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SUPPORTING STUDENTS WHO ARE DEAFBLIND TO INCREASE THEIR ACCESS TO THE GENERAL EDUCATION CURRICULUM THROUGH TRAINED INTERVENERS: A MIXED METHODS STUDY

Ira Padhye
Virginia Commonwealth University

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SUPPORTING STUDENTS WHO ARE DEAFBLIND TO INCREASE THEIR ACCESS TO THE GENERAL EDUCATION CURRICULUM THROUGH TRAINED INTERVENERS: A MIXED METHODS STUDY

A dissertation submitted in partial fulfillment of requirements for the degree in Doctor of Philosophy at Virginia Commonwealth University

by

Ira Padhye

Bachelor of Science, Biology, University of Massachusetts Boston, 2008

Masters in Education, Severe and Low Incidence Disabilities, Boston College, 2012

Chair: Yaoying Xu, Ph.D.

Professor, Department of Counseling and Special Education

Virginia Commonwealth University

Richmond, VA

November 2023

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Dedication

This dissertation is dedicated to the first student I worked with when I started in this field, Slater! I was a young twenty-two-year-old residential teaching assistant, without any experience or training, but you never made me feel less than. Being your friend just made sense to me. Some of my favorite memories are of us walking around the Perkins Campus talking about our favorite holidays, penguins, shapes, numbers and anything else we felt like chatting about that afternoon. Thank you for putting up with a newbie and being patient as I learned how to be the best support person I could be for you. I feel so lucky to have been a “blip” in your journey to being the beautiful young lady you are today. You have shown me what it means to be resilient and brave and I will be forever thankful to you for making me fall in love with teaching.

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Abstract

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Ira A. Padhye

Virginia Commonwealth University, 2023

Director: Yaoying Xu, Ph.D.

The purpose of this mixed-methods research study was to identify the educational trends of children and young adults who are deafblind and identify strategies to improve the outcomes through interviews of nationally qualified interveners who have received training in deafblind specific strategies. Secondary data from the 2017-2021 National Center on Deafblindness and interview transcripts were used for data analysis and then integrated to identify the supports students who are deafblind should access. Trends in age of identification, primary eligibility category, school settings and access to state standardized assessments showed a plateau and displayed no significant improvement in educational outcomes. Nationally qualified interveners were interviewed and provided anecdotal data on the importance of training and how that

supported the increase in communication and academic outcomes for their students who are deafblind. Recommendations include the importance of early identification and appropriate eligibility label for students who are deafblind and trained personnel in the role of the intervener.

Keywords: deafblind, deafblindness, intervener, intervener training

Chapter 1

Introduction

Students who are deafblind[1] do not have the same level of access to their education as their peers without sensory impairments. As a low incidence disability making up about 1% of students receiving services under the Individuals with Disabilities Education Act (IDEA, 1997; IDEA, 2004; United States Department of Education, National Center for Education Statistics [NCES], 2023), deafblindness is a disability of access. Because most of the content taught in schools is done through auditory and visual pathways, students who are deafblind may miss much of the visual and auditory information shared in the classroom. The gap in sensory input may cause significant delays in a child's communication development and often students who are deafblind do not reach a symbolic level of communication (Bruce, 2005).

Students who are deafblind who experience delays should be provided services under the Individuals with Disabilities Act (IDEA), ensuring that all eligible students with disabilities be provided with free and appropriate public education, including related services, to meet the unique needs of the individual (IDEA, 1997; IDEA, 2004). Through the reauthorization of IDEA in 2004, the legislation emphasized the development of highly-qualified personnel who work with students with disabilities, which includes special education teachers, general education teachers, paraprofessionals, interpreters and other related service providers. Due to the varying degrees of vision and hearing loss among these children and young adults, students who are deafblind are considered to be a heterogeneous group of individuals with disabilities. In addition, according to the 2021 National Child Count of Children and Young Adults who are Deaf-Blind,

[1] There are many forms of the term "deafblind", including deaf-blind, Deaf-Blind, DeafBlind. The various terms reflect the differentiation in cause as well as personal identities within the DeafBlind culture. For consistency, the author will be using "deafblind" unless referencing organizations or direct quotes.

approximately 87% of the children, birth to 21, reported had at least one additional disability, such as speech language impairments, orthopedic or physical impairments or complex healthcare needs, 43% of the students reported had four or more additional disabilities and only 13% did not have additional disabilities. Due to this type of heterogeneity, the accommodations needed to access their environment varies from student to student. Moreover, all students who are deafblind do not receive the same amount of visual and auditory information as their peers without sensory losses. With deafblindness being a disability of access, it impacts an individual's communication, conceptual development and overall learning.

Access to Education

Students who are deafblind do require additional support when accessing education as compared to their peers without sensory losses. In order to develop conceptual understanding of the world, individuals who are deafblind require more direct hands-on learning opportunities (Alsop et al., 2002; Alsop et al. 2007; Hartman, 2012; Watkins et al., 1994). For individuals who do not have sensory loss, more than 80% of the information they receive and develop a conceptual understanding involves incidental learning, or learning through observation (Sheriff & Hallak, 2015). Through the use of their visual and auditory senses, they are able to understand through simple observation how people and objects within their world interact. For an individual who is deafblind, incidental learning is not effective and therefore in order to support an individual who is deafblind understand and develop concepts, direct learning, or hands-on learning opportunities need to be curated. For example, when you are teaching a student who is deafblind about parts of a plant, it is important to first understand their prior experiences with plants. Providing a two-dimensional picture of a plant when a child has never been provided an opportunity to touch or interact with an actual plant, is not going to be as meaningful and create

the level of understanding that is need to develop the concept of “plants”. In order for an individual to understand parts of a plant, the adult facilitator, or in many instances the teacher, will provide the student with an actual plant that they can interact with, feel the different parts of the plant and how they may differ from one another. Direct learning opportunities as well as repetition can support an individual who is deafblind learn and understand these concepts and build their knowledge. The longer a child who is deafblind is not provided with direct learning opportunities, the gap in their conceptual understanding when compared to their peers without sensory losses, continues to grow and often children who are deafblind will not be able to catch up (Sheriff & Hallak, 2015).

The Every Student Succeeds Act (ESSA) of 2015 addresses the need that *all* students in the United States be taught to high academic standards and ensure they are prepared for life after school, whether that be in college or their careers. Students who are deafblind should be set to those high standards as well, which includes accessing the general education curriculum. In order to bridge the gap in conceptual understanding, students who are deafblind need trained facilitators who understand the impact of combined sensory loss and the implementation of best practices for this low-incidence population of students. In many instances, that trained facilitator may be a teacher, a classroom paraprofessional or an intervener (Alsop et al., 2002; Alsop et al. 2007; Hartman, 2012; Watkins et al., 1994).

Role of the Intervener

The role of the intervener is not widely recognized in the United States (National Center on Deaf-blindness, n.d.). Even though the most of the country has yet to accept the position in the classroom there are legislative developments that appear to be in support of the intervener. In 2018, Office of Special Education Programs (OSEP) of the U.S. Department of Education

provided the Deaf-Blind Technical Assistance and Dissemination Network with informal guidance stating that interveners can be considered related services if the student's Individualized Education Plan (IEP) team determines the service necessary in order for the student to receive "free and appropriate public education" (Ryder, 2018). Furthermore, the "Alice Cogswell and Anne Sullivan Macy Act" (2021) was reintroduced in the House of Representatives as a bipartisan bill designed to increase identification and educational resources and support for students who are deaf or hard of hearing, blind or visually impaired and deafblind. According to the 2021 National Deaf-Blind Child Count, 10,441 children and young adults who are deafblind are being served under Part C and Part B of the Individuals with Disabilities Education Act (IDEA). More than 10,000 students are currently receiving educational services without the support of a trained intervener.

In order to become a nationally qualified intervener, there are two routes: credentialing and certification routes. Content of the training programs leading to national qualification addresses the knowledge and skills outlined by the Council of Exceptional Children's Paraeducator Intervener for Individuals with Deafblindness competencies (CEC, 2022). Central Michigan University (CMU) and Utah State University have higher education programs. CMU requires the completion twelve credits of course work with grades of "B" or better and 200 or more classroom practicum hours. USU requires the completion of three courses, a total of six continuing education units (CEU). Both universities have three coaching visits embedded into the curriculum from an expert in the field of deafblindness. Coaching visits allow the program participant to receive feedback on skill implementation. Central Michigan University provides certification through the National Resource Center for Paraeducators, Interveners, and Related Service Providers (NRCPara). NRCPara approves CMU's coursework and ensures that all CEC

Competencies are addressed. Participants in the USU program were credentialed through NRCPara until 2019 and are now credentialled through the National Intervention and Advocacy Association (NIAA). The National Intervener Certification E-portfolio (NICE) certification process is through the Paraprofessional Research and Resource Center (PAR^{2}A Center). The NICE Review and Advisory Board meets regularly to address updates or changes in the policies and practices. Content is provided through State Deaf-Blind Projects or state schools for the Deaf or blind using the Open Hands Open Access Deaf-Blind Intervener Modules or a series of structured workshops, which are also aligned to the CEC competencies. Both the credentialing and certification processes require a submission of a portfolio. The CMU program supports the development of the portfolio throughout the program and the USU program has their participants develop their portfolio during their final course. Both CMU and USU have their instructors approve the portfolio before it is submitted to NRCPara for review. The NICE portfolio, developed with the support of the mentor, is scored by at least two experts in the field of deafblindness who are also trained NICE reviewers. The portfolio requires a passing score of 75% with an 80% Interobserver agreement between the two NICE reviewers. All three training options require recredentialing or recertification every five years through accumulation of CEUs through professional development (Kennedy, 2021; Kennedy et al. 2022).

The purpose of this study was to identify the educational trends for students who are deafblind and identify approaches to improve communication and academic outcomes through interviews of nationally qualified interveners who received training in deafblind specific strategies. There was a significant gap in the empirical research in identifying the impact of professional development and training for individuals in the role of the intervener has on student outcomes.

Literature Review

Educators who work with students who are deafblind require an understanding of evidence-based practices identified specifically for students with this particular low-incidence disability. Strategies developed for students with autism, learning disabilities or emotional and behavioral disabilities may not be impactful for students who are deafblind as they do not factor in the lack of access to visual and auditory information. Although research in the field of deafblindness is limited, communication and literacy are the more developed research areas within this low-incidence disability. Research focusing on effectiveness of the implementation of best-practices focused mainly on teachers and related service providers rather than paraprofessionals.

Communication and Literacy for Students who are Deafblind

Children who are deafblind, due to their level of vision and hearing loss, cannot access language models in order to develop communication skills. Most students who are deafblind will most likely have significant delays in communication development and will have difficulties acquiring formal language. (Bruce, 2005). The traditional definition of "literacy" often does not include individuals who have yet to develop more formal language skills. Individuals who are early or prelinguistic communicators are excluded from this traditional definition. Subsequent research utilizes a newer definition of literacy. This definition suggests that literacy begins at birth and can range from a vast array of media and materials to include *all* learners, including those who are prelinguistic communicators. (Luckner et al. 2016; McKenzie & Davidson, 2007; Parker & Pogrund, 2009). More importantly, the newer definition of literacy considers communication forms to be an integral part of literacy development.

Professional Development for Paraprofessionals

The difference between a paraprofessional and an intervener is the training in deafblind specific strategies that interveners receive (Alsop et al. 2002). In several of cases, classroom paraprofessionals are providing students with intervener-like services (NCDB, 2013). Watkins et al. (1994) is the most recent study to focus on the impact of trained interveners. However, the participants of the study were interveners in early intervention settings. Kennedy (2021) also identified that while it is important for individuals in the role of the intervener to have training, having the opportunity to reflect on their practice is also an important component in their effectiveness. Having a paraprofessional without training can hinder the educational opportunities students need to show growth (Giangreco et al. 2010). Since research is limited on the impact of trained interveners, it is important to identify literature around training and professional development offered to classroom paraprofessionals.

As support staff in the classroom, many paraprofessionals working with students with severe and multiple disabilities, including deafblindness, facilitate communication within the classroom (Bingham et al. 2007; Breton, 2010; Brock & Carter, 2015; Fisher & Pleasants, 2012). Classroom support staff require appropriate training in instructional strategies and understanding of augmentative communication devices students are accessing in order to increase the student's communication skills. Bingham et al. (2007) provided a training package to paraprofessionals around communication facilitation. This specific training program included the overlap between communication and behavior and the use and prompting of an augmentative communication device presented to their students with disabilities. With guidance and coaching through the training program, paraprofessionals increased their number of responses to their students' communication as well as redirected their students to use their AAC devices rather than fall back on unconventional communication, such as maladaptive behaviors.

Similar to the training interveners receive for national recognition, Brock and Carter (2015) compared the efficacy of an on-going training and coaching model of professional development to a stand-alone one-time workshop. The study focused on providing paraprofessionals with on-going video-based coaching in order to support the implementation of constant time delay. The coaching provided paraprofessionals with the ability to generalize the strategies over various activities and lessons throughout the school day. Specific results of this study indicated that providing coaching and feedback increased the implementation fidelity for the paraprofessionals.

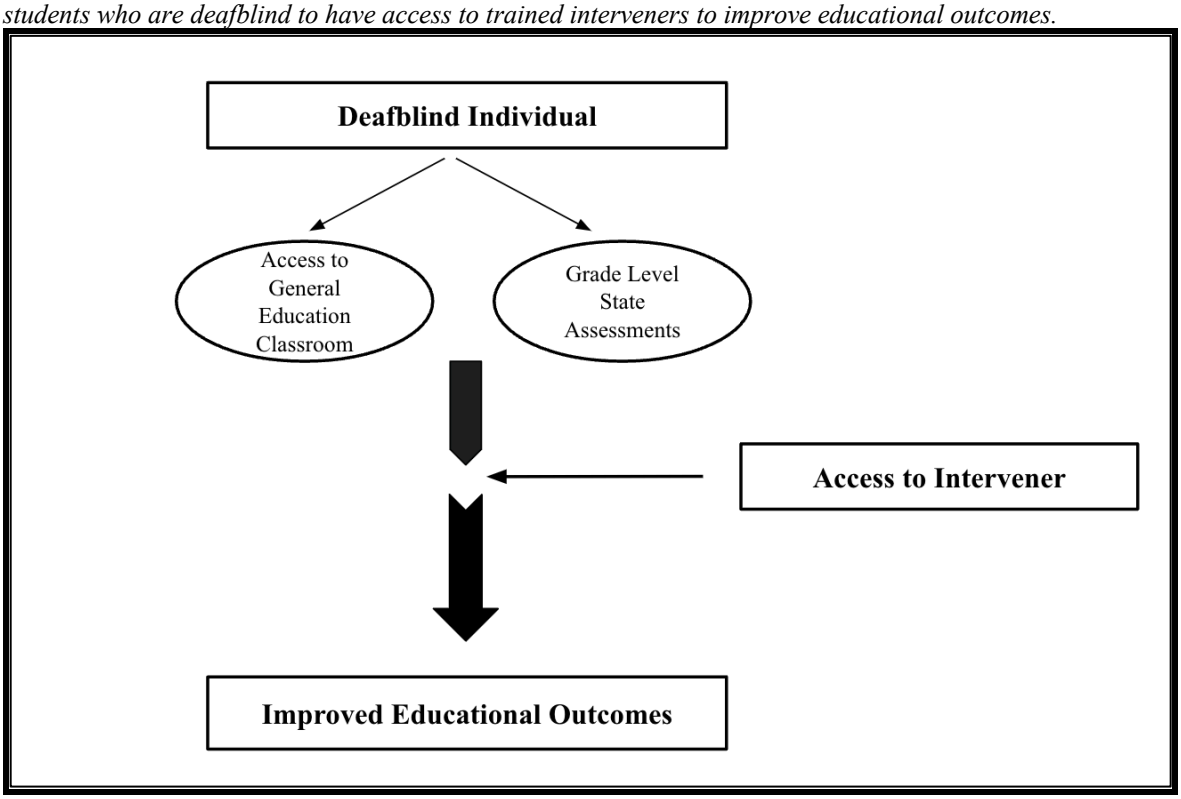
Conceptual Frameworks

Students who are deafblind require direct, hands-on learning strategies in order to develop concepts and understanding (Alsop et. al, 2010) in the most impactful way. While a majority of school-based instruction occurs using primarily vision and hearing, students who are deafblind require meaningful experiences and interactions with their environment in order to learn. The idea of creating direct learning opportunities ties into the Constructivist Learning Theory and Vgotsky's Socio-Cultural theory, which specifically state an individual constructs ideas and knowledge by interacting with external stimuli as well as relying on adults and peers to facilitate the individual's learning if the individual themselves are not able to carry out the task themselves (Vgotsky, 1978,1986; Reid et al. 1994; Panwar et al. 2016). In order to appropriately provide access to the general education curriculum, having qualified personnel is key (Figure 1).

For students who are deafblind, accessing the general education curriculum is fractured because of their sensory loss. In order for these students to get the most out of their education, they need the support of a trained adult who can provide them with the supplemental visual and auditory information. Adult facilitators, such as interveners, who have the necessary training can

provide them with the sensorial information and therefore allow students to get the maximum benefit from their experiences, which then promotes academic success.

Figure 1.
Constructivist Learning Theory and Vgotsky's Zone of Proximal Distance combined to demonstrate the need for students who are deafblind to have access to trained interveners to improve educational outcomes.



Research Questions and Methodology

The literature review identified the significant research gaps in how to improve outcomes for students in the educational setting with the support of trained staff in the role of the intervener. Communication development is the one of the most researched areas in the deafblind population, however there is no current research on how to provide professional development to classroom personnel who are in the role of the intervener. Although the population of students who are deafblind is heterogeneous, the overall educational outcomes of students who are deafblind have not been explored. Trained personnel who have a clear understanding of the uniqueness of this disability and implementation of best practices, students who are deafblind

can improve their educational outcomes (Alsop et al., 2002; Alsop et al. 2007; Hartman, 2012; Watkins et al., 1994). By having the support of a trained intervener, more students who are deafblind could increase their time within the general education classroom and access grade level academics. The study utilizde a mixed methods research design using secondary data from the National Center on Deafblindness as well as interviews from nationally qualified interveners. The following questions are addressed:

1. What are the trends in educational placements and access for students who are deafblind receiving IDEA services within the last five years?
2. How do interveners promote communication development and academic achievement for students who are deafblind?
3. How can trained interveners improve educational access for students who are deafblind?

The mixed methods research design used a convergent design, in which the quantitative and qualitative data are collected independently. Results are then integrated and analyzed together to determine findings. The quantitative and qualitative data to address the research questions were previously collected separate from each other (Watkins, 2023). The mixed methods approach is appropriate especially due to the fact that analyzing one set of data was not be sufficient to thoroughly address the research questions (Cresswell and Clark, 2018). The two data sources that were analyzed and integrated were already collected for other purposes and were be considered secondary data for the purposes of the current study.

The quantitative data used for the study was the National Child Count of Children and Young Adults who are Deaf-Blind (Deaf-Blind Child Count) from 2017 to 2021. This data has been collected annually by each state deafblind project, including U.S. territories and submitted to the National Center for Deaf-Blindness and then reported out. The Deaf-Blind Child Count

data include all students, birth to 21, who meet the federal definition of "deafblind". The information collected includes population demographics, such as age, gender, ethnicity and race, level of vision loss, etiology, presence of any additional disabilities, educational setting and living setting (NCDB, 2023). To observe the trend of the educational access students who are deafblind receive, the study will be focusing on educational environments (e.g. in a general education classroom more than 80% of the day, in a general education classroom less than 40% of the day, self-contained classrooms, separate schools, etc.) and the type of state-wide assessments they are participating in (e.g. regular grade level, regular grade level with accommodations, alternate assessments, etc.). The variables for the quantitative portion of the study were only collected on students aged 6 to 21 years. The data was extracted from the published Deaf-Blind Child Count by the researcher and reviewed by a secondary reviewer. The data derived and organized from the Deaf-Blind Child Count were calculated into percentages and represented graphically using a line graph.

The qualitative data for the study were four interviews of nationally qualified interveners conducted in 2019. The interviews were collected in 2019 for a class assignment for "Qualitative Research Methods". The interviews were transcribed in 2019 using the transcription software, Otter.ai, de-identified, and recordings were deleted upon transcription. Only de-identified transcripts of the four interviews are available for analysis. The codebook (Appendix D) used to transcribe the interviews was created using three literature reviews identifying evidence-based practices for students who are deafblind (Bruce et al. 2018; Bruce et al. 2016; Luckner et al. 2016). Interviews were coded individually by two researchers using Atlas.ti © and then calibrated together to ensure reliability. The trends identified through the quantitative data and the findings from the interview transcripts were integrated and interpreted.

Chapter 2

Review of Literature

The previous chapter identified the limited research around the impact the intervener has on students who are deafblind, but acknowledged the need for professional development around communication strategies for educators including classroom paraprofessionals. Chapter 2 will provide a review of empirical research studies on communication strategies as well as professional development on the strategies for students who are deafblind and professional development for paraprofessionals. The purpose of this literature review is to summarize the related literature and identify the gaps in research around professional development for professionals in the role of the intervener. The chapter will conclude with the research questions that were derived from the literature review and identified gaps.

Communication for Students who are Deafblind

Communication is most commonly defined as an interaction in which information is exchanged through messages that are then interpreted by the communication partner (Janssen et al. 2003; Woltius et al. 2019). Communication is one of the most impacted domains of an individual who is deafblind. Due to the variability of the disability, students who are deafblind can have a diverse range of communicative abilities, ranging from delayed speech development to an absence of any type of intentional behavior (Rowland, 2011). The lack of sensory input has the possibility of creating significant delays in developing symbolic communication. Developing symbolic communication occurs when the individual begins to refer to objects, places, people, etc. without the need to manipulate or interact with the referent (Park, 1997; Rowland and Schweigert, 2000). For example, using vocalization “cah”, gesturing or signing “drink” when the individual is seeking a “cup” would be an example of symbolic communication. For individuals

who do not have sensory impairments, developing symbolic levels of communication occurs by observing repeated interactions with others and having the ability to mimic what they have observed. For individuals who are deafblind, observing their environment and how others interact with objects and individuals does not occur effectively if at all (Bruce, 2005). However, it is important to understand what communication may look like for students who are deafblind before exploring the strategies needed to help support the development of symbolic communication.

Rowland (2011) developed the Communication Matrix as an assessment tool for students who are deafblind and others with complex communication needs. The structure of the Communication Matrix breaks down communication by the four reasons to communicate and by the seven levels of communicative competence (Table1; Table 2). The Communication Matrix will provide a basis for what is considered to be communication.

Table 1.
Seven Levels of Communication with Examples

Communication Level		Examples
I.	Pre-intentional Behavior	Reflexive responses (e.g. cries when hungry)
II.	Intentional Behavior	Body movements, facial expression, eye gaze
III.	Non-conventional Communication	Body movements, facial expressions, eye gaze, simple gestures (e.g. tugging on communication partner's arm to gain attention)
IV.	Conventional Communication	Conventional gestures (e.g. pointing, pushing away)
V.	Concrete Symbolic Communication	Objects or pictures that are used as symbols, iconic gestures (e.g. patting seat to represent "sitting down")
VI.	Abstract Symbolic Communication	Speech, manual signs, braille or printed words (using only one utterance at a time)
VII.	Formal Symbolic Communication	Combining more than two symbols (speech, signs, braille, printed words) following grammatical rules

Note. Citation: Rowland (2011).

Table 2.
Function and Intent by Levels and Reasons to Communicate

Level	Intent			
	Refuse	Obtain	Social	Information
I	A1. Expresses discomfort	A2. Expresses comfort	A3. Expresses interest in other people	
II	B1. Protests	B2. Continues an action B3. Obtains more of something	B4. Attracts attention	
III		C2. Request more of an action C3. Requests a new action	C8. Requests attention Shows affection	
IV	C1. Refuses/rejects something	C4. Requests more of an object C5. Makes choices C6. Requests new objects	C10. Greets people C11. Offers things/ shares	C14. Answers "Yes" and "No" questions C15. Ask questions
V			C12. Directs someone's attention to something C13. Uses polite social forms	
VI		C7. Requests objects that are absent		C16. Names things or people
VII				C17. Makes comments

Note. Citation: Rowland (2011).

The sequence of communication development for students who are deafblind also follows the communication levels outlined by the Communication Matrix. It is imperative for educators to understand the correct sequence of communication because introducing a higher-level mode of communication than the student is ready for can potentially hinder the student's growth (Bruce, 2003). Bruce et al. (2016) also stated that communication partners need to understand the appropriate sequence of communication in order to create goals and monitor development. The Layer Communication Model (LCM) is another approach similar to the sequence outlined by Rowland (2011) which looks at three layers of intersubjective development in relation to

typically developing children (Wolthius et al. 2019). Each of the three stages incorporate characteristic communicative behaviors and milestones. The primary layer, which is usually present in children 0 to 9 months, identifies imitation, mutual attention, affective involvement and turn-taking as characteristic behaviors. The secondary layer, usually developed between 9 to 18 months, includes joint attention, imitative learning and naming objects as characteristic communicative behaviors. Finally, the tertiary layer, developed in children 18 months to 6 years of age, includes perspective-taking (e.g. talking about future and past events, understanding others' emotions; Wolthius et al. 2019). LCM was initially developed with the interaction between mother and child in mind, however students who are deafblind may be delayed in developing communicative competence and therefore the LCM model can be also used with the student and educator in mind.

Augmentative and Alternative Communication

Communication can vary between individuals with deafblind. The homogeneity of the disability causes individualized needs within communication systems as well. Students who have yet to reach the "Abstract Symbolic Communication" level (Rowland, 2011) need the support of communication systems that are accessible at their current level. Research was conducted on augmentative and assistive communication systems focusing on body positioning, simple gestures and movement, and tactile object systems. Focusing on the use of these types of communication systems can help bridge the gap between intentional behavior to abstract symbolic communication (Rowland & Schweigert, 2000).

Tangible symbols are partial or whole objects that can be manipulated physically and share physical characteristics of the actual object or activity they represent (Trief, 2007; Trief et al. 2010). These objects can be embedded into daily routines and represent labels for activities,

locations and other choice-making categories. Rowland and Schweigert (2000) state that tangible object symbols are real whole or partial objects mounted onto cards. The symbols selected to represent activities or locations should be meaningful to the student and be physically similar to the object being represented.

The appropriate method of introducing and increasing comprehension of tangible object symbols is by incorporating them naturally into daily routines. Students who are deafblind increased their recognition of tangible symbols when they were presented to the students within the context of the actual activity rather than asking them to identify the symbol without context (Trief et al. 2010). For example, a student is more likely to identify and understand the symbol for "circle time" when presented during circle time rather than asking them, "Can you find the 'morning circle' symbol?" outside the activity.

For students who are deafblind, physical positioning also plays an important part in a student's access to communication. Students can have a variety of different visual impairments, such as acuity loss or field loss, as well as different auditory impairments. Students with limited voluntary movement and limited vision require being in the optimal physical position to successfully communicate. Bonnike et al. (2018) focused on the impact social positioning has on the rate of expressive communication. In order to create opportunities for students who are deafblind and have limited mobility, they need to be positioned in a manner that provides them with access to maximize their vision and hearing in order to have the best chance for a successful communicative interaction (Bonnike et al. 2018).

Direct and Meaningful Learning Opportunities

Because deafblindness is such a unique disability, educational strategies that work for students with other disabilities may not be appropriate for students who are deafblind. In order

for students who are deafblind to increase their level of expressive communication they require several supports from their environment, including their instructors. One of the most important strategies that needs to be in place for a student who is deafblind, is direct instruction (Heller & Allgood, 1996; Heller et al. 1996; Luckner et al. 2016; Park et al. 2008).

There are three different types of learning: incidental, secondary and direct learning. Incidental learning refers to learning through observation. Secondary learning refers to learning through a secondary source, such as a book or a lecture. Direct learning involves hands-on experiences. For individuals without sensory loss, a significant amount of learning occurs through incidental learning (Alsop, 2010). However, for individuals who are deafblind, incidental learning is often non-existent. Individuals who are deafblind require direct hands-on learning experiences to develop concepts and in turn develop expressive communication (Alsop et al. 2002). Therefore, instruction for communication development may look significantly different for students with deafblind in comparison to other students with disabilities.

For students who are deafblind, knowledge and communication develop through meaningful experiences. Meaningful experiences included creating reasons within natural settings for the students who are deafblind to communicate. Heller and Allgood (1996) and Heller et al. (1996) designed studies in the students' vocational placements. Students had defined routines and instructional personnel created opportunities for the student to communicate. For example, when having a step-by-step assembly station, staff may leave out an integral piece of the routine, which would then prompt the student to initiate a communication. The students also had direct access to their modes of communication (e.g., picture symbols).

Direct and meaningful opportunities also include child-directed strategies. Research has shown that creating responsive environments where adults recognize, interpret and respond to

children's behaviors increases their own self-efficacy (Janssen et al. 2006). For children who are deafblind, those interactions with other adults may not be harmonious. The lack of recognition in communication attempts has the ability to create discourse in the form of emotional insecurity as well as an increase in aggressive or maladaptive behavior, anxiety and self-stimulation (Janssen et al. 2003).

Professional Development for School-Based Personnel

An important theme of training professionals in communication strategies developed when specifically looking at strategies to improve communication for students who are deafblind. With the lack of focus on deafblind specific teaching strategies presented in teacher preparation programs, teachers are mainly looking for additional support in understanding (1) the unique needs of students who are deafblind in comparison to students who are deaf/hard of hearing or blind/visually impaired alone, (2) evidence-based teaching practices and (3) resources for educators to access additional information on the disability (Correa-Torres et al. 2021). Special education teachers require in-service preparation to fill in the gaps they might have when first working with this unique population of students. Studies that were identified as beneficial for communication development emphasized the importance of training the educators implementing the strategies (Bruce, 2002; Bruce, 2003; Bruce, 2008; Bruce et al. 2004; Wolthius et al. 2019). Each strategy being studied specifically incorporated a training phase and ensured all educators were proficient in the implementation.

All studies focusing on in-services for communication strategies had classroom special education teachers as their participants. In-service trainings the teachers received provided them with the content knowledge needed to understand the wide spectrum of communication occurring among their students who are deafblind.

Paraprofessionals

Paraprofessionals often provide intervener-like services within the classroom to students who are deafblindness. However, there is a lack of training that is provided to them on the specific disability that could make them more effective in their role. With research on the impact of trained interveners being extremely limited, it is important to explore the research on training paraprofessionals receive. More than 450,000 paraprofessionals provide support to students aged 6-21 receiving special education services under IDEA (U.S. Department of Education, 2017). The role of the paraprofessional has dramatically changed and become more of an integral part of the special education services students receive and are often expected to provide direct instruction to students, especially students with significant support needs. However, they receive minimal training in preparation for their role (Fisher & Pleasants, 2012).

When exploring paraprofessionals' perceptions of the role, Fisher and Pleasants (2012) identified that paraprofessionals were expected to mainly be (1) behavioral and social support, (2) implement teacher-planned instruction, (3) supervise students, (4) personal care support, (5) attend planning meetings, (6) adapt lesson plans designed by General Education Teachers and (7) relay information between the Special Education Teacher and General Education Teacher. The main concern paraprofessionals mentioned was the expectation to implement direct instruction to students without much guidance from supervising teachers. Providing support in the form of training is key for these paraprofessionals to be more effective in their role (Fisher & Pleasants, 2012).

Giangreco et al. (2010) stated having a paraprofessional with a lack of appropriate training can hinder the growth and educational opportunities given to a student with disabilities. Understanding that professional development is critical for those who are expected to provide

direct instruction, it is critical to understand what format of training will be most effective. The most commonly used method of providing training to paraprofessionals is single day trainings or workshops, which appear to be ineffective in the follow through and implementation of newly learned strategies (Barnes et al., 2011; Hall et al., 2010). The most effective way to provide training to paraprofessionals includes pairing a workshop with on-site mentoring and coaching (Brock & Carter, 2015). Brock and Carter (2015) implemented a Video Modeling Plus Abbreviated Coaching (VMPAC) training package on constant time delay to paraprofessionals consisting of an initial training workshop followed by opportunities to demonstrate comprehension of strategies through role playing and video coaching. Through the VMPAC training method, paraprofessionals were able to implement constant time delay strategies with high levels of fidelity.

Discussion

The intervener is a classroom-based paraprofessional who works consistently one-on-one with a student who are deafblind and has specialized training in deafblind specific strategies. The role of the intervener is to develop a meaningful trusting relationship with the student who are deafblind by providing the student access to information from the environment that would be accessible through vision or hearing to an individual who are not deafblind (Alsop et al. 2002; Alsop et al. 2010). With the lack of awareness and acceptance of the intervener as a proper position on the student's IEP team, often intervener-like services are provided to the student by an untrained paraprofessional (NCDB, 2013). With only one study focusing on the role of the intervener and the impact on students who are deafblind (Watkins et al. 1994), there was a clear and significant gap in the literature. However, this literature review identified several key factors that will lead to the development of the research questions and study.

The first theme identified in the literature review was the need to not only understand the uniqueness of deafblindness but understand that students who are deafblind require a different approach to teach them communication. Students who are deafblind require direct and meaningful instruction to develop conceptual understanding of the world around them which will sequentially lead to develop expressive and receptive communication skills. First and foremost, educators for these students needed to understand the specific impact of their sensory loss. Once they fully understood the level of vision and hearing their students had, they altered their interactions in order for their students to fully access the information provided to them.

The second theme identified was the need for educators to understand the spectrum of communication and what behaviors and characteristics are actually communication attempts by their students. Communication can range from reflexive behaviors or "pre-intentional behaviors" all the way to formal language (the use of speech, sign language, written word). Students who are deafblind often do not make it to a more abstract levels of communication because they do not have access to trained educators proficient in deafblind specific communication strategies. In order for students to bridge the gap between unconventional behaviors to formal communication, they need access to augmentative and assistive communication systems, such as the use of tangible object symbols. By embedding these communication systems into daily routines and having continuous access in meaningful ways increased their recognition of the symbols.

The third theme focused on the importance of trained paraprofessionals in the classroom. Paraprofessionals are the ones who often provide direct instruction to students with the most significant disabilities, including deafblindness. However, paraprofessionals are not provided with sufficient training to carry out the duties that are expected of them. By creating a training package that includes coaching and mentoring to the paraprofessionals has the ability to increase

fidelity in their implementation. Paraprofessionals need to have access to disability specific training in order to provide high quality services to students with disabilities.

The literature review helped identify significant gaps in the literature regarding the impact of having trained paraprofessionals and interveners can have on outcomes of students who are deafblind. The review identified key themes of needing to understand the specific strategies required for students who are deafblind to develop symbolic levels of communication and language which can then support the understanding of conceptual development and increased educational outcomes as well as the impact of professional development for classroom paraprofessionals have on student-based outcomes. The gap in literature supporting this research study of improving outcomes for students who are deafblind by providing the paraprofessionals who are in the role of the intervener with necessary training and professional development.

Research Questions

The themes and gaps in the literature have helped in creating the research questions for this study. By identifying the best practices for developing communication and literacy, need for key professionals to understand and implement deafblind specific strategies and the need for paraprofessionals to receive high quality professional development supported the development of the three research questions that will guide the study:

1. What are the trends in educational access for students who are deafblind receiving IDEA services within the last five years?
2. How do interveners promote communication development and academic achievement for students who are deafblind?
3. How can trained interveners improve educational access for students who are deafblind?

Chapter 3 will provide a detailed methodology for the study including research design and secondary data collection. The chapter will close with information on data analysis.

Chapter 3

Methodology

The purpose of this study was to explore the educational access for students who are deafblind and effects of using trained interveners. The researcher analyzed the National Child Count of Children and Young Adults who are DeafBlind from 2017 to 2021 to identify the trends in how students who are deafblind are accessing their education. The researcher also analyzed qualitative data from interview transcripts of four nationally qualified interveners. The study was designed to address the following questions:

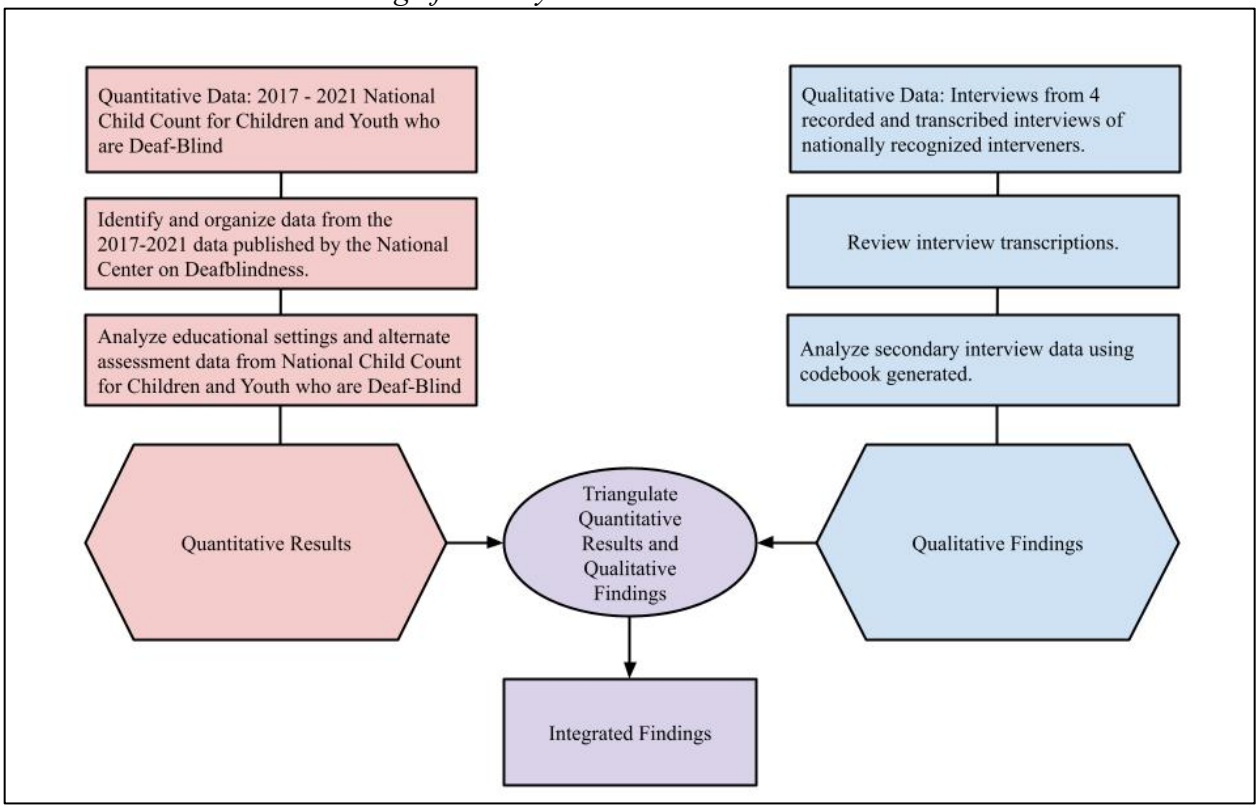
1. What are the trends in educational access for students who are deafblind receiving IDEA services within the last five years?
2. How do interveners promote communication development and academic achievement for students who are deafblind?
3. How can trained interveners improve educational access for students who are deafblind?

Research Design

The study used a convergent mixed-methods research design using available secondary data from two separate data sources. A mixed methods approach was the optimal design required for this study since a single data source would not be adequate to address all three research questions (Cresswell and Clark, 2018). Aspects of a quantitative and qualitative research design, including data analysis and interpretation were implemented and then integrated to address the research questions. Both data sets overlapped in the time periods of collection, even though each of the quantitative and qualitative data were collected for separate purposes. The quantitative data was extracted from the 2017-2021 National Child Count of Children and Youth who are DeafBlind (DBCC) and the qualitative data was extracted from 2019 interview transcripts of four

nationally qualified interveners who were directly working with students who are deafblind, for a minimum of five years. The quantitative data and qualitative findings were integrated to identify evidence for ways to increase educational outcomes for students who are deafblind. Figure 2 illustrates the research design of the study.

Figure 2.
Mixed Methods Research Design for Study



Secondary Data Sets

The National Child Count for Children and Youth who are DeafBlind

The DBCC is published by the National Center on Deaf-Blindness annually and consolidates the data collected from all the state deafblind projects. Each state, including U.S. territories, annually collects data on all children, birth to 21 years of age, meeting the federal definition of "deafblind". The number of identified children who are deafblind has ranged from 10,000 children identified in 2017 to a record high in 10,627 in 2019. The COVID-19 pandemic

did impact the self-reporting from school divisions and the number of children identified in 2021 decreased to 10,441. Information on each child is collected including any newly identified students, updating information on previously reported students and exiting information on students who have aged out, graduated or no longer meet the eligibility criteria for being on DBCC. Information on each child includes demographic information, such as age, race, ethnicity and gender, degrees of vision and hearing loss, etiology or cause of deafblindness, comorbidity of additional disabilities besides vision and hearing, including orthopedic or physical, cognitive, speech language impairments, health impairments, among others, in educational settings and living settings. Each state reports de-identified information on each child as of December 1 of the previous year. The National Center on Deaf-Blindness then publishes the report identifying the information that was collected. Data from each state are available as aggregated numbers and not on an individual basis.

Interviews

Data from interviews from a previous study were used to address the impact interveners can have on students who are deafblind when accessing their education. The interviews were collected in 2019 as part of a graduate-level course at a reputable urban research university, "Qualitative Methods and Analysis". The interview participants were recruited using the State Deaf-Blind Projects listserv through the National Center on Deaf-Blindness' Technical Assistance and Dissemination Network. A flier seeking interested participants was sent (see Appendix A) through the listserv. State Deaf-Blind Project personnel shared it with credentialed and certified interveners they coached. The flier was also disseminated through the National Intervener Association. Participants were required to have a minimum one-year experience with the nationally qualified credentials or certification and should be currently working with a

student who is deafblind. After the participation flier was sent, interested parties emailed researchers directly. The researcher emailed the Research Participant Information and Consent Form (see Appendix B) to interested individuals and once participants returned a signed consent form along with preferred dates and times for interviews, a final Google Calendar invite was emailed to them with login link to the Zoom Video Conferencing.

The participants of this study were four nationally qualified interveners from all over the United States. One intervener had received credentials through an institute of higher education, and three had completed the National Intervener Certification E-portfolio through the PAR²A Center/National Center on Deaf-Blindness. All four participants have 5-8 years of experience and have worked with three or more students in their career, which allowed them to have various perspectives based on the different relationships they had with each of their former students.

Every interview was conducted by the researcher and lasted between 30-60 minutes. With the consent of the participants, the audio portion of the interview was recorded using the Apple Voice Memo Application. A semi-structured interview process was used during the interviews that outlined questions that were required to be asked in order. The interview process was semi-structured in order for participants to provide detailed anecdotal information regarding how their role impacts the educational outcomes of their students. The interviews began with asking the participants their background, which included which training program they completed, whether they completed the National Intervener Credentials through an institute of higher education or the National Intervener Certification through the National Center on Deaf-Blindness' Open Hands Open Access Deaf-Blind Intervener Modules, followed by questions that allowed the researcher to get a better understanding of their school setting as well as their student's vision, hearing and communication. The researcher conducted each interview using a

pre-written script with questions included (Appendix C). The interviews were transcribed in its entirety using the "Otter.ai" transcription website. All participants received a copy of the transcription to review.

Data Analysis

Data sets of school placement and standardized state testing from published DBCC from the past five years was collected to recognize the trends. The data collected by the National Center on Deaf-Blindness regarding school placement and state standardized testing is only collected for individuals between the ages of 6 to 21 years. The categories under school placement include: (1) inside a regular classroom for more than 80% of the day, (2) inside a regular classroom for 40 - 79% of the day, (3) inside a regular classroom for less than 40% of the day, (4) separate school, (5) residential facility, (6) hospital or homebound, (7) parentally placed in private school, and (8) unknown or missing. Starting during the December 1 2020 DBCC, two additional categories addressing the implications of the COVID-19 pandemic were added: home school or remote learning and "not served under Part B". When aggregating the school placement data, the data for 2017-2019 for remote learning and "not served under Part B" was missing. Data collected for standardized state assessments include the following categories: (1) regular grade level, (2) regular with accommodations, (3) alternate assessments, (4) not required due to age/parent opt out and (5) Missing data. Starting 2020, the code for "not required due to the COVID-19 pandemic" was added as a code and only had data for years 2020 and 2021. In order to analyze the trends for school placement and state assessments, each data category was converted to a percentage value and graphed by year to observe the trends.

The code book used for data analysis of the interviews for the qualitative portion of the study focused on two perspectives of an intervener's role: communication and language

development and academic support. With communication and literacy practices being linked together based on the literature review, connecting language or communication development with academic support, which includes literacy, supported the creation of the codebook (Appendix D). The interviews were coded separately by two separate researchers and calibrated to ensure reliability of the codebook. Both the secondary coders had experience working with students with sensory disabilities. An understanding of terminology of deafblind specific terms and best-practices increased the accuracy of the coding. All transcripts were coded in entirety by all three researchers, any disagreements were discussed and only coded if all three researchers agreed.

The final step of the data analysis included integrating the findings from the interviews and the trends drawn from the quantitative data to draw conclusions. With the use of a convergent mixed methods design, the intent of integration was to merge the results from the quantitative and qualitative aspects to develop and expand the understanding and identify comprehensive results (Cresswell and Clark, 2018). The quantitative data extracted from the DBCC included classroom setting as well as state assessment data. The findings from the qualitative data were be coded to identify strategies implemented to increase academic outcomes. Integration occurred by identifying the common themes and how intervener training supports the increase of academic achievement in students who are deafblind.

Chapter 4

Results

The results section present findings from the data collected from the National Child Count of Children and Young Adults who are DeafBlind and interviews from four nationally qualified interveners and address the following research questions.

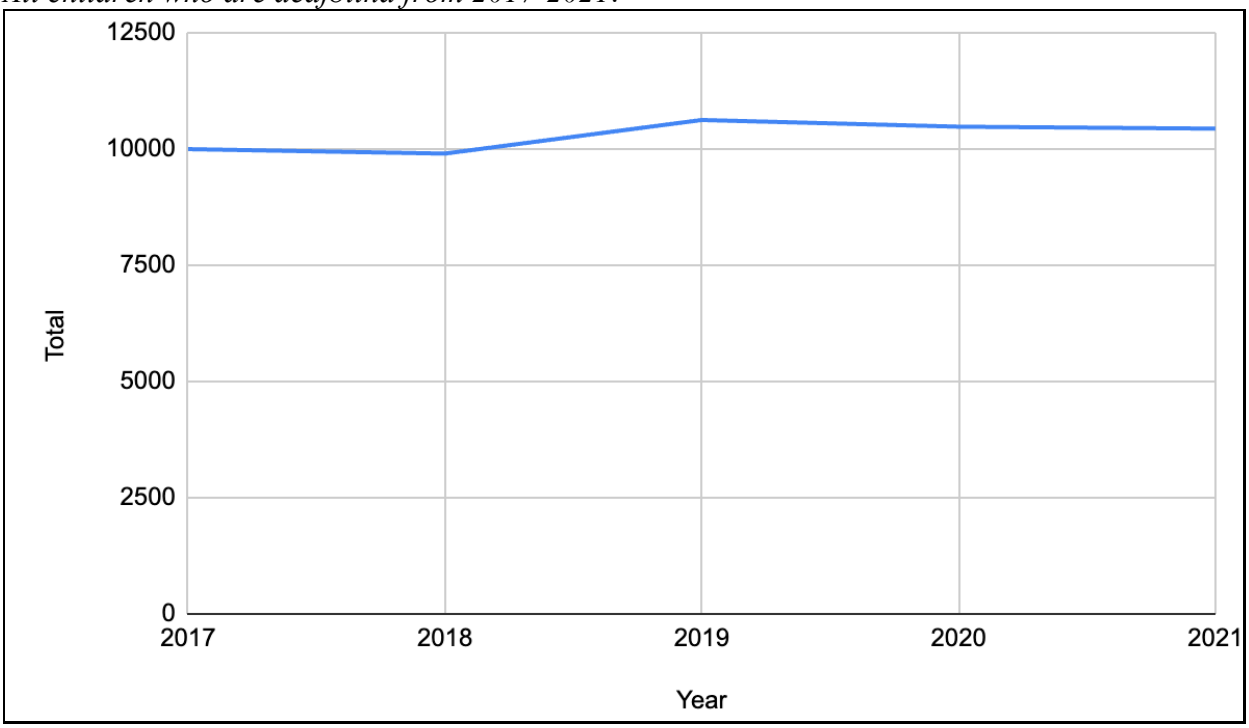
1. What are the trends in educational access for students who are deafblind receiving IDEA services within the last five years?
2. How do interveners promote communication development and academic achievement for students who are deafblind?
3. How can trained interveners improve educational access for students who are deafblind?

Research question one was addressed through the quantitative data. Trends in demographics and educational access for students who are deafblind were identified and presented in Figures 3 through Figure 12 and Table 3.

Data retrieved from the National Center on Deafblindness' (NCDB)'s National Child Count for Children and Young Adults who are Deafblind (DBCC) from years 2017 to 2021 were collected and reviewed by secondary reviewers with background in data and evaluation management. Data were organized using Microsoft Excel and percentages were calculated and graphed. Figure 3 displays the total number of children, between the ages of 0 and 21 years, who were identified as being deafblind, between 2017 to 2021. The graph displayed a steady number of students between 2017 to 2021, ranging from 10,000 to 10,441 students. The number of students in 2019 dropped to 9,904 students. Table 3 breaks down the demographic of students by number and percentage.

The trend in age range has also been consistent from 2017 to 2021. For the past five years, only 4-6% of children identified fall between the age 0-2 and less than 20% of the children identified are under the age of five. However, there is a significant increase in the number of children that fall between the ages of 6-17 years. Based on the data available, students who meet the federal criteria of "deafblindness", many children are not being identified as "deafblind" until after the age of six. Trends in the primary eligibility categories also appear stagnant over the past five years. The most frequent eligibility category for children who are deafblind to be labeled under has been "multiple disabilities", with "deafblindness" coming in second. From 2017 to 2020, the number of students being identified as "deafblind" has increased. About 19% of the students who are deafblind had a primary eligibility category of "deafblindness", which was the highest in 2018.

Figure 3.
All children who are deafblind from 2017-2021.



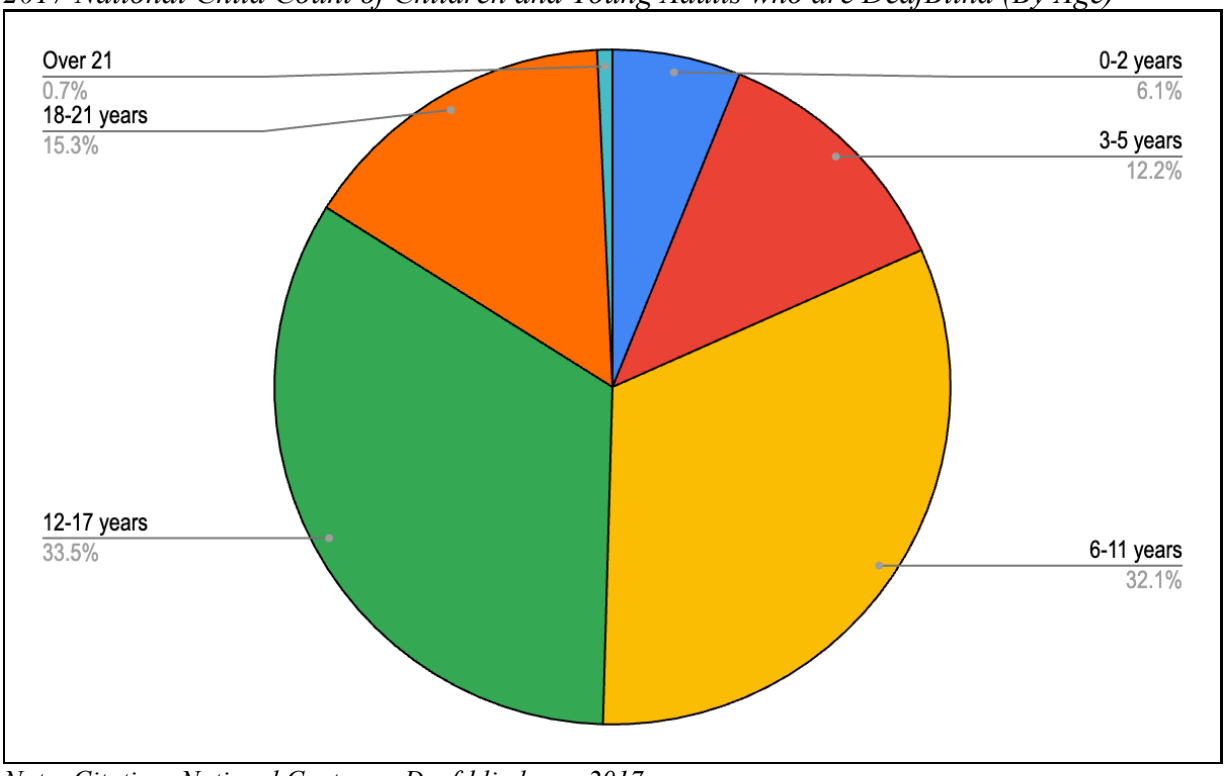
Note: Citation: National Center on Deaf-blindness, 2017,2018,2019,2020,2021

Table 3.
2017-2021 demographics of children and young adults (0-21 years) identified as deafblind

	2017	2018	2019	2020	2021
			Race		
American Indian/Alaska Native	180	165	163	151	141
Asian	446	469	487	465	443
Black or African American	1426	1421	1523	1461	1414
Hispanic/Latino	1956	1950	2116	2109	2139
White	5366	5268	5605	5587	5501
Hawaiian/Pacific Islander	125	164	226	140	144
Two or more races	301	301	363	325	316
Unknown/Missing	192	166	144	245	343
			Gender		
Male	5385	5344	5806	5626	5570
Female	4555	4513	4789	4805	4813
Missing	60	47	32	43	58
Total	10000	9904	10627	10483	10441

Note: Citation: National Center on Deaf-blindness, 2017,2018,2019,2020,2021

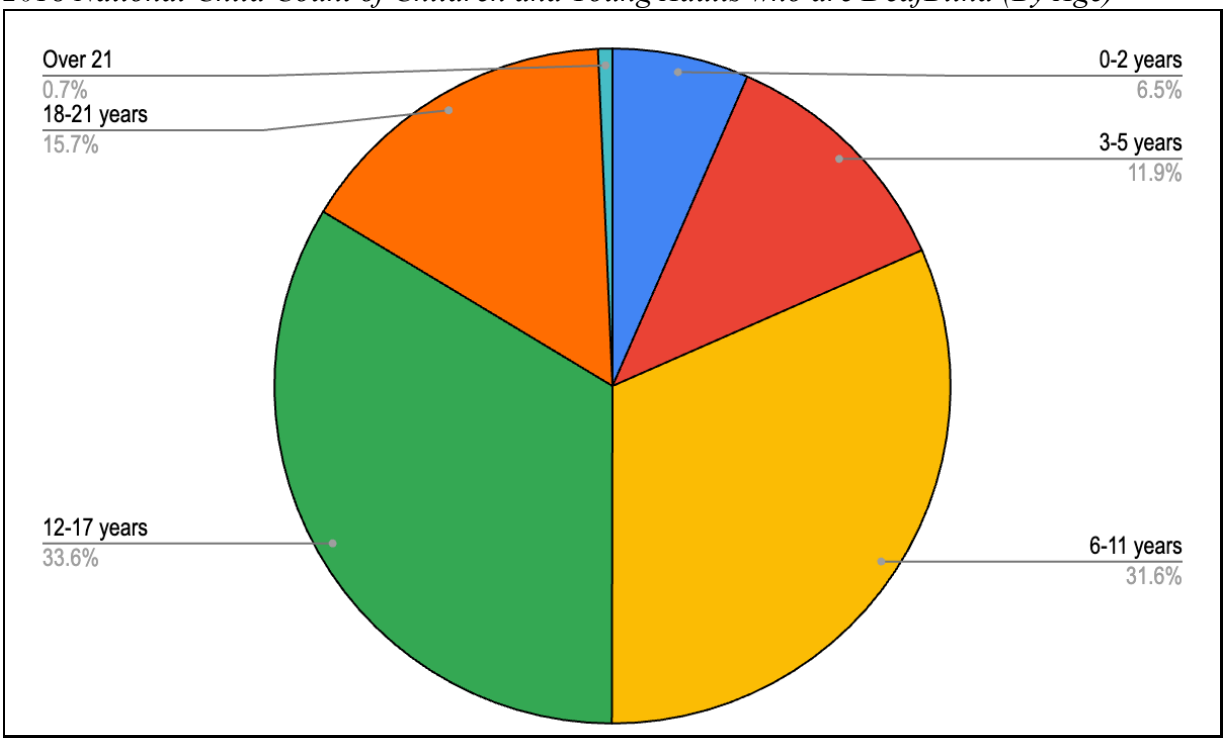
Figure 4.
2017 National Child Count of Children and Young Adults who are DeafBlind (By Age)



Note: Citation: National Center on Deaf-blindness, 2017

Figure 5.

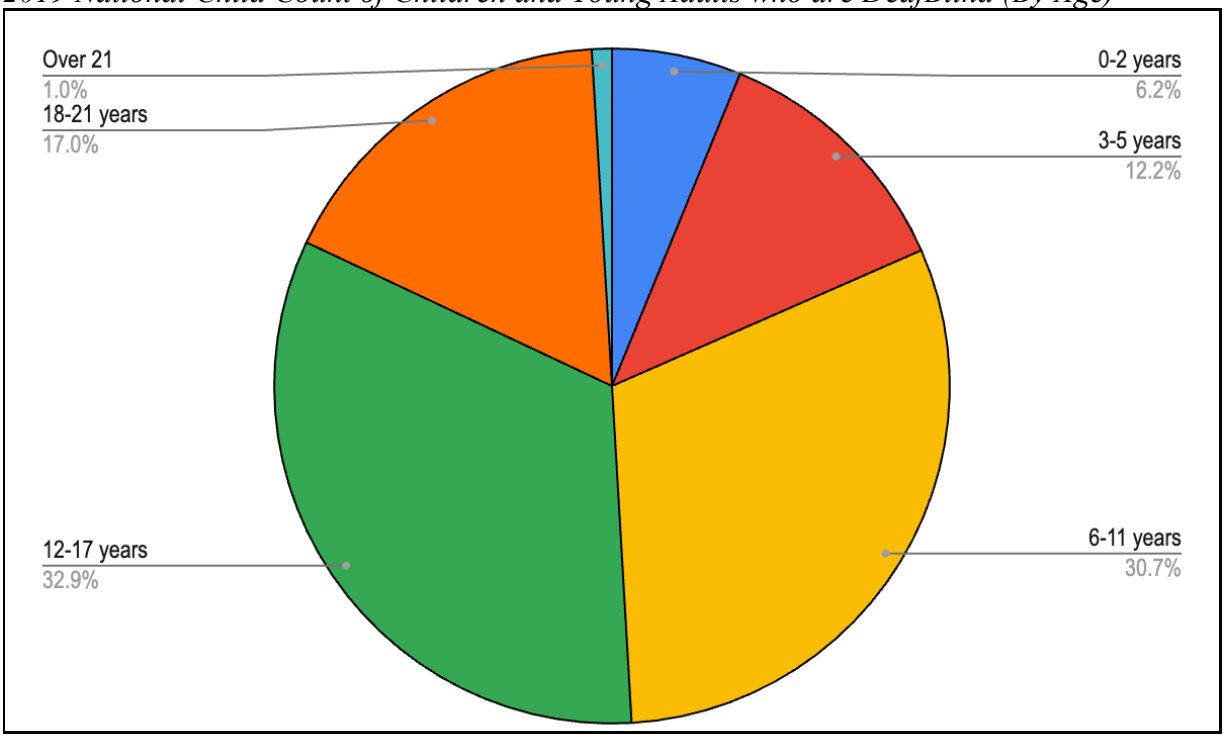
2018 National Child Count of Children and Young Adults who are DeafBlind (By Age)



Note: Citation: National Center on Deaf-blindness, 2018

Figure 6.

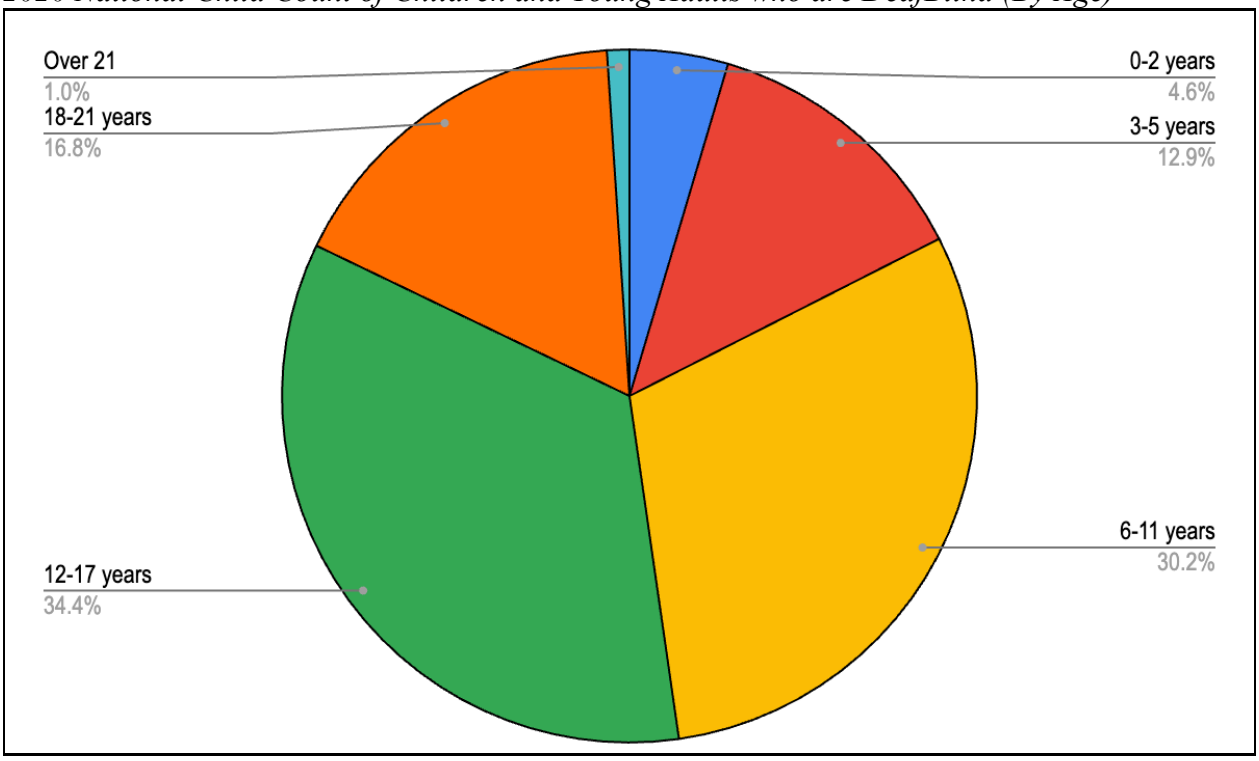
2019 National Child Count of Children and Young Adults who are DeafBlind (By Age)



Note: Citation: National Center on Deaf-blindness, 2019

Figure 7.

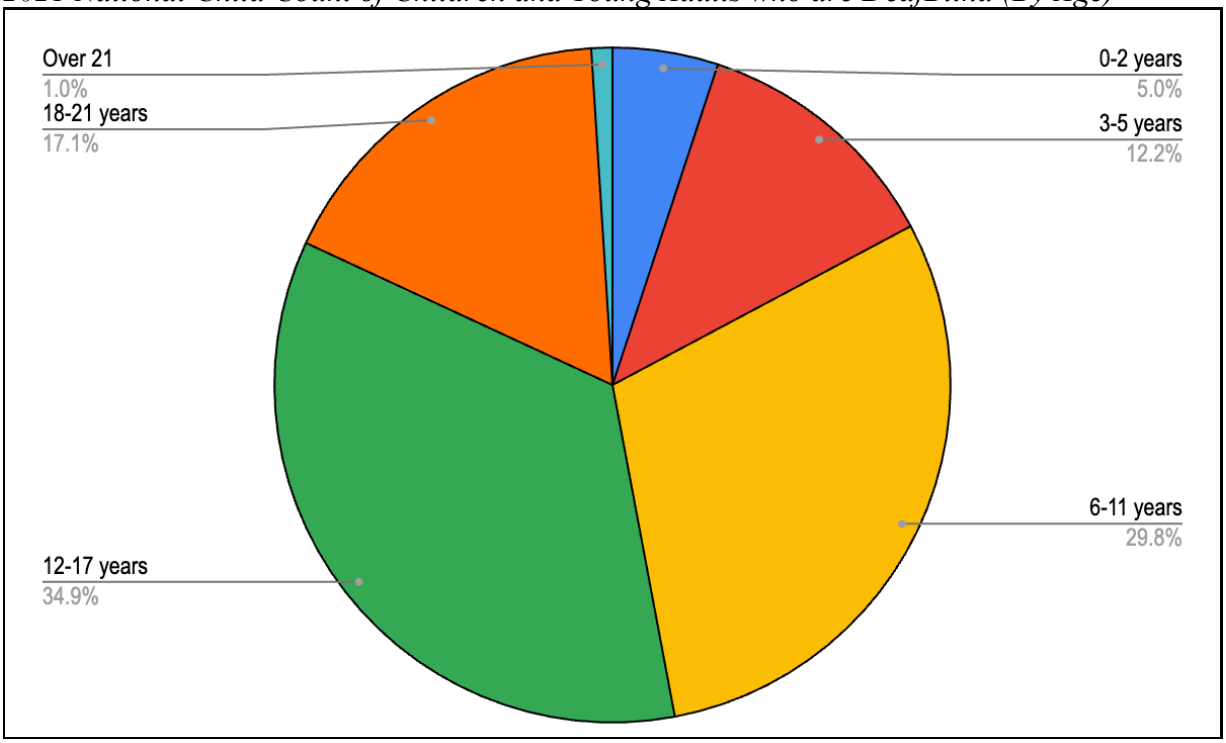
2020 National Child Count of Children and Young Adults who are DeafBlind (By Age)



Note: Citation: National Center on Deaf-blindness, 2020

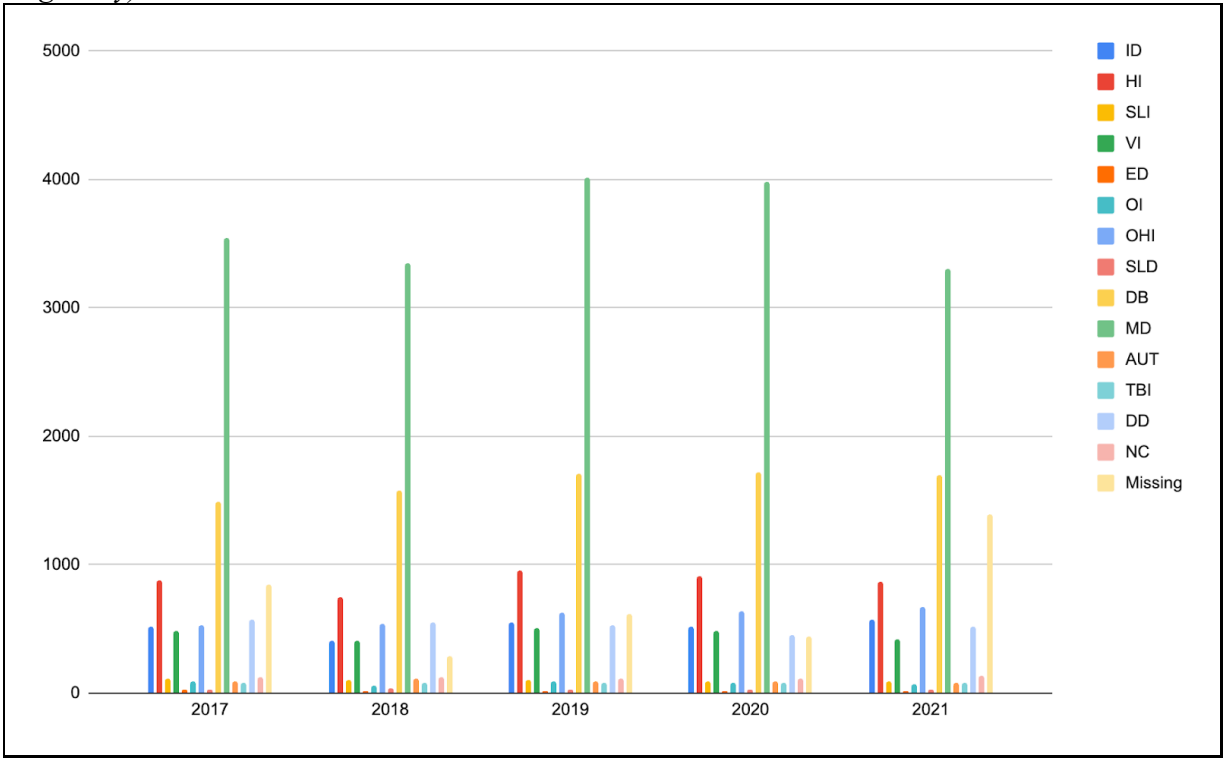
Figure 8.

2021 National Child Count of Children and Young Adults who are DeafBlind (By Age)



Note: Citation: National Center on Deaf-blindness, 2021

Figure 9.
2017-2021 National Child Count of Children and Young Adults who are Deafblind (By Eligibility)



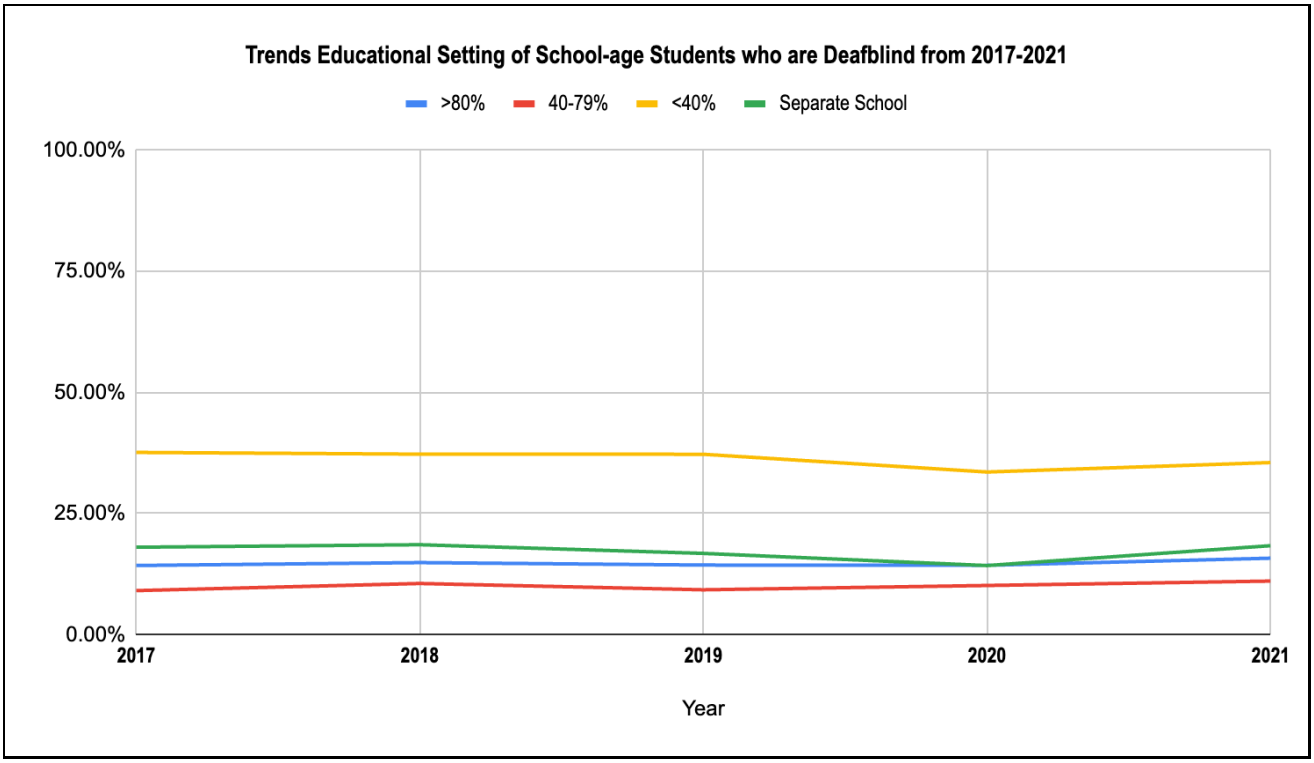
Note: ID = Intellectual Disabilities; HI = Hearing Impairment; SLI: Speech Language Impairment; VI = Vision Impairment; ED = Emotional Disturbance; OI = Orthopedic Impairment; OHI = Other Health Impairments; SLD: Specific Learning Disabilities; DB = Deafblindness; MD = Multiple Disabilities; AUT = Autism; TBI = Traumatic Brain Injury; DD = Developmental Disabilities; NC = Non-categorical; Missing = Missing or Not Reported Under Part B; Citation: National Center on Deaf-blindness, 2017, 2018, 2019, 2020, 2021

Educational Settings

Only trends from the following categories were graphed: students in a general education classroom for more than 80% of the school day, students in a general education classroom between 40 to 79%, students in a general education classroom, students in a general education classroom for less than 40% of school day and students who are in a separate school. Trends in all four categories remained mainly steady with only slight fluctuations during the COVID-19 pandemic (Figure 10). The percentage of school-aged students who were in a general education classroom for more than 80% of the school day remained steady, ranging from 14.28% in 2017 to 15.79% in 2021. The percentage of students in general education classrooms between 40 to

79% of the school day ranged from 9.1% in 2017 and peaked in 2017 at 11.07%, with a less than 2% change over five years. The percentage of students who are in general education classrooms for less than 40% of the school day is the highest percentage in the educational settings category and ranged from 37.61% in 2017 to 35.52% in 2021. The last category observed in educational settings was students in separate schools. The percentage of students in separate schools ranged from 18% in 2017, peaked at 18.57% in 2018, dropped to 14.3% in 2019.

Figure 10. *Trends in Educational Settings of School-age Students who are Deafblind from 2017-2021.*



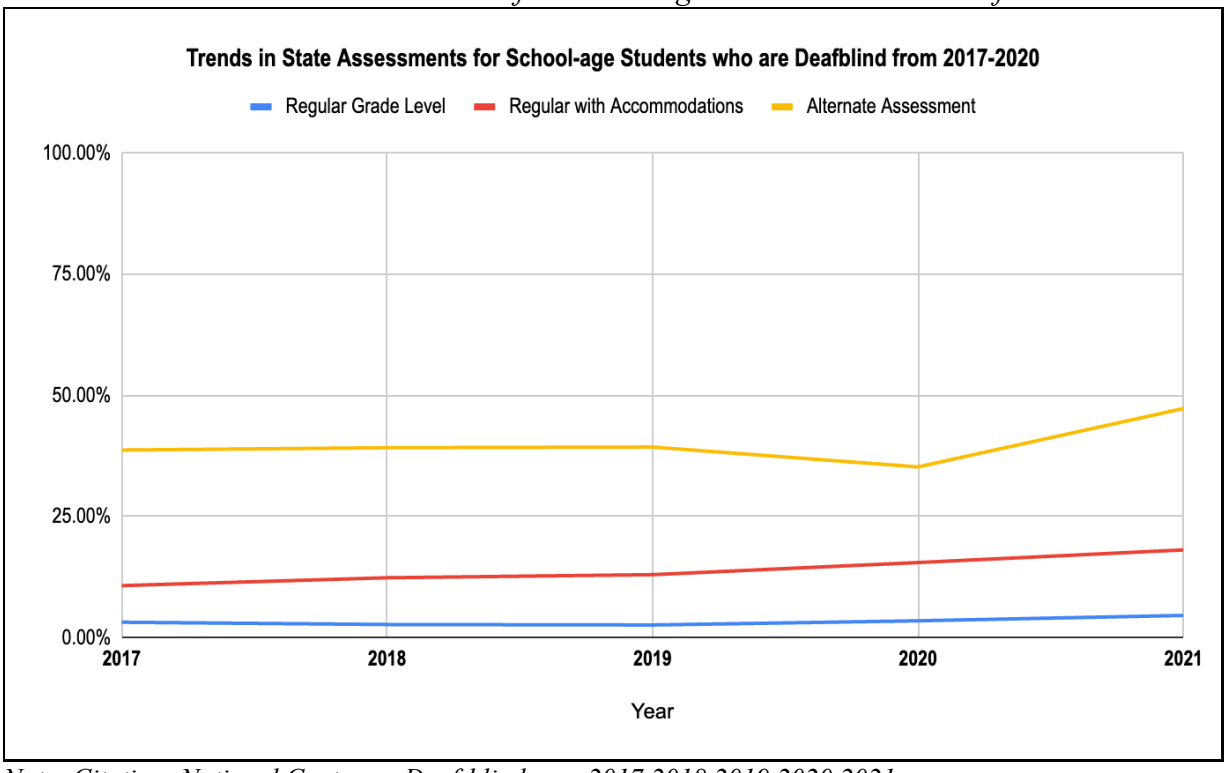
Note: Citation: National Center on Deaf-blindness, 2017,2018,2019,2020,2021

State Assessments

The following data from the state assessments categories were graphically displayed from 2017 to 2021: students who participate in state assessments at regular grade level, students who participate in state assessments at regular grade level with accommodations and students who participate in state assessments through alternate assessments (Figure 11). The percentage of

students participating in state assessments at regular grade level without accommodations ranged from 3.2% in 2017, dropped to 2.63% in 2019, and then steadily increased and had a peak percentage of 4.6% in 2021. Students who participated in state assessments at a regular grade level with accommodations had a range that was about 10% higher than those who participated in grade level assessments without accommodations. The range of students participating at grade level with accommodations ranged from 10.8% in 2017 and steadily increased and peaked at 18.12% in 2021. Twice as many students who participated in the alternate assessment version of their state standardized assessments. The range was 38.7% in 2017 and peaked in 2021 at 47.9%. Almost half of the students who are deafblind participated in the alternate assessment version.

Figure 11.
2017-2021 Trends in State Assessments for School-age Students who are Deafblind

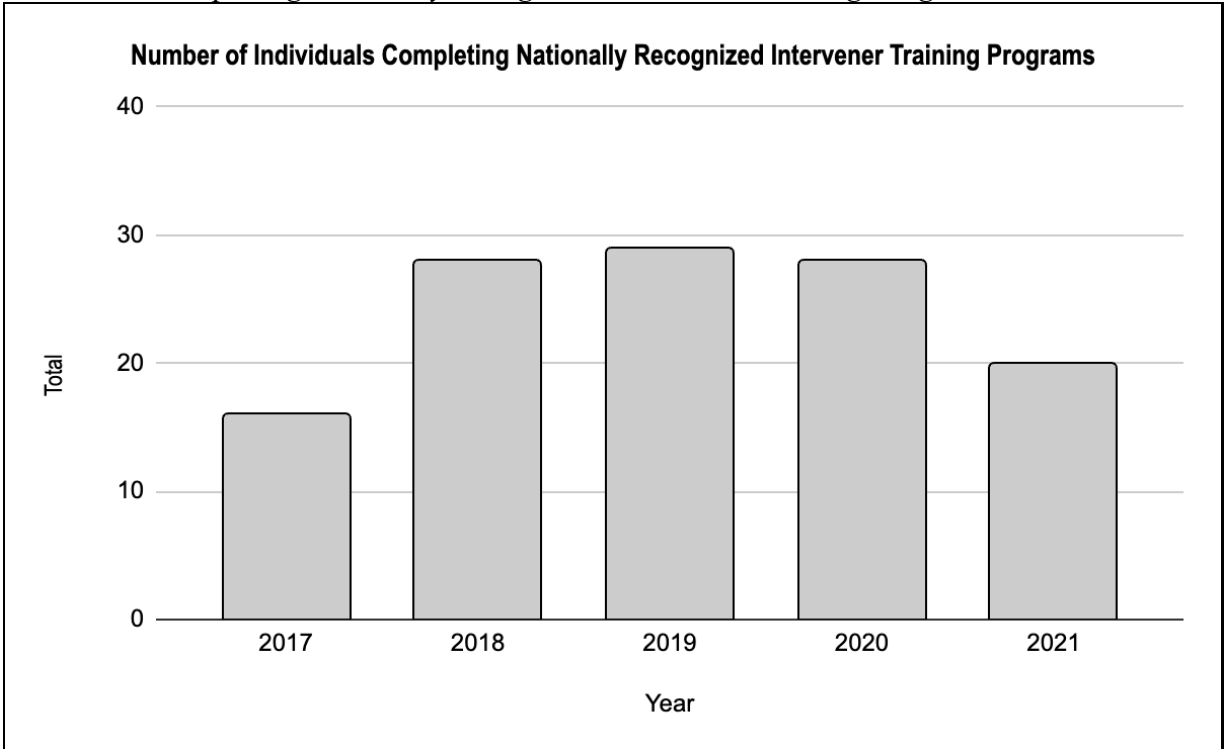


Note: Citation: National Center on Deaf-blindness, 2017,2018,2019,2020,2021

Interveners

The number of individuals who completed nationally qualified intervener training has steadily increased. Data were collected from those individuals who completed the certification process through the Paraprofessional Resource and Research Center, those who were credentialed through the National Resource Center for Paraeducators by way of Central Michigan University and those who were credentialed through Utah State University. Based on the data provided, the number of interveners completing nationally qualified training programs has steadily increased from 2017 to 2020 (Figure 12). In 2017, sixteen individuals completed a nationally recognized intervener training program. In 2019, 29 individuals completed nationally recognized training programs, which was the highest number in five years and had twenty individuals complete training 2021.

Figure 12.
Individuals Completing Nationally Recognized Intervener Training Programs 2017-2021



Note: W. Hepworth (personal communication, October 4th, 2023); B.Kennedy (personal communication, October 10th, 2023); L. Alsop (personal communication, November 7th, 2023).

Research question two was addressed through individual interviews. Four nationally qualified interveners were interviewed in 2019 as a part of another research study. The participants were recruited through the state deafblind project listserv through the National Center on Deafblindness. Interested participants contacted the researcher directly to set up a time to conduct the one-on-one interview. Once a consent form and time was determined, a Google Calendar invite was sent to the participant with a zoom link. The semi-structured interviews lasted between 30-60 minutes. The auditory portion of the interview was recorded using Apple Voice Memo and transcribed using Otter.ai© transcription software. Any identifying information from the transcripts was removed and sent to each participant for approval. Interviews from four nationally qualified interveners (Table 4.) were coded by the primary researcher and were calibrated with two graduate students with backgrounds in sensory disabilities. Interviews were coded for two major categories: communication and academics, with subcategories within each category (Appendix D).

Table 4.
Demographics of Interview Participants

	Gender	Training Program	Years of Experience	School Placement
Participant A	F	Certification	8	Separate School
Participant B	F	Certification	6	Self-contained classroom
Participant C	F	Credential	9	Separate School
Participant D	F	Certification	8	Separate School

The primary theme that emerged from my conversations with trained interveners, is the need for qualified, trained personnel to work with students who are deafblind. The coursework required to receive national certification or credentials helps interveners understand the impact that a combined vision and hearing loss has on a child's socialization, communication and academic achievement. They do feel that they would not have been effective in their position

without the training they received. Themes of the student being isolated prior to the receiving intervener supports and mentioned that having a person who is trained in deafblindness is what helps students who are deafblind communicate and socialize. One participant said, “it's just these kids are so stuck because they don't have the people trained to work with them”.

As Participant C reflected back on her time as an intervener without training, there was a significant amount of regret and feelings of lost opportunities for student growth:

> We had coursework to read and tests and quizzes and coaching sessions that there were observed mentoring sessions. I would not be the intervener without… going through the higher ed program. And I don't think any of those kids would have the progress that they did. I feel so bad for my very first student because I just didn't know. I knew sign language. I knew tactile sign language. But I didn't know how to intervene. I didn't understand, you know, all the hand-under-hand. I didn't understand, you know, how to adapt things. I didn't understand, you know, so many things and how to work with them that I think that that student could've made so much more progress if he had worked with me today. So, so yea. I think that's the biggest thing that makes me sad.

Interveners were also a vital members of their student’s educational team. Since they are the professional working most closely with the student, they are carrying over skills across environments. Participant B identified herself as the glue, “I would describe myself as a glue to the team because when I have all these related services or direct services, like I'm the one who's there, and so everything is bounced off me…I just want to know and help them and so we collaborate a lot”.

Themes of communication and language development quickly emerged through all interviews. All participants have been working in the role of the intervener for 5 or more years

and are nationally credentialed or certified. The participants are currently working with students who have never had a *trained* intervener working with them. Participants mentioned the lack of a communication system for their students when they initially began working with them. The students relied on unconventional modes of communication, such as behaviors, facial expressions and gestures. These students were also labeled by the school personnel as having the inability to communicate. Participants mentioned working with student's team to develop high- or low-tech augmentative communication devices that included speech output devices, head switches, tangible object symbols, photographs or line drawings. Participant C recalls working continuously on conventional gestures in order to communicate immediately:

> When I met him, he didn't use the system. It was something he learned when I was there. He also now has really good "yes" "no" with his head, that actually just appeared this past year. We've been working on it for a long time. So, that's good too. So now he's able to communicate a lot better, you know, with an immediate response if we ask him a yes/no question.

Developing a formal communication system, such as sign language and speech, has helped students transition into communication rich environments. Participant B described the object communication system her student uses and how each object symbol is purposefully curated for the student, "He uses a marker in art so marker's art. And then the dance room has mirrors so a mirror is dance. And then there, I cut a piece of the pillow material and I stuffed it like a little pillow, because I was like, he knows that his break is on a pillow". An intervener who has worked with several students who are deafblind remembers a student who told that she would never communicate but, "This 3rd grader got transferred to a signing program, they had a, that she should have been in from the very beginning but she didn't get put in there because they

had assumed that all of her other syndromes, that she was never going to communicate. And so, just all these kids get so easily looked over". Since deafblindness is a low-incidence disability, students who are deafblind are entering classrooms that have professionals who are not well-versed in the strategies interveners are exposed to during their training and therefore are quick to label these students as "non-communicative". The intervener training programs cover the specific sequence of communication development, which the classroom interveners can support in the classroom. Instead of presenting the students with high tech devices, they utilize deafblind specific strategies in order to promote concept development. Through direct learning opportunities, interveners support students to understand and make meaning of the world around them.

As an intervener, a key role is for them to be the communication bridge. All interveners shared this specific aspect as their strength. Participant B, who worked in a self-contained classroom, was able to have her student participant in daily recess with his non-disabled peers. She stated her ability to navigate social interactions with her student and his peers is a strength of hers:

> That is something as an intervener that I've worked really hard at. Like, I would say that's one of my best traits as an intervener, just helping him become social, just because he was not vocal for first 3 years I worked with him. He did not make a sound, but he did at home. And so, to see him now, you would just be floored. Like he's just so happy and loves people and before he was very closed to people…We rotate the students in the class and I never make the kids be his buddy at recess. They chose. But he has like, there's always about 3 or 4 [kids] that really just attract to him. They love him and so if the buddy doesn't want to and so those 3 are always there. They love him. So, there's like a

> slope on the playground and the kids love pushing him up the slope. And now, like today for instance, they were rolling down the hill so we counted how many times and then he went down the hill in his wheelchair. It's just like, they're so cute.

All of the interview participants mentioned the need to adapt curriculum to promote academic achievement. With the support of the teacher developing lesson plans and the academic content, interveners created individualized lessons by adapting materials to make the activities meaningful. All interveners identified an important part of their role is to support classroom teachers as they developed lesson plans. Interveners stated that in order for students with deafblindness to be fully engaged in their academics, activities need to be meaningful. One intervener mentioned that the pre-made tactile books that are readily available are extremely lacking. "A lot of the tactile books, you know, they have textures for things but it's often just, you know, textures and not something meaningful unless you have someone who's specialized in knowing that student and making it meaningful for them."

Participant A mentioned a decrease in her student's aggressive behaviors when materials were made meaningful and class engagement increased significantly. "When I first started with her, she would sit at a desk. She did not participate in any thing…And now we participate in every single activity. She answers questions. I mean, every now and then she'll have a bad moment where she doesn't want to answer a question, you know, but that's normal. She listens to the teachers and she participates in activities that she doesn't necessarily want to do".

Once lessons were adapted, students demonstrated tremendous growth in areas of literacy and math. One participant mentioned using the student's communication device to improve on his writing skills:

> I would ask him, to make him go faster, "Would you like to write A, B, C, or D?" and then he'd use a switch to say "yes", "yes" to that one or "no" to that one. That was before we had the "yes", "no" down and now he can use his head nod, basically. So, but before it was, you know, it was a switch that he hit. And I put the switches on too, so he could tell me both ways. He could nod his head "yes" and hit "yes, that's the one" and that like confirmed, it's not a guess. He really knows this stuff. It's something like, people are like, "Is that purposeful?" So, it just emphasized it more that he knew what he was talking about. It was super cool. And he'll get all proud and like, when he got the right stuff.

Participants also mentioned the communication growth of the student was a leading force in supporting academic achievement.

Research question three, "How can trained interveners improve educational access for students who are deafblind" was addressed by integrating the quantitative survey data and the qualitative interviews. Despite the small number of trained interveners, the national survey shows a substantial increase from sixteen in 2017, a peak of twenty-nine individuals in 2019 and twenty individuals in 2021. Interview data further confirmed the importance of intervener training on students' educational access. As participants compared their experience prior to receiving the training and after receiving the training provided them with the ability to be the highest quality intervener possible, one intervener specifically stated the regret the felt for the first student they worked with who had the support of a professional without any training. There was a significant loss in the amount of concept development, increase in expressive communication and academic achievement that would have been displayed by the student if they had access to highly trained personnel, especially the support staff that worked the most frequently with them.

The trends show consistent low in general education classroom settings, which appropriately reflects the classroom setting of the interview participants. None of the interveners supported students who were integrated into a general education classroom. Either the participants were in a separate school for students with disabilities or a self-contained classroom. Interveners discussed the difference in their students' expressive communication versus receptive communication. One participant called their student "a locked box" when they first began working together, because no one prior to the intervener understood the communication mode of the student. Communication attempts from the student went unanswered and turned into learned helplessness. The participant remarked that within the first few months of working with the student, the student went from not being fully engaged in their school day to demonstrating skills such as counting to twenty. Gaps in academic achievement that may have been glaringly obvious were slowly closing. The interview participants did express frustration in the lack of social interaction between their students and their nondisabled peers, which could be facilitated and improved had the students been in general education settings. Students who are deafblind benefited from having communication partners who understood the importance of modeling appropriate communication skills as well as having a variety of individuals. One participant mentioned that through modeling appropriate expressive communication through the use of an augmentative communication device, the student became more interested in classroom peers and seeked social interaction with them. However, the student was in a school and classroom with students who had significant support needs and were not seeking social interaction at the same level as the student who was deafblind. In times like these, being in general education classrooms can provide opportunities for interveners to facilitate communication with other classmates who can also be communication models.

Chapter 5

Discussion

This study applied a mixed-methods research design to explore the current state of deafblind education and how students are receiving IDEA services and how trained interveners can improve their access. The previous chapter presented the results from the National Child Count of Children and Young Adults who are DeafBlind, interviews from four nationally qualified interveners as well as the integrated results of the quantitative and qualitative findings. This chapter discusses the findings, implications for the field, limitations and recommendations to further the field of deafblind education.

Trends in Educational Access for Students who are Deafblind

Data from the National Child Count of Children and Young Adults who are DeafBlind (DBCC) from 2017-2021, the data sets published from the last five years, were analyzed to identify trends in educational access for students who are deafblind. Trends in several different categories were visually represented through line, bar and pie graphs to identify any patterns the data may suggest. Categories included the overall deafblind population being served under the Individuals with Disabilities Education Act (IDEA) and the age range of the identified children and young adults. The next approach was to analyze the trends in school-aged individuals, more specifically the primary eligibility category listed under the Individualized Education Program (IEP), classroom settings and how school-aged children who are deafblind access standardized state assessments. The combination of these categories from the DBCC captured the most accurate representation of the educational outcomes of students who are deafblind that can be determined based on available data.

In order to understand how students who are deafblind access their education, it is imperative to understand the population of students who are deafblind as a whole. This understanding begins with identification and diagnosis of their vision and hearing loss and also what category is being determined as their primary eligibility category in school. Based on the DBCC from 2017-2021, less than 7% of the children reported are between the ages 0-2. More than 60% of the students reported fall between the ages of 6-17 years. An important factor to consider is the age of diagnosis and identification. If students who have combined vision and hearing loss are not being identified until after the age of six, then that child has not had the access to professionals who can provide appropriate accommodations to support their vision and hearing access. The lack of appropriate accommodations only increases the gap in concept and communication development which results in further disparity in the grade level academics they access.

The second component to understanding the population of students who are deafblind is what disability category they are being labeled as when they begin receiving services under IDEA. Within the last five years, more than 30% of the students reported through DBCC are labeled as having “Multiple Disabilities” and only about 15% of the students have “deafblindness” as their primary eligibility category. The primary eligibility category and the late identification of their vision and hearing loss can contribute to the gap in academic achievement compared to other students with disabilities. Students who are deafblind need information presented to them that accommodates their vision and hearing loss. If the proper identification has not occurred, then there is a chance the child has received services, such as vision and hearing services, and they have not been able to access their educational materials in the most effective manner.

In terms of the trends provided by the DBCC, there has not been any significant change in the number of students who are deafblind being in a general education classroom for a major portion of their school day or a difference in the number of students who are deafblind who are accessing grade level standardized state assessments. Only about 25% of the students reported through the DBCC are in general education classrooms for more than 40% of the school day and less than 20% of the school-aged students who are deafblind access regular grade-level assessments, with and without accommodations. It may be stated the students that are not in the general education classroom are placed in the most appropriate setting. However, it is important to consider what schools can do to make the general education classroom the most appropriate placement for students who are deafblind. The most appropriate placement as well as the least restrictive environment (IDEA, 2004) does not need to be a self-contained classroom or a separate school just because the child requires accommodations to access the general education curriculum.

Impact of Interveners on Educational Outcomes

Overall, the results of the study showed how multifaceted the role of the intervener is and the positive impact it has on students who are deafblind. It is evident in the interviews that all participants understood what their role was and what was expected of them. They understood how their role as the intervener differed from a classroom paraprofessional, educational interpreter or a classroom teacher. It was also clear that all participants had not only taken extensive training in deafblindness but also have comprehended the strategies and implemented them on a daily basis. The language they used to describe their student's communication or certain activities are deafblind specific and they would not know terms unless they had received adequate training. The interviews also brought to the surface several of the major competencies

identified by the Council for Exceptional Children's Specialty Set for Special Education Paraeducator Intervener for Individuals with Deafblindness (Council for Exceptional Children, 2022). These competencies are the foundation to the intervener training programs. The conversations with the interveners demonstrated the understanding of several of these competencies, which supports the notion that training interveners in deafblind specific strategies through nationally qualified programs ensures the understanding and the appropriate implementation of these evidence-based practices.

All interveners were working with a student who did not have the support of a *trained* intervener prior to the participant filling the role. The participants had the opportunity to witness the communication development of their students. Initially the students only used unconventional modes of communication, such as facial expressions, behaviors and gestures. As a result of daily consistent interaction with their students, the interveners supported their students using more abstract types of communication that includes object symbols, photographs, line drawings, voice output devices and American Sign Language.

Findings of the study align with the literature. With the support of an adult facilitator or intervener, students who are deafblind are provided with more opportunities for hands-on or direct learning. The level of instruction, as shared by the participants, indicated that all were using classroom lesson plans and adapting them in a way to provide students with direct learning opportunities in order to understand and develop concepts. By using student's preferences and making activities meaningful, interveners have noticed an increase in academic engagement levels from the students.

Interveners Increasing Educational Trends

The interviews with the nationally qualified interveners recognized the significance the training had on their relationship with their students as well as the impact their role had on their students' academic outcomes. As mentioned in the literature review, the development of communication and literacy skills go hand in hand and therefore the growth in communication skills for these students would create a growth in academic performance as well. Identification and appropriate labeling can be the first steps the student's IEP team takes to determine if the role of the intervener is appropriate accommodation and service for the student. Earlier identification could mean an earlier support of a trained intervener, which can support in closing the academic achievement gap. More students who are deafblind, with the support of an intervener from an earlier age, can begin to access grade level academics and perhaps grade level classroom placement.

Implications on Research, Policy and Practice

Based on the results of this study, especially the quantitative analysis of the National Child Count of Children and Young Adults who are Deafblind, outcomes of students who are deafblind have remained consistent over the past five years. Primary eligibility guidelines need to be updated on local and state levels. State education agencies need to provide guidance to school districts and ensure students with combined vision and hearing loss are appropriately labeled as "deafblind" in their IEP rather than "Multiple Disabilities". Clear and succinct instructions and trainings need to be provided to special education administrators, school psychologists and other personnel who play pivotal roles when determining a child's eligibility. By categorizing a student under the primary eligibility category of "deafblind" can also help

districts connect with their state deafblind projects and receiving information on professional development opportunities including intervener training options.

A majority of the students who are deafblind are not in general education classrooms or accessing grade level curriculum, an assumption that is based on how the students are accessing standardized state assessments. The student may be placed in the most appropriate placement based on their need, but that should indicate students are placed in classrooms where they have access to highly qualified personnel, both classroom teachers and other instructional staff. This has not been the case for students who are deafblind. As mentioned before, teachers working directly with students who are deafblind often do not come into the classroom with a comprehensive understanding of their student's disability and the accommodations they require to be successful. There is also a lack of trained interveners in the field, with less than 30 individuals completing programs every year for the past five years.

The shortage in trained interveners is evident and it is clear that every child that requires an intervener does not have access to a trained intervener. In order to increase the number of interveners completing nationally recognized training programs, a recognition of the role within school districts is necessary. Districts not only need to create an official role for an intervener, but also define the qualifications for the role and clearly define what a "training" is required for an intervener to be considered an intervener. Further, the role should also include a pay scale that is competitive with similar personnel roles (e.g. sign language interpreters) and can therefore create an increase in the nationally recognized programs.

Limitations

The limitations of this research study need to be addressed. First and foremost, the quantitative portion of the study used the DBCC as its primary data source. The DBCC is self-

reported by school division special education administration and early intervention systems managers. The self-reporting aspect of the DBCC is a major limitation even though the sample size of the DBCC was large. Identification of all students who meet the IDEA definition of "deafblind" continues to be a barrier and therefore the DBCC does not reflect the entire population of students, birth to 21 years of age who are considered deafblind. Data available was aggregated by states and not available by individual students. Therefore, only demographics on all students combined was available rather than person by person. If the national data was available on an individual level, additional data analysis could have been conducted.

Data on interveners who completed nationally recognized programs was retrieved from email correspondence from the heads of the training programs. Not all programs had demographic data available on their program participants as well as where the participants are currently working or if they are still in the field. Further research can be conducted by identifying the states where the interveners are located and identifying percentage of students in general education settings and state assessment access to identify potential correlation.

The findings from the interviews also carried limitations. Since only four individual interviews were available to be coded, the sample size was not as large as it could have been to strengthen the findings. The interviews were conducted in 2019 during a graduate course which provided a limited timeline for participant recruitment. Had the recruitment period been longer, more interveners would have been interviewed and additional findings acquired. The sample size this small cannot accurately represent the population of trained interveners across the United States. For future study purposes, recruiting interveners from different areas of the country as well as different school settings (e.g. inclusive classroom, self-contained, charter, private, etc.) and school types (elementary, middle or high school) can only enhance the findings and support

creating a deeper understanding of quality of intervener services across settings. Interviews were also coded by two professionals with an understanding of deafblindness and a positionality on interveners and the importance of training. Coders without a background in deafblindness would have removed potential researcher bias.

Recommendations

Research on the impact of interveners is extremely limited based on the literature review provided. Identifying the impact of trained interveners on student-based outcomes is imperative. Interveners are not recognized in a majority of the states in the U.S. and untrained individuals are working with students who are deafblind. To further examine the impact of interveners on students who are deafblind, conducting a single-subject research design would be the immediate next step in investigating the effectiveness of using trained interveners on communication strategies for students who are deafblind. Using an assessment tool such as the Communication Matrix (Rowland, 2011) can identify specific areas of communication intents (i.e. to obtain something, to refuse or reject something, for social purposes, and to seek information). The Communication Matrix can provide the study with measurable quantitative data that can supplement the information shared by the trained interveners and the DBCC.

Conclusions

The goal of the current mixed methods study was to identify the trends in the population of children and young adults who are deafblind receiving services under the Individuals with Disabilities Act. Based on the national data available, trends in educational access, more specifically classroom settings of students and how they are accessing standardized state assessments, were analyzed. Additionally interviews from four nationally qualified interveners were coded for themes on how training can impact educational outcomes for students who are

deafblind. The study contributes to the existing literature in the field of deafblind education by identifying the stagnant state of services students who are deafblind receive. As literature on evidence-based deafblind practices increases over time, outcomes for students who are deafblind should be increasing as well. The use of trained interveners and connecting it to the National Child Count Data for Children and Young Adults who are Deafblind also identifies opportunities to study the role of the intervener further. With additional research conducted on interveners and how their role can increase student-based outcomes, it can create a need for an official position in school districts and provide more students who are deafblind with access to highly qualified school personnel.

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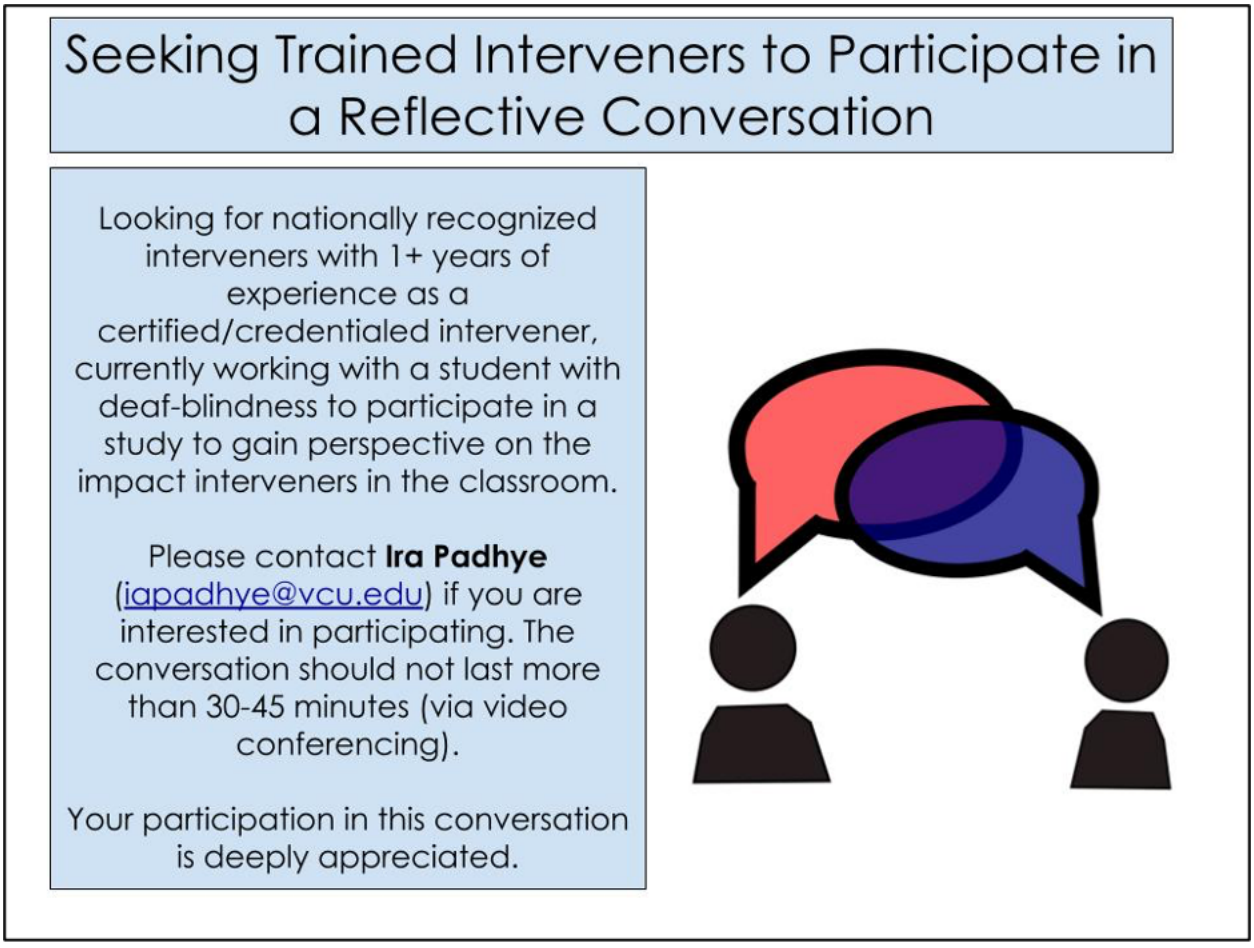
Appendix A

Email and Flyer Requesting Participants for Study

Hello State Projects,
This is Ira Padhye from the Virginia Deaf-Blind Project. I am working on my doctorate right now and I'm conducting a study where I want to talk to certified/credentialed interveners and. look at their perspectives regarding their impact on the students they work with. I ask that the interveners have 1+ years of experience as certified/credentialed intervener and are currently in the role of an intervener within the classroom. If you have any interveners in mind, could you pass along the attached flier? If you have any questions about my study, I would love to talk with you. You can always email me separately!

Thank you,
Ira Padhye



Appendix B

Research Participant Information and Consent Form

INTRODUCTION:
My name is Ira Padhye and I am a PhD student in Special Education and Disability Policy at Virginia Commonwealth University. I am conducting this study in order to understand how trained interveners impact their student's communication, social and academic development. Upon hearing the specifics of the study and if you agree to participate, I will require that you sign this consent form.

PURPOSE OF THE STUDY:
The purpose of this research study is to understand how trained interveners implement their specialized skill set with their students with deaf-blindness and how it impacts their students' communication/language, academics, and social skills. I am asking those interveners who have participated in training from either Utah State University, Central Michigan University or the National Center on Deaf-Blindness's Open Hands Open Access Deaf-Blind Intervener Modules. By getting a better understanding of your role and your experience, I want to share with other school districts how trained interveners can support students with deaf-blindness within the classroom.

DESCRIPTION OF THE STUDY AND YOUR INVOLVEMENT:
You are invited to participate in the study because you have a nationally recognized intervener certification. I am interested in learning about your role and how you have used your training with your students. I would like to talk with you individually using Zoom Video Conferencing. Our conversation should last for about 30 to 45 minutes. I will interview during a time that is convenient for you. I understand time is limited and I am flexible in having our talk before or after school hours. I will need to record our conversation so I will be able to accurately capture what you share with me. The actual recording will not be shared, and pseudonyms will be used instead of your real name. Other information such as school or student information will also not be shared. I will share the transcript of our conversation with you and give you a chance to review your answers and make sure I have accurately captured your message.

SHARING INFORMATION:
By signing the consent form below, you are agreeing to participate in one 30-45-minute interview. You will have the choice of not answering any of the questions. Information I have received from you will be used in a paper for a course.

RISKS AND DISCOMFORTS:
I will ask open-ended interview questions about your work with students with deaf-blindness. If at any moment, you ever feel uncomfortable with any of the questions that I may ask, you can choose not to respond or leave the interview at any time. Additionally, if I feel that you are ever experiencing any excessive distress or discomfort, I may end the interview. I believe these potential risks and discomforts are unlikely.

BENEFITS TO YOU AND OTHERS:

You may not receive any direct benefit by participating in this study, though you are able to offer your perspectives on how interveners impact the educational outcomes of students with deaf-blindness, which will provide valuable information that may help other schools throughout the country hire trained interveners for students in their school district.

ALTERNATIVES:
Because participation is voluntary and there are no costs or consequences of not participating, there are no alternatives for participation other than to not participate.

CONFIDENTIALITY:
Any identifiable information, including your name, your student's name, location and school, will be removed when transcribing the interview. Specific quotes might be used in the paper, but any identifiable information will be removed if the quote contains it. If you say your name or any other identifiers, they will be replaced with pseudonyms in order to protect your identity. Once the interview is transcribed, the digital recording will be deleted. All information pertaining to this study will be kept in a secure, password protected drive and only I will have access to the information.

If, as part of this research, we learn about real or suspected child abuse, the law says we have to let the appropriate authorities know so they can protect those individuals at risk.

VOLUNTARY PARTICIPATION AND WITHDRAWAL:
Your participation in this study is completely voluntary. There will be no penalty if you chose not to participate. The details that are shared in our interview will not impact the relationship between your school and your State Deaf-Blind Project. The information shared will also not impact the type of technical assistance your classroom and school receive from the project. The information gathered is solely for the purpose of my PhD studies and not be used for any Office of Special Education Programs (OSEP)'s grant funded activities.

QUESTIONS:
If you have any questions, complaints, or concerns about your participation in this study, please do not hesitate to contact the following people:

Ira Padhye, iapadhye@vcu.edu
Dr. David Naff, naffdb@vcu.edu

The research/study faculty and student members named above are the best people to contact with questions about your participating in this study.

CONSENT:
I have been given a chance to read this consent form. I understand the information about this study. Questions that I wanted to ask about this study have been answered. My signature says that I am willing to participate in this study. I will receive a copy of the consent form once I have agreed to participate.

_____

Name of Participant (Printed)

_____

Signature of Participant ***Date***

Appendix C

Interview Protocol/Script

Introduction:
Thank you for agreeing to speak with me today. I am here as a part of class project studying the perceptions of interveners on their impact on their students. I will be audio recording our discussion today so I can transcribe it later for analysis. While I may use direct quotes from our discussion in my reporting, your name will never be attached to anything you say in any research reports. Additionally, because this is for a class project, our findings will only be viewed by other students in our course and our course instructors at the Virginia Commonwealth University. What you say here today will have no impact on your position in your school or relationship with your state Deaf-Blind Project. I hope you will feel comfortable speaking honestly about your experiences. Just as I will protect your confidentiality, I ask that you keep what we discuss today private by not discussing our conversation with anyone else. Do you have any questions before we begin? Do I have your permission to record our conversation?

START RECORDING

Research Question	Interview Questions
Introductory Questions	• How long have you been in the role of the intervener? • Which course did you use for obtaining your certification/credential? • Can you please describe your school setting? How many students are in the classroom? Any other students with deaf-blindness? Other disabilities? Any other interveners?

How do interveners help students with deaf-blindness develop peer relationships?	• What does your student do to initiate communication/conversation with someone?
	  o Does he/she acknowledge other students in the classroom? Show interest in others?
	  o How do you know that your student is showing interest in his/her peers? What behaviors do you typically see?
	  o How does your student interact with his/her peers without disabilities?
	• What types of social activities does your student participate in throughout the school day?
	  o What does your student do during recess or lunch time?

How do trained interveners promote communication and language development to students with deaf-blindness?	• Can you describe the current mode of communication your student uses to express his/herself?
	  o What are the differences in the way he/she communicates versus what he understands?
	  o What type of prompting does your student require when communicating? Modeling, touch cue, visual prompt?

How do trained interveners promote academic achievement for students with deaf-blindness?	• What types of "units" or "themes" do you and your students participate in the classroom (i.e. plants, colors, etc.)?
	• How do you incorporate the highlighted vocabulary into all your lessons with the student?
	• Does the student have access to the actual, real-life objects that are being discussed (i.e. If the theme is leaves, does the student have access to real leaves from a tree as opposed to artificial leaves from a craft store?
	• What does the student do to let you know that he/she has understood the meaning of the vocabulary word?
	• Do you get to participate in the student's IEP?
	  o How do you provide input to the student's IEP?
	  o Which areas/subjects does the student show most growth? Are there specific areas where the child has achieved all of his/her goals?
	  o What type of data does the classroom collect on the student's IEP goals?
	• Can you describe how your student participates in the State Standardized Assessments each year?

Is there anything you would like to add about your role as an intervener that you feel didn't get captured in the interview?

STOP RECORDING

Ok. So, now I will stop the recording. I want to thank you for taking time out of your schedule to participate in this conversation. Your input is extremely valuable, and I am grateful to your dedication to the field of deaf-blindness. After I am finished transcribing this interview, I will email you a copy of the transcription to make sure that your thoughts were accurately captured. If you have any other questions about this study that I could answer? Again, thank you for your time and I will be in touch with you shortly!

Appendix D

Interview Coding Manual

Code	Abbreviation	Definition	Examples
Language Development	COMM_LANG_DEV	Participant promotes the use of speech, sign language, voice out-put device or printed words with student	And this little girl learned tactile sign language. She had, I think, she learned her alphabet and just a couple of months. She learned, you know, full sentences, signing with me by the end of that year.
Communication Attempts	COMM_ATT	Participant promotes the use of gestures, vocalizations, picture symbols, whole objects with student.	He also now has really good "yes" "no" with his head, that actually just appeared this past year.
Calendar Systems	COMM_CAL	Participant mentions using the calendar/schedule system with student	And then she started using those symbols to communicate, "I want lunch", "Lunch", "We're going to lunch" or "I want to go to the bathroom", "We're going to the bathroom".
Gains in Mathematics	ACAD_MATH	Participant mentions adapting materials/lessons to support math development.	I used a drum because he loved drums and loud noises. And he'd have to hit a switch when I reached 20 and I, you know, drum like I was going to go past and didn't stop at 20, I kept drumming.
Gains in Literacy	ACAD_LIT	Participants mentions adapting materials/lessons to support literacy development.	I made him an ABC book where its like a flip book, so I had, it was like yellow and red and then I had a light that I shined on each letter so he could look at, and also used light aid as well and these letters were textured on the flip book for him.

Appendix E

Council of Exceptional Children's (CEC) Special Education Paraeducator Intervener for Individuals with Deafblindness competencies.

Skills Competencies
1. Establish a trusting relationship with the individual
2. Provide an atmosphere of acceptance, safety, and security that is reliable and consistent for the individual
3. Promote positive self-esteem and well-being in the individual
4. Use and maintain amplification, cochlear implants, and assistive listening devices as directed
5. Use and maintain glasses, low vision devices and prostheses as directed
6. Maximize the use of residual vision and hearing
7. Facilitation of the individual's understanding and development concept
8. Vary the level and intensity of input and the pacing of activities
9. Implement methods and strategies for effectively conveying information to the individual
10. Promote social interactions and the development of meaningful relationships with an ever expanding number of people
11. Adapt materials and activities to the individual's needs as directed
12. Implement intervention strategies for the individual's daily care, self-help, transition, and job training
13. Provide the individual with opportunities for self-determination
14. Make adaptations for the cognitive and physical needs of the individual
15. Implement methods and strategies for effectively conveying information to the individual
16. Use strategies for eliciting expressive communication
17. Collect data and monitor progress as directed
18. Use routines and functional activities as learning opportunities
19. Use techniques to increase anticipation, motivation, communication, and confirmation
20. Adapt materials and activities to the individual's needs as directed
21. Implement intervention strategies for the individual's daily care, self-help, transition and job training
22. Facilitate individual's use of touch for learning and interaction
23. Utilize strategies that support the development of body awareness, spatial relationships, and related concepts
24. Utilize strategies that promote independent and safe movement and active exploration of the environment
25. Implement positioning and handling as directed by the OT/PT/O&M specialists
26. Promote the use of sighted guide, trailing, and protective techniques as directed by the O&M specialist
27. Implement strategies for travel as directed by an O&M specialist
28. Implement the use of mobility devices as directed by the O&M specialist
29. Utilize teaming skills in working with team members

30. Communicate and problem-solve with the IFSP/IEP team about the student's needs as appropriate
31. Provide an atmosphere of acceptance, safety, and security that is reliable and consistent for the individual
32. Provide one-on-one intervention
33. Use routines and functional activities as learning opportunities
34. Facilitate direct learning experiences
35. Facilitate interdependence for the individual
36. Vary the level and intensity of input and the pacing of activities
37. Use strategies that provide opportunities to solve problems and to make decisions and choices
38. Provide the individual with opportunities for self-determination
39. Use touch to supplement auditory and visual input and to convey information
40. Facilitate individual's use of the other sense to supplement learning modalities
41. Make important adaptions consistent with the medical needs of the individual as directed
42. Make adaptations for auditory needs as directed
43. Make adaptations for visual needs as directed
44. Facilitate language and literacy development
45. Observe and identify the communicative behaviors and intents
46. Implement methods and strategies for effectively conveying information to the individual
47. Respond to the individual's attempts at communication
48. Use communication techniques specific to the individual
49. Incorporate/embed language and communication into all routines and activities
50. Use strategies to promote turn-talking
51. Use strategies to enhance and expand communication
52. Share observations of individual's communication skills with others
53. Interact with families as directed
54. Use prescribed strategies to respond to the individual's behavior
55. Utilize strategies to promote sensory integration
56. Incorporate/embed language and communication into all routines and activities

CURRICULUM VITAE

Ira A. Padhye, M.Ed

Revised: November 14th, 2023

PERSONAL INFORMATION

Ira A. Padhye
2400 E Cary Street, APT 423
Richmond, Virginia 23223
Phone: (617)-784-7742
Email: iapadhye@vcu.edu

LICENSURE

Massachusetts – Teacher of Students with Severe Disabilities (K-12)

EDUCATION

2023 (Expected)	Ph.D., Special Education and Disability Leadership Virginia Commonwealth University Dissertation: Supporting Students who are Deafblind to Increase their Access to the General Education Curriculum through Trained Interveners: A Mixed Methods Study
2012	M.Ed., Severe and Low Incidence Disabilities Boston College
2008	B.S., Biology University of Massachusetts Boston

PROFESSIONAL EXPERIENCE

2022-present	Interim Director, Center for Sensory Disabilities, Partnership for People with Disabilities, Virginia Commonwealth University, School of Education, Richmond, VA.
2020 - present	Project Director, The Virginia Deafblind Project, Partnership for People with Disabilities, Virginia Commonwealth University, School of Education. Richmond, VA.
2015 – 2020	Project Coordinator**,** The Virginia Project for Children and Young Adults with Deaf-Blindness, Partnership for People with Disabilities, Virginia Commonwealth University, School of Education. Richmond, VA

2012 - 2015 Classroom Teacher for Students with Deaf-Blindness, Perkins School for the Blind, Deaf-Blind Program. Watertown, MA

Courses Taught

SEDP 700: Externship: Severe Disabilities (Clinical Supervision). Virginia Commonwealth University. Fall 2020. Spring 2021. Fall 2021, Spring 2022, Fall 2022, Spring 2023

Guest Lectures

SEDP 501: Characteristics of Individuals with Disabilities. Legal History of Providing Services to Individuals with Severe Disabilities and Disability Policy. Virginia Commonwealth University. Fall 2020.

SEDP 501: Characteristics of Individuals with Disabilities. Sensory Disabilities. Virginia Commonwealth University. Fall 2020.

EDUC 453:Characteristics and Accommodations for Students with Mild/Moderate Disabilities in the General Curriculum. The College of William and Mary. Summer 2020.

SEDP 330: Survey of Special Education: Introduction to Deaf-Blindness. Virginia Commonwealth University. Fall 2016, Spring 2017, Fall 2017, Spring 2019, Fall 2019, Spring 2020

TEDU 588: Classroom Management. Special Education & Behavior Support. Virginia Commonwealth University. Summer 2019.

ECSE 601: Assessment of Infants and Young Children with Disabilities: Identifying Vision and Hearing Loss in Infants and Young Children. Virginia Commonwealth University. Spring 2018, Spring 2020

EDSE 513: Medical and Educational Implications of Visual Impairments. CHARGE Syndrome and Educational Implications. George Mason University. Fall 2018, Fall 2019

SPED 576: Visually Impaired Learners with Additional Disabilities. Emergent Literacy Development: An Expanded Literacy Perspective. Portland State University. Spring 2019.

Bibliography

Scott, L., Taylor, J., **Padhye, I.**, Bruno, L. Brendli, K., Wallace, W. & Cormier, C. (2020). (in press). Why do they stay? Factors associated with special education teachers' persistence. *Remedial and Special Education.*

Scott, L., Powell, C., Bruno, L., Cormier, C., Hall, K. Brendli, K., **Padhye I.**, Taylor, J., & Vitullo, V. (2020). (in press). The other fifty percent: Expressions from special education teachers about why they persist in the profession. *Teacher Education and Special Education.*

Scott, L., Powell, C., Oyefuga, O., **Padhye, I.**, Cormier, C. (2021).. Complementary review of the literature on special education teachers of color's attrition and retention patterns: what we know and how we move forward. *Multiple Voices for Ethnically Diverse Exceptional Learners, 21(1)*, 3-39.

Relevant Conference Presentations and Workshops

Hodes, H. & **Padhye, I**. (July 2019). *An Overview of the Child Guided Assessment.* Creating Connections to Shining Stars 2019 Conference. Roanoke, VA.

Hodes, H. & **Padhye, I**. (June 2019). *Developing Literacy for Students with Sensory Loss and Additional Disabilities*. Opening Doors Unlocking Potential 2019 Conference. Richmond, VA.

Padhye, I. (June 2017). *CHARGE-ing: An Overview of CHARGE Syndrome.* Opening Doors Unlocking Potential 2017 Conference. Richmond, VA.

Durando, J. & **Padhye, I.** (June, 2017). *Make it Routine: Connecting Communication, Schedules, and Literacy.* The Colorado Services for Children & Youth with Combined Vision and Hearing Loss Project. Denver, CO.

Padhye, I. (April, 2017). *Supporting Students with Deaf-Blindness*. Special Education Conference 2017. Fairfax, VA.

Padhye, I (July 2016). *Developing Literacy for Children with Sensory Loss & Additional Disabilities.* Opening Doors Unlocking Potential 2016 Conference: Richmond, VA.

Durando J. & **Padhye, I.** (June 2016). *Building Literacy Foundations for Students with Multiple Disabilities.* Connections Beyond Sight and Sound: Maryland & DC Deaf-Blind Project – Summer Institute 2016: College Park, MD.

Durando J. & **Padhye I.** (March 2016). *The ABCs of Literacy: Where to Start with Children who have Sensory Loss and Multiple Disabilities* (Webinar). Outreach Services, The Virginia School for the Deaf and the Blind: Staunton, VA.

Tibaudo, M., Connaughton, M. **Padhye I.** & Stelzer S. (April 2016). *Literacy for Students with Visual Impairments & Multiple Disabilities.* Perkins e-Learning: Watertown, MA.

Bilms M., Connaughton, M., Hulburt C. & **Padhye I.** (July 2014). *Literacy Adaptations for Children who are Deaf-Blind* (Webinar). Perkins e-Learning: Watertown, MA.
Connaughton, M. & **Padhye, I.** (April 2014). *ABC's of Literacy: Strategies for Students with Deaf-blindness and Multiple Disabilities.* Early Connections Conference 2014. Watertown, MA.

Bilms, M. & **Padhye, I.** (December 2013). *ABC's of Literacy: Strategies for Students with Deaf-blindness and Multiple Disabilities*. Getting in Touch with Literacy 2013 Conference: Providence, RI.

University/School Committees

2022	Member, Faculty Search Committee, Partnership for People with Disabilities (Research & Evaluation Associate), Virginia Commonwealth University.
2019-2020	Member, Faculty Search Committee, Technical Assistance Center for Children who are Deaf and Hard of Hearing (Project Director), Partnership for People with Disabilities, School of Education, Virginia Commonwealth University.
2019	Member, Peer Review Committee, VCU Libraries, Virginia Commonwealth University
2017-2018	Chair, Faculty Search Committee, Virginia Project for Children and Young Adults with Deaf-Blindness (Technical Assistance Specialist), Partnership for People with Disabilities, School of Education, Virginia Commonwealth University.

Papers Presented: National/International

Padhye, I., Hicks, M. & Bowen, R. (2022, January). *Perspectives of Working Interveners and Their Impact on Students with Deaf-Blindness*. Poster accepted at Council of Exceptional Children in Orlando, FL.

Padhye, I., Morse, A., Powell, C. & Thoma, C. (2022, January). *A Secondary Data Analysis on the Diversity of Special Education Teacher Preparation Programs in Virginia.* Paper accepted at Council of Exceptional Children in Orlando, FL.

Padhye, I. (2021, November). *Strategies to Develop Expressive Communication for Students with Dual Sensory Loss: A Systematic Literature Review.* Poster presented at Teacher Education Division (TED) of the Council of Exceptional Children in Fort Worth, TX

Padhye, I., Morse, A. & Powell, C. (2021, November). *Diversity Among Special Education Teacher Preparation Programs in Virginia: A Secondary Data Analysis.* Paper presented at Teacher Education Division (TED) of the Council of Exceptional Children in Fort Worth, TX.

Padhye, I. (2021, March). *Interveners Working with Students with Deaf-Blindness: Perspectives on the Impact on Student Based Outcomes.* Poster presented at the Teacher Education Division (TED) Kaleidoscope Competition at Council for Exceptional Children (CEC) Live.

Scott, L., Bruno, L., Brendli, K. & **Padhye, I.** (2019, November). *The Similarities Between Personality Profile and Career Choice for Special Education Teachers.* Paper presented at the Teacher Education Division (TED) of the Council of Exceptional Children in New Orleans, LA.

Padhye, I. (2019, November). *Video Use in Coaching: Teacher Perceptions and Implications for Practice*. Poster presented at the Teacher Education Division (TED) of the Council of Exceptional Children in New Orleans, LA.

Grant Activity

2023 State Technical Assistance Projects to Improve Services and Results for Children who are Deaf-Blind. U.S. Department of Education, Office of Special Education Programs (OSEP Grant H326T180046, $258,237).
Role: Co-Principal Investigator and Project Director
Role in Preparation: Lead Author

2018 State Technical Assistance Projects to Improve Services and Results for Children who are Deaf-Blind. U.S. Department of Education, Office of Special Education Programs (OSEP Grant H326T180046, $236,230).
Role: Project Coordinator (PI: Julie Durando)
Role in Preparation: Supporting author and proofreader

Professional Development and Training Project in Deaf-Blindness. Virginia Department of Education.
Role: Principal Investigator/Project Director
Role: Co-author

Honors and Awards

Helen Keller Fellowship: Extending the Legacy (2011-2012). Western Oregon University/ National Center on Deaf-Blindness.

Sandra Davenport CHARGE Fellowship (2019). Charge Syndrome Foundation.

Membership in Organizations and Societies

2018-present	Council of Exceptional Children
2018-present	CEC, Teacher Education Division
2018-present	CEC, Division on Visual Impairments and Deaf-blindness