, and then all afternoon I am making things and researching things, lots of hand-on tactile items, we've used different types of counters or items to count” (Cala: 06:47).</p>
Mica	<p>Basically, I have been putting braille and tactile on everything, all our cabinets are brailled up and my guys like it” (Mica: 11:14).</p>

Sub-Theme 3: Real-Life Situation

Nine participants said that they use real-life situations to teach social skills to the students. Ana stated, “In terms of strategies, what's most effective for me is real-life situations. Real life with immediate feedback follow-up” (Ana: 05:01). Ana explained that if, for example, they are talking about hygiene, and why they need to be clean or people won't be around them, they immediately do teeth-brushing and then walk around the school to talk to other people. Another participant Eva elaborated on the topic of real-life situations stating, “So, we'll have discussions about a situation so they can connect more meaningful real-world experiences that they've had to understand what I'm saying to them” (Eva: 01:39). The participant emphasized using real-life situations to teach the students appropriate social skills through immediate feedback and follow-up. For example, a participant explained that when they talk about greeting, they move around their campus and greet people around them. The students are also provided with immediate feedback on how they could have approached the person or how well they performed this task. Another participant gave an example of how they use their snack period to engage in peer-to-peer interaction by having the students prepare their own snacks such as popcorn. The students' self-initiate interaction by asking their peers to hand over utensils to them after use or by problem-solving among their peers. This is an example of using a natural environment to foster interaction.

One of the participants Hana stated, “I think anything that is as naturalistic as possible, so anything that mimics the real scenario as much as possible” is a good

strategy that we use for the students (Hana: 05:46). Mica elaborated on using the natural environment and real-life situations that teach social skills, explaining that “sometimes it's just pulling things out of the drawer and handing it around and asking, can anyone identify this? It's a spatula or it's a whisk or it's something, what do you use that for and it's like just letting them experience these things that people around them have used” (Mica: 05:02). Similarly, Kara stated, “I like to go into their classrooms when I can, working with them when there are other kids around, playing games with them and other kids so that I can immediately catch something and just tell them this is not okay and this is why, or hey, that's great” (Kara: 01:55). The participants use these real-life situations to provide immediate feedback to the students.

Table 7: Sub-theme 3 Quotes from Participants

Participants	Quotes
Ana	In terms of strategies, what's most effective for me is real-life situations. Real life with immediate feedback follow-up” (Ana: 05:01).
Eva	So, we'll have discussions about a situation so they can connect more meaningful real-world experiences that they've had to understand what I'm saying to them” (Eva: 01:39).
Hana	I think anything that is as naturalistic as possible, so anything that mimics the real scenario as much as possible” is a good strategy that we use for the students (Hana: 05:46).
Mica	sometimes it's just pulling things out of the drawer and handing it around and asking, can anyone identify this? It's a spatula or it's a whisk or it's something, what do you use that for and it's like just letting them experience these things that people around them have used” (Mica: 05:02).
Kara	I like to go into their classrooms when I can, working with them when there are other kids around, playing games with them and other kids so that I can immediately catch something and just tell them this is not okay and this is why, or hey, that's great” (Kara: 01:55).

Sub-Theme 4: Conversational/Verbal Instruction

Ten of the 11 TSVIs that participated reported using conversational/verbal instruction techniques to teach social skills. Some of the participants also discussed positioning of the students during a conversation. Mica reported that some of his students do not orient their bodies during a conversation, which is part of what they are working on. Mica stated, “they don't know how to track with their eyes. I have two young men that have been blind from birth and, we're working a lot on body positioning. If I'm over here talking, they're looking at their desk, and so we're working a lot on just getting them to raise their heads and face the speaker” (Mica: 01:32) In addition to the conversational skill, Mica stated that “the social skill for us is having conversations, being that a lot of them were sheltered, we work a lot on a polite conversation because they don't know how to say please or thank you” (Mica: 00:41). Hana explained,

We would sit down, and I'd say, this is the objective. This is what we're doing, this is what we're gonna use and in the end, we'll do this with social skills. It's like, we're just going to talk, but we're not really gonna talk. You have things you want to address. So, I'll start with that. And then often in doing so, I'll be able to use things that happen in that conversation to refer back as examples and non-examples of what I'm talking about. Mm-hmm, which is a great instructional strategy, but not something that, um, like it's really easy to do in math. (Hana: 11:54)

Eva stated that “it really depends on their learning channels. So, if they're more auditory, we have discussions, so we'll have discussions about it so you can then have them connect, more meaningful real-world experiences that they've had to understand what I'm saying to them” (Eva: 01:39).

Additionally, there are other strategies that few participants mentioned, and they include turn-taking, hand-under-hand, hand-over-hand, one-on-one-session, peer-to-peer interaction, problem-solving, and reinforcement as part of the strategies used in teaching social skills. Further, turn-taking is one of the strategies participants mentioned that they use for students who are DB. It is a social skill component that allows the student to engage in appropriate interactions with others. It is important for the student to know when it is time to engage in interaction to make that interaction meaningful for the partner. Six participants (Ana; Hana; Jese; Luna; Mica; and Puma) mentioned that they use turn-taking with their students. Hana explained that she uses turn-taking to build listening skills for the student. For example, two of my students will constantly try to interrupt because they do not see when I am done or my facial expression. We then started a game that targets listening skills, when they try to interrupt, they miss information and get it wrong. This kind of game motivated them to listen more so as not to miss any information and lose the game.

Six different participants (Ana, Eva, Cala, Hana, Pola, and Mica) mentioned the use of hand-under-hand, and hand-over-hand as part of the strategies they use for their students. Hana stated that using hand-under-hand has helped her to prevent tactile aversion. According to Hana, children will pull away whenever she uses hand-over-

hand, unlike the hand-under-hand technique. “I've had several kids who are tactile learners who are very tactilely averse because they had overuse of hand-over-hand from the previous teachers” (Hana: 25:59). Hana stated that “often when you do hand-under-hand, they'll naturally go forward and start independently engaging with it versus I go hand-over-hand and they're just ready to pull away”

(Hana:27:32). According to Hana,

Hand-under-hand helps guide and provide an actual model of what you're doing, I'm not showing you anything, I'm making you participate. You can feel what I'm doing and my motions. And so, it's much easier to fade back and it's much more respectful. And I've seen kids master a lot more skills through hand-under-hand than anything I saw when I did hand-over-hand. Hand-under-hand is the highest level of modeling. (Hana: 25:59)

Pola reported using both hand-under-hand and hand-over-hand for her students depending on the student's level of tolerance and preference, with some she would do hand-over-hand and some hand-under-hand. Pola stated,

It depends on the student, with some of them, I would put my hand on top of theirs and guide them to where I wanted them and as they got a little older or with some of the students, I'd put my hand under theirs and guide them and kind of let them feel what they were looking for. However, when we first started teaching, hand-under-hand wasn't a thing, so we always did hand-over-hand. And so, they encourage us more to do hand-under-hand. (Pola: 04:49)

One-on-one session was one of the strategies participants mentioned they use for students who are DB. Hana explained that she usually has one-on-one sessions with her student where she pulls them out of the classroom. They will have a direct conversation and social skills lessons where I refer her back to when she was with a friend and how her friend reacted when she was too close to her face. Hana stated,

I think it's really important that that's not the only part of social skills instruction because then there's not the application piece. And I really benefit from the fact that the intervener is there because then the intervener reinforces what we are working on, she hears what we're working on in our one-on-one session, and so she applies that when I'm not there and she's able to use the same language that I'm using. But then I also have a push in time with her. So, I pull her out once a week and then I push in with her once a week so that I can find naturalistic opportunities to reinforce those skills. (Hana: 04:01)

Another participant (Luna) explained that one-on-one sessions help the student to understand what is being taught. Luna stated, “The individualized instruction probably is the best, although the group instruction is great, then, catching them more individually helps them understand better” (Luna: 04:09). All other strategies mentioned are shown in the table below. Table 2 outlines the frequency that participants identified the various strategies they utilized to assist them in teaching social skills to their students who are DB.

Table 8: Sub-theme 4 Quotes from Participants

Participants	Quotes
Mica	<p>They don't know how to track with their eyes. I have two young men that have been blind from birth and, we're working a lot on body positioning. If I'm over here talking, they're looking at their desk, and so we're working a lot on just getting them to raise their heads and face the speaker” (Mica: 01:32).</p> <p>the social skill for us is having conversations, being that a lot of them were sheltered, we work a lot on a polite conversation because they don't know how to say please or thank you” (Mica: 00:41).</p>
Hana	<p>We would sit down, and I'd say, this is the objective. This is what we're doing, this is what we're gonna use and in the end, we'll do this with social skills. It's like, we're just going to talk, but we're not really gonna talk. You have things you want to address. So, I'll start with that. And then often in doing so, I'll be able to use things that happen in that conversation to refer back as examples and non-examples of what I'm talking about. Mm-hmm, which is a great instructional strategy, but not something that, um, like it's really easy to do in math. (Hana: 11:54)</p>

Table 8, Continued.

I've had several kids who are tactile learners who are very tactilely averse because they had overuse of hand-over-hand from the previous teachers” (Hana: 25:59).

often when you do hand-under-hand, they'll naturally go forward and start independently engaging with it versus I go hand-over-hand and they're just ready to pull away” (Hana:27:32).

Hand-under-hand helps guide and provide an actual model of what you're doing, I'm not showing you anything, I'm making you participate. You can feel what I'm doing and my motions. And so, it's much easier to fade back and it's much more respectful. And I've seen kids master a lot more skills through hand-under-hand than anything I saw when I did hand-over-hand. Hand-under-hand is the highest level of modeling. (Hana: 25:59).

I think it's really important that that's not the only part of social skills instruction because then there's not the application piece. And I really benefit from the fact that the intervener is there because then the intervener reinforces what we are working on, she hears what we're working on in our one-on-one session, and so she applies that when I'm not

Table 8, Continued.

there and she's able to use the same language that I'm using.

But then I also have a push in time with her. So, I pull her out once a week and then I push in with her once a week so that I can find naturalistic opportunities to reinforce those skills.

(Hana: 04:01)

Eva It really depends on their learning channels. So, if they're more auditory, we have discussions, so we'll have discussions about it so you can then have them connect, more meaningful real-world experiences that they've had to understand what I'm saying to them” (Eva: 01:39).

Pola It depends on the student, with some of them, I would put my hand on top of theirs and guide them to where I wanted them and as they got a little older or with some of the students, I'd put my hand under theirs and guide them and kind of let them feel what they were looking for. However, when we first started teaching, hand-under-hand wasn't a thing, so we always did hand-over-hand. And so, they encourage us more to do hand-under-hand. (Pola: 04:49)

Luna The individualized instruction probably is the best, although the group instruction is great, then, catching them more individually helps them understand better” (Luna: 04:09).

Table 9: Strategies Used by TSVIs

Strategies	Number of Participants
Role Play/Modeling	11
Extra Time	11
Repetition	11
Tactile Routine/ Calendar	
System	11
Picture/Object/Tactile	
Symbol	11
Conversational/Verbal	
Instruction	10
Real-Life Situation	9
Turn-Taking	6
Hand-under-Hand	4
Hand-over-Hand	4
Peer-to-Peer Interaction	4
one-on-one Session	3
Reinforcement	3
Problem-solving	2

Although all participants stated that the strategies they use depend on the cognitive level of students, they listed some of the strategies that they perceived to be most effective (See Table 3).

Table 10: Strategies Perceived to be Most Effective by Teachers

Most Perceived Effective Strategies	Number of Teachers
Roleplay	8
Tactile Signing	5
Hand-under-Hand	4
Peer-to-peer interaction	4
Problem-solving	4
Turn-taking	3
Conversational/verbal instruction	2
Real-life situation	2
Hand-over-Hand	1
Repetition	1

Theme 2: Understanding Issues for Students

In understanding issues for the students who are DB, communication, multiple disabilities, expectation of parents and others, and transition for the students emerged as subthemes. Participants in their teaching experience expressed their personal concern over students who are DB in their learning. These issues make it difficult for both teachers and students to communicate and interact with each other, thereby

hindering learning. Generally, students who are DB face many challenges due to their dual impairments. It is important to understand these issues and how they affect social skills among students.

Sub-Theme 1: Communication Barrier

Communication appears to be an issue for the participants due to the students hearing and vision loss (dual sensory impairment). Students who are DB have challenges with both receptive and expressive language making it difficult for others to understand them. It is evident that participants who may not be proficient in sign language found it difficult to communicate with their students. These participants rely solely on interpreters and interveners. Some of the participants are not aware of where they should position themselves when communicating with the students. It was difficult for them to realize that they need to be where the student auditorily accesses information making it difficult for the student to hear them.

All participants stated that communication is a big factor when teaching students who are DB. Eva explained that communication is an issue because she is not proficient in sign language; however, the students she worked with have interpreters. According to Eva, not all information is taken into consideration. She explained that when she started working with the students who are DB, she had challenges knowing the position to stand for communication and interaction with her students if they had a specific hearing impairment. She also reported using an interpreter because she could not communicate directly with the student. Jese reported that sometimes students get frustrated and angry if people couldn't understand how to communicate with them.

She also stated that recently, they have provided iPads and other augmentative communication devices more than they have done in the past. However, one of the participants who stated that she is proficient in communicating with students with DB described the frustration of the students not being able to communicate with people around them. Ana explained that a communication barrier is a huge one. Ana stated,

Generally, the DB students will come here because the blind aspect is more, people are like, oh, we can deal with the deaf here, but we can't necessarily deal with the blind here. So, we're going to bring them over to the blind school... with that comes a lack of signing staff. My students who are profoundly deaf have three or four people on campus with whom they can communicate directly one-on-one, for every other person they need an interpreter or intervener. And so, the student's ability to interact with peers or with staff members is limited to a very specific group of people. It limits their ability to communicate with other people and other people's ability to understand them. Because not everyone signs, and maybe students themselves don't know how to use interpreters necessarily, that can be really challenging. So, there are a lot of communication breakdowns that happens just because of the lack of access that they have. (Ana: 10:37)

In addition, some of the participants reported that they teach communication to their students who are DB. For example, Luna explained she teaches her students how to appropriately communicate with people through emails, ensuring they use greetings at the beginning, communicate their points effectively, and write a thank you at the

end. Luna also stated that they learn what is appropriate to share on social media and what is not in terms of teaching communication. Mica reported using peer-to-peer interaction to foster communication among the students. According to Mica, “It helps them build their communication” (Mica:13:11). Kara stated that she is currently working on tactile signing with her students, ensuring that the way the student is interacting and communicating with their peers is appropriate. Jese reported teaching communication skills using social games and peer interaction. She explained that through communication they are able to manage their emotions by being able to recognize and express what they are feeling at the moment.

Sub-Theme 2: Students with Multiple Disabilities

One of the subthemes that was commonly mentioned by all participants is having students with multiple disabilities. All stated that students who are DB may usually have other disabilities that may impair their cognitive development. Luna explained that some students may require basic information while another student may need a lot more information to learn. According to the participants, having disabilities makes the DB student unique in terms of the needs and services they may require to function effectively. Other participants explained how their students with DB function at a different cognitive level due to other forms of impairments.

Hana stated, “Students who are DB often have another disability and, I had experience with one student who is a nonverbal communicator, she had Shaken Baby Syndrome, and so just a very severe cognitive impairment” which makes it difficult for the student to access information (Hana: 23:09). Mica stated that some of his

students are on the autism spectrum and need more processing time. Cara stated that two of her students have CHARGE syndrome, one of them has light perception and the other one has what she called “selective hearing” (Cara: 00:59). The student only hears what she chooses and participates at will. Cara explained that it was difficult for the student to engage in activities that are abstract. For example, “numbers” did not mean anything to her which was difficult to engage her in such activity” (Cara: 00:59). Cara stated,

One of my students has CHARGE, so, she's non-verbal, she has low cognitive levels and so, does not want to ever do anything. She is not happy with participating in anything. I show her teachers that are in the classroom what signs and gestures I'm using so that they can also use those with her. So, everybody's doing the same thing all the time and knowing what is going to cognitively make sense to her. We were working on numbers. Well, she, we've been working on numbers one through five for a year now and they just don't mean anything to her. So, you've got to make sure that whatever signs you are putting forth for communication is something that is meaningful to her. Yeah, and then of course you know, the refusal to participate, you have to just kind of refrain from expecting more from her. (Cara: 00:59)

Sub-Theme 3: Expectations of Parents and Others

Some of the participants expressed their views and experiences when working with parents and other people with students who are DB. They explained that some parents are involved in the students' learning while others are not. Mica explained that

most of his students are raised at home where their parents and family members do everything for them and do not necessarily get them out to the community. This resulted in the students not knowing how to communicate with peers and others or even advocate for their own needs. He added that due to the amount of patience required, people find it easier to do things for the students at home rather than give them the opportunity to explore. Cara stated that some parents do not expect much from their children who are DB, especially those that have cognitive disabilities. In addition, some parents may have high expectations of what their child could accomplish while others may have low expectations of their child's ability. However, those who are involved cooperate with the team in supporting their child's learning. Cara reported,

Another big factor in success is the connection between home and school. If parents do not buy into the practices you have at school and have lower expectations then it dramatically slows down the learning process. The fact that a lot of parents don't expect a lot from their children, especially the ones that do have cognitive disabilities sometimes, it's quicker to put their shoes on for them and to get them dressed and to carry them out the door and you know, just those kinds of things where it's a convenience deal. So, if you don't have any reinforcement at home, it's really hard to get those concepts to stick and for that child to rise to those expectations. So, I really think that home life and school-life balance is important. Some parents are great, I have a lot of parents that we've had some discussions about that, you need to make sure that they're

doing the same thing their peers are, expecting those age milestones just like their sighted peers, and that they need to be as independent as possible. And some of those parents, you know, really take off with that, you notice the difference in the student's abilities, whether it's academic or life skills or you know, any of those. (Cara: 08:58)

One of the participants, Ana explained that people expect students who are DB to behave in a certain way whereas they are uniquely different in their own way. According to Ana,

Even within the field of special education, people expect students who are DB to behave in one way. Every student who is DB is so different. Even if they have the exact same condition, exact same eye acuity, hearing loss, like, it doesn't matter. So, when they come across students, like the ones that I work with, they're like, we don't know what to do with this one. People have a tendency to treat them very childlike, especially because a lot of the students that I work with are DB due to developmental needs. So, a lot of them, yeah... they're very cute, they're very small. Um, and so they tend to be treated like children more than you might even see with our general blind or deaf population. (Ana: 09:32)

Furthermore, two of the participants reported low-income families not being able to afford social interaction opportunities for their children who are DB, for example, engaging in camping activities with other children who are DB and participating in other social activities. Hana stated, “We also have a lot of low-income families who

have limited opportunities for social interaction opportunities, my kids often don't have the summer camp they go to because they can't afford to do summer camp” (Hana: 15:41). This limits the opportunities they have to interact and socialize with other children. Some other participants also stated that most of their students only interact with the adult staff and not with their peers because the adults know how to communicate with them and could be patient with them, unlike their peers.

Sub-Theme 4: Transition after Graduation from High School

Transition is one of the issues that emerged. Participants reported some level of concern towards transitioning students who are DB to the adult world. One participant expressed that the kind of materials and curriculum that they use is made for younger students which makes her wonder where adult students transition. Ana stated, “A lot of our curriculum is based on younger students, and I'm kind of like, where do they go when they get older” (Ana: 20:30). One of the participants expressed her concern over those students with severe vision loss and hearing impairment. These individuals may end up in a group home where there are a lot of individuals with a cognitive deficit which may not be an appropriate placement for them. Kara reported,

I feel like when they graduate from high school it's group homes, there are not as many job opportunities for them. Umm...and a lot of the group homes and other things like that are more set of round children with cognitive impairments. Mm-hmm. and not all of these, not all of this group of kids have a cognitive impairment. That's always something that scares me with our kids after high school. And some of them, some of them it makes sense and then,

but the ones who are DB are, they're just a, such a bigger disadvantage. And I, you know, I don't know what a job site's going to look like for a kid that is DB.

(Kara: 10:22)

Theme 3: Understanding Issues for Teachers

All the participants described their experiences teaching students who are DB. All reported the issues which were mainly a concern for the students which were addressed above and some for themselves. In describing their personal experiences, issues such as access to paraprofessionals including interveners and interpreters, time constraints and large caseloads, and a lack of assistive technology emerged as subthemes under this category.

Sub-Theme 1: Time Constraints and Large Caseloads

Participants expressed having limited time access to the students, which they attributed to a large caseload. Due to the shortage of TSVIs, there is a large caseload for the TSVIs as stated by one of the participants who expressed that she currently has a caseload of 30 students including those with visual impairment in her school district. Hana stated,

I think the time for the TSVI to address everything, I'm the only TSVI in my district, um, and I have a caseload of 30, so I often find it really hard to meet everybody's needs. There is not enough time to spend with kids, especially those that are multiply impaired which are the majority of kids who are DB, extra time is very important. (Hana: 16:52)

Another participant stated, “It’s just finding the time throughout each day of a student’s daily classes for instruction.” In addition, she added, “I feel like I have more to teach than there is time for” (Kara: 01:40).

Sub-Theme 2: Access to Professionals including classroom Teachers, Interveners and Interpreters.

Participants reported that some of their students use interpreters and interveners. There is a shortage of these and other professionals working with the students who are DB. Ana reported that there is a lack of staff who sign which limits the students from communicating with peers and other staff members. However, one of the participants reported having a team of professionals, including interpreters, in the same small room slows down her instruction. Participants also expressed their concern about working with the classroom teachers. Luna stated, “I have to work closely with my teachers, offer to make or buy materials for them so that they can see me more as a co-teacher rather than someone who drops in once a week” (Luna: 01:20). Another participant stated that a lot of what they do is carried out in the classroom and there is not much follow-through with the teacher. Kara reported that “working with classroom teachers can be challenging when they are not wanting to put in the effort for the child” (Kara: 04:29).

Sub-Theme 3: Lack of Assistive Technology

Participants reported a lack of access to assistive technology, in general, is one of the issues they encounter in teaching students who are DB. Participants expressed

needing support from their administrators towards providing assistive technologies for the students who are DB. Hana stated,

Support from administrators is hard due to a lack of understanding of the student's needs. I've had to explain stuff to administrators that I never thought I'd have to explain. It's such a small population that you end up being the one person who knows something in the district, um, which is a hard place to be sometimes...like a student who is DB often has another disability. (Hana: 19:16)

Theme 4: Support and Resource Availability

All participants reported receiving various kinds of support and resources from different sources. They reported seeking support from their colleagues, who are more experienced in the field as well as working with those parents who are willing to support their work. Mica stated that his best resources are his colleagues. Most of the time he consults with them to have a better idea of how to approach issues that are new to him. Mica stated, "I'm lucky because I have a lot of people who have been in the field for many years, I'm at this campus where it's like, there are so many people that have so much experience, so they are my best, biggest resource" (Mica: 06:31).

All participants mentioned different schools they obtain resources from such as the Perkins School for the Blind, Schools for the deaf in Texas, American Printing House for the Blind, DB support teams, Education Service Centers, and Texas Workforce Commission. One of the participants Ana stated, "Perkins School for the Blind has been a great resource, they started the whole thing and so they have a lot of

resources there” (Ana: 15:02). She also mentioned that she works directly with the Access Program and together they plan curriculum and make sure they are using the same materials for their students who spend half of their time in their different programs. Luna explained that her school has curricula that they use for the students. She stated, “Our school provides us with whatever training pretty much that we ask for” (Luna: 12:05). Lora stated, “I rely heavily on TSBVI, TSD, also my friends who work for different school districts, and Deaf Program which serves our area” (Lora:05:15). Other participants reported receiving resources and support from their various school districts.

Sub-Theme 1: Collaborating with other Professionals.

All participants emphasized the use of collaboration while teaching students who are DB. All participants reported consulting with their colleagues who may have more experience working with students who are DB. Luna explained that she has people around her that she can always ask questions when in need. She stated, “It’s great because there’s always somebody to ask, we’ve got OTs and PTs and speech and behavior specialists and all of that” (Luna: 11:58). In relation to that Jese stated, “We have a behavior specialist that is supporting us, and we usually make it a team approach. We’ve got the behavior specialist, we’ve got the speech pathologist, we include the hard of hearing teacher” (Jese: 02:13). Another participant reported she works with other teachers in providing instruction for her students. She explained what informs the teachers that are in the classroom regarding the information they are working on and the strategies she is using so they follow through. She stated, “I show

her teachers that are in the classroom what signs and gestures I'm using so that they can also use those with her. So, everybody's doing the same thing all the time, and knowing what is going to cognitively make sense to her” (Cala: 04:02).

Lora stated, “I work closely with my teachers, offer to make or buy materials for them, so that they can see me more as a co-teacher rather than someone who drops in once a week” (Lora: 01:20). Kara stated that though it is important to collaborate with classroom teachers when working with the students however, working with some teachers, especially those that are not motivated to work with the student, can be challenging. The participants also mentioned the use of social media groups as platforms to collaborate with fellow TSVIS in sharing ideas and useful materials.

Table 11: Theme 4 Quotes from Participants

Participants	Quotes
Mica	I'm lucky because I have a lot of people who have been in the field for many years, I'm at this campus where it's like, there are so many people that have so much experience, so they are my best, biggest resource” (Mica: 06:31).
Ana	Perkins School for the Blind has been a great resource, they started the whole thing and so they have a lot of resources there” (Ana: 15:02)
Luna	Our school provides us with whatever training pretty much that we ask for” (Luna: 12:05).

Table 11, Continued.

It's great because there's always somebody to ask, we've got OTs and PTs and speech and behavior specialists and all of that" (Luna: 11:58).

Lora I rely heavily on TSBVI, TSD, also my friends who work for different school districts, and Deaf Program which serves our area" (Lora:05:15).

I work closely with my teachers, offer to make or buy materials for them, so that they can see me more as a co-teacher rather than someone who drops in once a week" (Lora: 01:20).

Jese We have a behavior specialist that is supporting us, and we usually make it a team approach. We've got the behavior specialist, we've got the speech pathologist, we include the hard of hearing teacher" (Jese: 02:13).

Cala I show her teachers that are in the classroom what signs and gestures I'm using so that they can also use those with her. So, everybody's doing the same thing all the time, and knowing what is going to cognitively make sense to her" (Cala: 04:02).

Theme 5: Accommodations and Equipment for Teaching

All participants stated that they use different kinds of accommodation (FM, CCTV, large prints) depending on the needs of the student they are working with. One common accommodation that all participants emphasized was an Individualized education plan (IEP) for each student since they have varying degrees of sensory impairment that requires separate unique accommodation. Lora informed that she uses all accommodations available to the students. “I have used all of the accommodations available to students, it really depends on the individual student’s needs” (Lora: 04:10). One participant Kara stated, “I feel like everything I do is accommodated” (Kara: 05:30). Kara elaborated on the specific accommodations she uses.

I do have FM systems and they have hearing aids. I also make sure, like one of mine has one side that's totally blind and the other side is severely impaired, but not totally. And so, I make sure I'm sitting on the correct side and the materials are put in the correct location. I do lots of tactile, not hand-over-hand all the time, but just tactilely touching them to get their attention, and maybe wave if they are paying attention somewhere else. I try and get close to their eyesight and wave to gain attention. (Kara: 05:30)

All the participants mentioned using tactile objects for their students and some of these objects include tactile books, tactile calendars, toothbrushes, and car keys. Luna explained that she uses direct instruction, small classes which help individualize instruction in a way that the student can understand, picture symbols, tactile symbols, and communication books as forms of accommodation. Jese added that they use

objects such as hand magnifiers, written scripts, checklists, iPads, augmentative communication, and other equipment that may be in students’ possession. Most importantly, they make sure all materials and equipment that they use are cost-effective, and the students can learn to use them independently. In addition, one of the participants, Cara, stated that all she does every day with her students is considered accommodation and therefore cannot categorically mention only one accommodation. Table 5 shows the types of accommodation mentioned by the participants.

Table 12: Accommodations and Equipment Used for teaching

Accommodations	Number
Tactile Sign/Objects	11
Braille devices/Communication Boards	9
Magnifying tools	6
FM systems	6
Hearing aids	5
Sensory environments	4
Screen readers	4
CCTV	4
Slant board	3
Projection device	3
Large Screen Laptops	3
Large screen	3
Headphones	2

Table 12, Continued.

Opaque 11 by 17 papers,	1
Fidget boards	1

Theme 6: The Need to Develop a Modified Social Skills Curriculum

Ten out of the 11 participants stated the need for an established curriculum that would focus on social skills, specifically for students who are DB. Participants emphasized that they usually modify materials and curricula they find online and through other sources to be able to use for their students who are DB. They reported there is a lack of A specialized curriculum that could guide social skills instruction and learning. Hana stated,

I wish for sure there were more materials that focused on social interaction skills and curriculums that would guide me through that instruction because what I have found is typically very old and that can be really...if there is a curriculum where there is a lesson, about eye contact or about facial expressions or something like that, it's so old that the examples are really outdated...it would be cool to have like, a curriculum to guide that all that.

(Hana: 14:53)

To further explain a lack of and the need for a social skills curriculum for the DB, one of the participants Ana explained,

A lot of materials and resources for the DB specifically are made for either younger kids or for students with really high needs, especially in relation to

language. I have super fluent signers, really good communicators, um, like students who are not quite workforce ready, but could be in some kind of modified way. So, I tend to find that the resources that I have available to me are too childish, and or aren't as applicable, like they're really simplified. So, I tend to make a lot on my own. (Ana: 06:39)

Theme 7: The Need for Specialized Training to Teach Students who are DB

The participants stated the need for training to be able to serve individuals who are DB better. The participants explained that some of them are not specifically trained for the individuals with DB which makes it more complicated in terms of communication and accommodating these individuals in the classroom. Luna stated that she is currently taking a signing class to be able to communicate more with her students. Jese explained that incorporating into their professional development training for the TSVI would be a great idea for the teachers. In addition, the participants stated that due to the few numbers of students with DB, the curriculum they use is a curriculum for those who are only visually impaired, and it requires modification for those who are DB. Participants emphasized the need for more training which could be in the form of in-service training, or professional development. Cala reported that training is important for them as teachers providing instruction to students with DB. Kara explained further,

I pull from both my deaf education and from my vision background, but sometimes it's a whole different thing when we work with kids with visual loss, we depend on their hearing and when we work with kids with hearing

loss, we depend heavily on their vision. So, it's another thing when you take both away. I think DB definitely needs its own set of training. (Kara: 08:11)

One other participant Ana stated, "I think generally there's not a lot of training that is specific to the students that we work with" (Ana: 17:16). She explained that some of the training she attended focused more on the younger kids than the population she works with. "A lot of the training is very specific to a different population than what I work with, the majority of what they are talking about is for younger or population that are with higher needs" (Ana). Ana further explained that in a school district, there may be only three TSVI, that are expected to teach the students who are DB. Ana stated,

Typically, like who you get is who you get. If you don't sign and your student is a fluent signer, you figure it out. And that's not necessarily a conducive learning environment if you're trying to figure out how to communicate with your student. They don't know how to communicate with you and maybe y'all just don't have the support that you need. And so definitely more training would be helpful. (Ana: 18:15)

Summary

This chapter discussed the demographic of the participants, the interview process, and how the data were analyzed. It also described the findings of the study, themes, and sub-themes that emerged after the data analysis. The findings were summarized based on the experiences of the participants.

CHAPTER V

DISCUSSION AND IMPLICATIONS

In this chapter, I discuss the research findings, the implications of the research findings, restate the purpose of the research and its significance and present my conclusions from the research. Additionally, I connect the research questions and the findings to existing literature and make recommendations for further research.

Purpose and Significance of the Study

This study aims to fill in the gap in previous research studies that focused on other issues of the deaf and the blind populations alone. Specifically, a gap exists in the body of knowledge regarding the social interaction of children who are DB (Bruce et al., 2016; Ferrell et al., 2014; Hartshorne & Schmittel, 2016; Haegele et al., 2014; Lieberman, 2017; Mar & Sall, 1995) and the experiences of TSVIs that provide instructional skills and strategies. To address this gap, this study used a representative, population-based sample to understand the experiences of the participants. The study primarily focused on the TSVIs and created awareness of their perceived experiences. This research may provide useful instructional information to both individuals with DB and their teachers. It may also provide useful ways for TSVIs to cope with the challenges they face in teaching their students and help individuals with DB effectively interact and communicate more with the larger society. Additionally, it may be useful for other researchers who wish to further research this topic. The following questions guided this study:

1. What components of social skills do TSVIs perceive to be effective when teaching children who are DB?
5. What teaching strategies TSVIs perceive as the most effective when teaching children who are DB social skills?
6. What issues do TSVI perceive to be more challenging when teaching social skills to the students?
7. What kind of resources and support do TSVIs perceive to be more appropriate while teaching children who are DB social skills?

Summary of Results

Strategies for Teaching Social Skills.

This study's findings revealed that TSVIs provide social skills instruction to students who are DB using numerous teaching strategies. It is important to note that instructional strategies may vary depending on the student's degree of vision and hearing loss, their communication mode, and personal preferences. Participants stated that the strategies they use depend on the student's cognitive level. These strategies include role-play, extra time, repetition, tactile routine, calendar routine, hand-under-hand, picture/object/tactile symbols, real-life situations, conversational/verbal instruction, one-on-one session, turn-taking, hand-over-hand, peer-to-peer interaction, problem-solving, and reinforcement. These strategies align with previous studies by Dammeyer (2014) and Correa-Torres et al. (2021) that stated that teaching students who are DB requires varying strategies depending on their level of dual sensory loss. Another study by Brum and Bruce (2022) confirmed the importance of identifying

learners' interests during instruction. They further discussed the need to include other forms and modes of communication such as objects, pictures, and braille. Participants in the study mentioned role-play as part of their teaching strategies. It allows the student the opportunity to imitate behavior and occupy a joint dyadic space with their communication partners. This finding is in line with Hart (2006) that investigated how imitation establishes meaningful communication with partners for individuals who are DB. Role-play provides individuals the opportunity to imitate, practice, and model appropriate social skills needed for interaction. This was shown where Ana explained how they role-play both inappropriate behaviors and then role-play the desired behavior. Role-play also provides the student with immediate feedback that may initiate conversation for both partners thereby promoting interaction. This idea of role-play and imitation could be drawn from infant theory such as the approaches of intensive interaction (Caldwell, 2005). Intensive interaction involves building up conversations that are meaningful to the co-partner by working on peoples' body language through imitation (Cadwell, 2005).

Participants emphasized the need to plan extra time for their students. They explained that the time usually allocated for the students is not enough and the students need more time to process any information they are given. Similarly, Best et al. (2002); and Downing and Chen (2003) stated that planning for extra time for children who are DB both in initiating and responding to interactions as well as taking instructions is important to allow enough time for children to process the information they have received before the activity. This will facilitate the development of trust

with the partner and will enhance their confidence and sense of security. Allowing enough time for children to explore the environment and understand the activity will improve their skills in socialization and self-determination (Arndt et al., 2004). All of these strategies can also be done through repetition.

Repetition is another strategy that emerged from the findings. All participants demonstrated the use of repetition with their students. A skill that is rehearsed over time gradually becomes easier for the student to complete. Through repetition, the student can form habits, reinforce knowledge in their repertoire, and boost their self-esteem. This finding aligns with the study by Bruce (2005) who demonstrated that repetition is used during active games. The games are important in learning representation that will occur when a child has developed word-image representation and may support the child to imitate label. Repetition may aid maintenance of experience a student had learned over time. Participants stated that repetition plays a major role in a student's performance. Repetition can also be built into daily activities such as the tactile calendars and objects the students use to anticipate events.

Tactile calendar routine/tactile symbols/pictures/object/ are some of the strategies participants mentioned they utilize when teaching social skills to students who are DB. They stated that it is part of their interactive routine the students use to anticipate events that are yet to occur. They are mainly used to transition the students to another activity. In support of the tactile strategy, Bruce (2005) stated that appropriate representations for children who are DB are those based on their tactile experiences. A child who is congenitally DB can be supported to achieve object

permanence through the tactile mode. All participants emphasized their use of tactile calendars and other tactile objects in serving students who are DB. These tactile routines could serve as sensory objects for the students. Participants stated the importance of involving the students in making the objects as well as considering preferred textures when choosing materials for the objects.

Many participants reported using hand-under-hand/hand-over-hand techniques as it builds a connection with their communication partner and helps the students to explore objects. One of the participants Hana stated that “when you do hand-under-hand, they'll naturally go forward and start independently engaging with it.” Bruce (2005) supports the use of hand-under-hand strategy for students who are DB. In using hand-under-hand, the teachers are encouraging the child’s learning and exploration of their natural environment respectfully.

Real-life situations provide the opportunity for the student to learn from their natural environment. When working with students who are DB, it is crucial for the teachers to create opportunities for them to experience and engage in real-life situations. This could involve visiting different environments, role-playing, and providing hands-on experiences that could encourage problem-solving and interaction. Problem-solving activities can be adapted to meet the unique needs of students who are DB. Participants stated that they utilize tactile materials that allow the students to explore and manipulate objects in their natural environment. They explained that while engaging in real-life scenarios, they incorporate problem-solving tasks that require both cognitive and tactile skills to promote their overall development. Mica,

Mica explained how he provided the students with tasks that involve problem-solving and encourages peer-to peer-interaction. This aligns with a study by Luckner et al. (2016) that stated that addressing communication development in individuals who are DB should be embedded into everyday activity, provided in the context of natural environments, and with sufficient opportunities for social interaction.

According to the participants, peer-to-peer interaction is beneficial for the social and emotional development of students who are DB. This can be facilitated through group activities, cooperative games, encouraging turn-taking with peers, and initiating conversations with a partner. Most of the participants stated that they use different games to facilitate interaction among the students. Turn-taking on the other hand is very crucial in establishing effective communication and skills needed for interaction between peers and teachers. It is important to establish clear cues or signals that can indicate to the student when it is their turn to participate in the activity.

According to Hartshorne and Schmittel (2016), play is critical to a child's social and emotional development. Children interact with each other when they engage in play. This could foster reciprocity and develop turn-taking skills required for appropriate socialization. With regards to conversational/verbal instruction, participants stated that while students who are DB may not rely solely on verbal instruction, it is important to provide clear and concise spoken communication by utilizing different communication modes including tactile signing, gestures, or visual cues depending on the student's mode of communication. This is built into having a one-on-one session with the student. Participants stated that a one-on-one session allows for more focused

individualized instruction which enables the TSVIs to adapt teaching materials to the unique needs of the student and their abilities. It is essential to promote social inclusion by facilitating peer interactions, fostering relationships, and creating a supportive environment for the students.

Understanding Issues for Students

Students who are DB face unique challenges that require careful consideration and specialized support. Deafblindness involves a combination of hearing and vision loss, which significantly impacts communication. It can lead to social isolation due to limited communication and interaction opportunities. Students who are DB often have limited access to verbal and visual cues, making communication difficult. Participants stated that students may face challenges in receiving and expressing information, making it essential to explore alternative communication methods including tactile signing, tactile symbols, and assistive technology. This aligns with Kamenopoulou, (2012) that stated: “Communication is central to deafblindness and depending on the severity and complexity of hearing and visual loss, it is more than likely to cause difficulties in social interactions” (p.1). It is crucial to be aware of the uniqueness of every individual student who is DB, and that their specific needs may vary.

Another issue that came up was the issue of students with multiple/additional disabilities. The participants stated that students who are deafblind often have additional disabilities in combination with their vision and hearing loss making it difficult for them to perceive and interpret social cues such as nonverbal communication, facial expressions, body language, or auditory cues. Deafblindness

itself is considered a dual sensory impairment, and it is common for individuals who are DB to have other disabilities or challenges that impact their overall functioning. Most of the students have cognitive disabilities that affect their intellectual functioning, learning abilities, and problem-solving skills (Cmar et al., 2018; Correa-Torres, et al., 2021; Miles, 2008; NCBD, 2016). These disabilities can range from mild to severe and may impact their overall academic and cognitive development. Some of the students may have disabilities that affect their mobility and coordination, or motor skills. Some may have other developmental disabilities that can affect their adaptive skills, communication, and social interaction. Participants mentioned CHARGE, autism spectrum disorder, physical disabilities, and other developmental disabilities. These findings are in line with these studies Cmar et al. (2018); Miles (2008); and NCBD (2016) that stated that DB is accompanied by behavioral and emotional difficulties caused by a deficit in communication and interaction and sometimes complex medical needs and additional disabilities. It is significant to recognize that the combination of DB and multiple disabilities is unique to each student. The specific disabilities and their impact can vary greatly, requiring individualized support and accommodations to meet their needs effectively.

Expectations of parents and others continue to be an issue for students who are DB. When it comes to parenting a child with disabilities, including DB, it is natural for parents to have expectations for their child's development, education, and future. Parents desire their children to be successful academically and socially. However, it is important to approach these expectations with sensitivity and a realistic understanding

of the unique challenges faced by students who are DB (Correa-Torres, et al., 2021). Cara explained how some parents support their child's learning and some have low expectations, thereby not getting involved as much as they should. Although some parents may have high hopes and aspirations for their children, desiring that they achieve certain milestones, academic success, and independence, it is vital to set realistic expectations based on their abilities and needs. In addition, the participants emphasized the need for parents to collaborate with educators, specialists, and other professionals who have expertise in working with students who are DB, especially towards their transition to adulthood. Supporting this finding, Hersh (2013) stated that students who are DB are likely to have fewer opportunities to participate in physical activities in school due to overprotection by both parents and others.

Transitioning after high school can be a significant step for students who are DB as they move to a broader world. Most of the participants expressed their concern over transitioning of their students. They stated that most times students who graduate from high school end up in group homes depending on their cognitive abilities. Transitioning to adulthood should be one of the vital aspects of social skills. In planning for transition, it is reasonable to consider services that can be specifically tailored toward life after high school for students who are DB, including having an individualized transition plan for the students based on their capabilities. This individualized plan could address various aspects such as employment, independent living skills, and most importantly social integration. Accommodation to support the student's transition should also be the focus and these can include interpreters,

interveners, note-takers, or appropriate assistive technology and community services. Zatta and McGinnity (2016) in support of this finding stated that planning of transition for individuals who are DB should focus on the general well-being of the individual which includes living, loving, working, and playing.

Some of the participants stated that there is a need for the students who are DB and their families to connect with the community organizations, support groups, and advocacy networks that specifically support persons who are DB as they can offer a sense of belonging to the students as they transition into adulthood and into the community. Some of the participants in addressing students' transition issues explained that incorporating into their lesson plans, problem-solving skills to establish self-determination, self-advocacy skills to help the student communicate their needs, assert their rights, and face future challenges independently.

Understanding Issues for Teachers

Teachers of students with visual impairments encounter several challenges in teaching social skills to students who are DB. Some of these challenges are limited time and a large caseload. Due to the students requiring individualized instruction, participants stated that they need to plan and prepare materials, adapt their teaching materials and activities, and assess the progress of their students. All these require a sufficient amount of time. Since working with students who are DB requires collaboration with parents and other professionals, participants find it challenging to work with the team due to time constraints. Participants explained that they struggled to dedicate sufficient time and attention to each student due to the large caseload and

this was a result of the shortage of teachers for the DB which aligns with (Correa-Torres et al., 2021). One participant reported being the only TSVIs in the whole of her school district. Participants explained that with large caseloads, it is challenging to plan an individualized assessment and intervention for each student, potentially hindering accurate tracking of student's progress and making informed instructional decisions.

Participants expressed their concern over the shortage of professionals, including TSVI, interveners, and interpreters. Similar to the following studies (Bruce et al. 2018; Correa-Torres, et al., 2021; Huebner et al. 1995; Landa-Vialard et al. 2018; Okungu et al. 2020), this is a significant issue that affects the educational experience and social inclusion of students who are DB. Deafblindness limits access to communication and interaction. Students who are DB rely heavily on interpreters and interveners to facilitate communication with people around them. These professionals provide support to the student to interact with their environment. These professionals play a vital role in academics by providing access to information, ensuring equal participation, and facilitating interaction between teachers and peers. Socially, interveners and interpreters help bridge the gap of social isolation by facilitating communication for the student who is DB (Bruce et al. 2018).

The shortage of these professionals restricts the ability of the student to fully participate in activities in their social setting, difficulty in establishing relationships and participation in community social events. When there is no access to these

professionals it becomes challenging to meet the student's needs in the school environment.

Another issue is access to assistive technology. Over time, assistive technology for DB has evolved and is still evolving. Some of these assistive technologies include tactile communication devices, assistive learning systems, screen reading and magnifying software, and tactile graphic software that can assist both the teacher and the student to access information. Some of these devices convey information to the person who is DB, while some amplify sounds or use induction loops to transmit signals directly to the student's hearing aids or cochlear implants. However, participants expressed their concern over lack of access to these devices. This finding by Hartman and Weismer (2016) support the claim that technologies for persons with DB continue to evolve and pose a challenge to professionals. In support of this finding Montgomery (2014); and Okungu et al. (2020) stated that DB is a disability that requires highly specialized and expensive equipment services, and assistive technology that many states and districts find financially difficult to acquire for children who are DB.

Support and Resource Availability for TSVIs

Participants mentioned several resources that offer a variety of programs for teachers. For example, Perkins School for the Blind provides teachers with training, resources, and workshops that are specifically tailored towards enhancing the skills and knowledge of teachers working with students who are DB. The American Printing House for the Blind develops and distributes educational materials. Participants also

mention receiving services from various school districts, access programs, Texas Workforce Commissions, and Education Service Centers.

Participants emphasized the support they receive from their colleagues in the form of consultation. They collaborate and share experiences and ideas towards working with students who are DB. Colleagues provide supportive networking and share successful teaching strategies. Participants, in addition, state that they also connect with other professionals in the field of DB through social media forums which provide them a space to ask questions, share resources, and engage in discussions related to their students. Arndt et al. (2004) and Correa-Torres et al. (2021) stated that essential resources comprise a collaborative educational team that can contribute meaningfully to establishing valuable programs and activities that children with DB can share in.

Accommodations for Teaching Students who are Deafblind

Teaching students who are DB requires careful consideration and the use of specific accommodations to ensure their educational needs are met. Since DB is a unique disability that affects both vision and hearing, each student may have varying degrees of sensory loss that may require unique accommodation. Participants emphasized the development of an Individualized Education Plan (IEP) that is tailored toward the unique need of students who are DB. This requires involving the parents and other professionals in developing goals, strategies, and accommodations that address the student's specific challenges. In providing suitable accommodation for the student's needs, the participants explained that they assess the student's

communication mode, and based on that, they make necessary adjustments in choosing an effective communication method for the student. They mention a combination of tactile sign language, tactile cues, and object symbols. Some may require augmentative and alternative communication devices such as braille devices or communication boards.

Other assistive devices mentioned that support communication and access to information include hearing aids, screen readers, braille displays, amplification systems, fidget boards, headphones, magnifying tools, opaque 11 by 17 papers, slant boards, projection devices, CCTV, and large-screen laptops. In addition, participants explained that they create a sensory environment that minimizes distraction for the student and maximizes sensory input. Cala mentioned using preferred texture in creating teaching materials for the student, she also mentioned the use of dark room with bright light objects to focus the attention of her student. Most of the participants mentioned the use of interpreters and interveners while teaching. In general, the participants reported the use of multisensory techniques that utilize hearing, tactile, and other senses in teaching students who are DB. They emphasize the need for hands-on activities, using real-life experiences to reinforce concepts. This aligns with the study by Horvath et al. (2005) that stated that students who are DB may require different accommodations including braille, large print, or special lighting. Other accommodation for hearing, which included an interpreter or an auditory amplification device (e.g., FM system) and in some cases may require both vision and hearing accommodation.

The Need to Develop a Modified Social Skills Curriculum

Participants expressed concern about a lack of a modified curriculum specific to their students with dual sensory impairments. Developing a modified social skills curriculum for students who are DB requires a comprehensive understanding of their unique needs and challenges. These students face combined communication, sensory perception, and social interaction difficulties that need to be considered when designing an effective curriculum. Participants recognized that DB is a unique disability that requires a different curriculum that is different from students who have only visual impairment or students who are deaf alone. They explained that the social skills curriculum should be able to provide the students with opportunities to develop interactive skills such as turn-taking, active listening, and nonverbal communication. Teachers should incorporate group activities, role-playing, and real-life scenarios in a supportive environment into these skills. Furthermore, participants stated that they provide instructions on self-determination, problem-solving, and self-advocacy which should be embedded into the curriculum. In developing a social skills curriculum, it is crucial to remember that the DB population requires a specialized social skills curriculum that is unique to the students. Similarly, these studies Bruce and Borders (2015), Bruce et al. (2015), Correa-Torres et al. (2021), Jackson (2005), Hartman and Patricia (2016), and Horvath et al. (2005) support the need for a curriculum that the students who are DB can be actively involved in and can be specific to their unique needs.

The Need for Specialized Training for Teachers

Specialized training for teachers is critical to ensure that they have the requisite knowledge, skills, and resources necessary to effectively support their students who are DB. Students who are DB may face social isolation, limited peer interactions, and emotional challenges. Participants expressed the need for specialized training in the areas specific to DB to better serve their students. These areas include understanding the student's unique needs, communication strategies, sensory environmental concerns, social and emotional support, individualized instruction, and technological use. Some participants stated that they do not know nor understand sign language and rely on interpreters to convey information to the student. Eva stated that it took her time to realize that she needed to be in a particular position for her student to be able to hear her. Participants also expressed the need to grow with evolving technologies for their population. These studies support training for educators of students who are DB due to continuous changes in the needs of educators (Correa-Torres, et al., 2012; Correa-Torres, et al., 2021; McLetchie & Riggio 1997; Nelson & Bruce, 2016). Specialized training will help the teachers to understand specific challenges students who are DB face and equip them with effective strategies to address the challenges. Training will equip teachers with strategies to foster social inclusion, develop social skills, and provide appropriate emotional support to students who are DB.

Furthermore, training will accord the teachers the opportunity to learn and implement communication strategies, facilitating effective interaction and understanding between the teachers and their students. Teachers serving students who

are DB need to be knowledgeable about their sensory processing, environmental modification, and adaptation necessary to accommodate the student. In addition, training will provide teachers with knowledge and skills in utilizing and integrating assistive technology effectively into the learning environment.

It is important to note that the participants reported teaching different age groups of children who are DB. The major difference lies on the cognitive level of the student. However, those who have been teaching for one year seem to depend more on collaborating with their colleagues than those who have been teaching for a longer period of time. Additionally, those teachers who have taught for many years are more confident in stating the effective teaching strategies they use.

Implications for Practice

The result of this study provides the following suggestions for the field:

- Training for TSVIs in social skills: Advocate for training for teachers in the area of social skills to address the unique needs of individuals who are DB.
- Social skills curriculum development specific to students who are DB: there is a need to create a social skills curriculum that is specific to the needs of individuals who are DB. This curriculum would include all areas of social skills such as effective communication (e.g., speech, gestures, facial expression, body language), active listening, and emotional self-regulation. To fund this curriculum, a grant could be secured from the OSEP, U. S.

Department of Education (DOE) grant that funded “Hand-in-Hand: Essentials

of Communication and Orientation and Mobility for your Students who are Deafblind.

- **Advocating for parent training on social skills:** Advocate for parent training on social skills to ensure that the students are followed-up with the instructions received in classroom at home.
- **Accessible Communication:** Advocate for policies that promote accessible communication for students who are DB. This includes ensuring the availability of communication support services, such as qualified interpreters, interveners, communication devices, and AT. Encourage the development of tactile signing resources and the training of professionals in communication methods for the DB.
- **Professional Development:** Advocate for policies that prioritize professional development opportunities for educators and professionals working with students who are DB. Support training programs, workshops, and conferences that focus on DB, communication methods, and sensory integration. Ensure that professionals have access to ongoing learning opportunities to enhance their knowledge and skills required to work with students who are DB.
- **Research and Data Collection:** Support policies that promote research on DB and effective interventions. Encourage data collection on social skills interaction of children who are DB, access to services, and educational outcomes related to social skills. Use research findings to inform policy decisions and improve service provision.

Suggestions for Future Research

More research in this area is warranted by expanding to more participants to see if there will be similar results. Future research should focus on using both interviews and observation to assess social skills teaching strategies mentioned by the participants through interviews. Further research is recommended to explore specific interventions, curriculum adaptations, and teaching methodologies that are effective in promoting social skills for students who are deafblind.

Summary

This study discussed the findings as they relate to the research questions. Each theme was addressed accordingly. To summarize the points, improving effective communication and interaction for students who are DB involves adapting various communication methods, utilizing tactile and visual cues, facilitating turn-taking, promoting peer-to-peer interaction, and fostering problem-solving skills. These strategies may help create an inclusive and supportive environment, enabling individuals who are deafblind to actively participate and engage with others. By understanding these issues and implementing appropriate strategies, educators can create inclusive learning environments that empower students who are DB to reach their full potential and actively participate in their education. In addition, creating a modified curriculum specific to students who are DB, and investing in specialized training for teachers of students who are DB, educational institutions can ensure that students who are DB receive the highest quality education and support tailored to their unique needs. It can also empower teachers to create inclusive and accessible learning

environments where students who are DB can thrive academically, socially, and emotionally.

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APPENDICES

Appendix A

Interview Protocol

Demographic Questions

1. What do you identify as (gender)?
2. Do you have any disability?
3. What is your age?
4. What is your ethnicity?
5. What is your highest educational qualification?
6. Are you currently certified as a Teacher of Students with Visual impairments? If yes, what year did you receive your certification?
7. Do you currently teach students with deafblindness? If yes how long have you been teaching students with deafblindness?
8. What age group of students with deafblindness do you teach social skills?

Social Skills Questions

1. What components of social skills do you teach to students with deafblindness?
2. What teaching strategies do you utilize when teaching social skills to students who are deafblind?
3. What teaching strategy do you perceive to be the most effective?
4. What type of materials/resources do you utilize when teaching social skills to students who are deafblind?

5. Are there any issues you have encountered when working with students with deafblindness?
6. What accommodations do you utilize when teaching social skills to students with deafblindness?
7. Do you receive any resources and or support as a TSVI working with students with deafblindness? If yes, what type and from whom?
8. Are there differences when working with students in different grade levels?
9. Would you like to share any additional information?

Appendix B

Email Script to Individuals that can help Identify Potential Participants

Dear Sir/Madam,

My name is Chinomso Ihenagwam, and I am currently a doctoral candidate at Texas Tech University in the Special Education Program, College of Education. I am conducting a study on the experiences of teachers of students with visual impairments (TSVIs) teaching social skills to students with Deafblindness. Of specific interest are how socialization can be improved among students with Deafblindness. Also, how TSVIs can effectively provide adequate teaching opportunities to these students.

I am requesting that you email the attached information to the TSVIs in your region to request their interest in participating in this study. The participants will be asked to participate in one 45 to 60-minutes interview via Zoom.

This study is being supervised by Dr. Nora Griffin-Shirley and Dr. Phoebe Okungu who will be glad to answer any questions you may have. They can be reached via email at n.griffin-shirley@ttu.edu and phoebe.okungu@ttu.edu respectively. Your participation will allow for more insight regarding the experiences of students with Deafblindness as they learn social skills necessary for the interaction. Thank you.

Chinomso Ihenagwam

chinomso.ihenagwam@ttu.edu

Doctoral Candidate, College of Education

Texas Tech University

Appendix C

Email Script to Potential Participants

Dear Sir/Madam,

I hope this email finds you well. My name is Chinomso Ihenagwam, and I am a doctoral student at Texas Tech University in the Department of Special Education at the Texas Tech University's College of Education. I am conducting a research study on the experiences of teachers of students with visual impairments teaching social skills to students with Deafblindness.

I am reaching out for your assistance in conducting this research. For this study, I am looking for teachers of students with visual impairments teaching social skills to students with Deafblindness who are currently certified as TSVI with at least one-year experiencing teaching social skills to students who are Deafblind. I am including an information sheet that provides more details about this research. You will be asked to speak on your experiences as a TSVI teaching social skills to students who are Deafblind. Your participation is completely voluntary, and you can stop at any point in the study. will be asked to participate in one 45 to 60-minutes interview via Zoom.

If you feel that you could participate in this study, please feel free to contact me at chinomso.ihenagwam@ttu.edu. You may also contact the Human Research Protection Program at Texas Tech University for any questions regarding the rights of participants. Their phone number is (806)-742-2064, and their email is hrpp@ttu.edu. I am truly grateful for your time and consideration in helping me conduct this research. I look forward to hearing from you soon.

Thank you,

Chinomso Ihenagwam

Doctoral student

Special education

Texas Tech University

Appendix D

Study Description

Title: Experiences of Teachers of Students with Visual Impairments Teaching Social skills to Children with Deafblindness

What is this research project about?

The purpose of this study is to explore the experience of teachers of students with visual impairments teaching social skills to students who are deafblind. Of specific interest are how socialization can be improved among students with deafblindness. Also, how TSVIs can effectively provide adequate teaching opportunities to these students.

What would you do if you participate?

You will be asked to participate in one 45-60-minute interview where you will be asked a series of questions about your experience teaching social skills to children with deafblindness. You can select the date and time for the interview. Interview days and times will be set after you have expressed an interest in participating in the study. We will use your preferred communication method to schedule the interview day and time.

The interview will follow a semi-structured interview approach and will be conducted and recorded with your permission through Zoom. You will have an opportunity to review the transcripts via email if you would like to do so.

How long will my participation take?

The interview will last between 45 and 60 minutes.

Any Risks associated with the study?

The research does not pose any foreseeable risks to the participants.

Can I quit if I become uncomfortable?

Yes, you can quit the interview if you become uncomfortable. The research questions will be reviewed by the research committee members and the Texas Tech University Institutional Review Board and determine if you can answer them comfortably. Participation will be voluntary, and it will be your choice to participate in the study. You are free to stop answering questions at any time and discontinue the interview at any time you feel uncomfortable.

How are you protecting my privacy?

All participants will be assigned a pseudonym to be used in this study, and all study data will be securely stored in a passworded laptop. The only individuals privileged to review data will be the researchers.

I have some questions about this study. Who can I contact?

1. If you have any questions about this research study, you can contact Chinomso Ihenagwam via email at chinomso.ihenagwam@ttu.edu.
2. You may also contact Dr. Griffin-Shirley, who is supervising this study via email at n.griffin-shirley@ttu.edu and or Dr. Phoebe Okungu at phoebe.okungu@ttu.edu
3. TTU also has a board, the Institutional Review Board, that protects the rights of people who participate in research. You may also contact them with questions at (806) 742-2064. You may also contact them by mail at Institutional Review Board for the Protection of Human Subjects, Office of the Vice President for Research, Texas Tech University, Lubbock, Texas 79409.

How will I benefit from participating in this study?

There is no monetary compensation for your participation in this study. However, the participants will benefit from the knowledge that they contributed to the study that aims to understand the experiences of teachers of students with visual impairments teaching social skills to children with deafblindness.

How can I participate in this study?

If you would agree to participate in the study, please sign this document and email it to me at chinomso.ihenagwam@ttu.edu.

If you have questions about your rights as a research participant, contact the Human Research Protection Program, Office of Research and Innovation, Texas Tech University, Lubbock, Texas 79409. You can contact them at 806-742-2064 or email at hrpp@ttu.edu.

Signing this document means that the research study, including the above information, has been described to you, and that you voluntarily agree to participate.

Signature of Participant

Date

Printed name of Participant