

# Summer 2025 Back to School Issue



## Visual Impairment and Deafblind Education Quarterly

Volume 70, Issue 3

The Voice and Vision of Special Education



Cover photo description: The cover photo is of two students working together to bottle-feed a calf at the Alabama Institute for Deaf and Blind Joe Tom Armbruster Agricultural Center.

Photo submitted by Kalie Mitchell.

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**Join us October 27, 2025 at 4 PM EST for a new webinar!**

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## **Powerful Partnerships: Improving Family-School Relationships for Students with Visual Impairments or Deafblindness**

**Members Free**

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This presentation highlights the importance of partnerships between parents and teachers of students with visual impairments and/or deafblindness. Several tools will be shared to provide concrete ways for facilitating this partnership. These resources are cumulative over time, a way of building the relationship and being responsive to student needs. Using a case study spanning from age two to eighteen, this presentation will highlight relevant and cumulative collaborative techniques that can be used at different stages of education in response to the changing needs at each point. These strategies are introduced in a step-by-step fashion representing the order in which they would first be used, but they can be repeated and/or maintained throughout the student's educational career resulting in an additive model of collaborative tools.

### **Learning Objectives:**

1. Participants will understand the unique dynamics that make collaboration between itinerant teachers of students with sensory impairments and their families so crucial.
2. Learners will be exposed to a case study scenario illustrating how student, family, and teacher characteristics change throughout the educational journey and how mutual respect and trust can be facilitated at each point.
3. Participants will learn how to implement five data-based tools to foster collaboration and information sharing between itinerant teachers and families.

### **Speakers: Dr. Beth Jones & Dr. Belinda Rudinger, East Texas A & M University**

Dr. Jones is currently a Professor of Special Education and Graduate Program Coordinator at East Texas A&M University (ETAMU). Appointed by Governor Abbott, she serves as a Board Member at the Texas School for the Blind and Visually Impaired (TSBVI). She is also a recipient of the TAER Texas Chapter Award for Outstanding Contribution (2021). Her research interests include collaboration with families, visual impairments, and assistive technology.

Dr. Rudinger is an Assistant Professor of Special Education, a certified assistive technology instructional specialist, and a former teacher of students with visual impairments. Her research interests include braille and assistive technology. Dr. Rudinger was recently appointed to the board of the Texas School for the Blind and Visually Impaired. She is currently the Vice President for the USA in the North American-Caribbean Region of the International Council for Education of People with Visual Impairment (ICEVI). She believes in the power of technology to facilitate growth and connection.

# Message from the Editor

**Kathleen M. Farrand**

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I hope that you all have enjoyed your summer. Whether it was spent working, relaxing, recharging, traveling, or all of the above; summer is a great time to enjoy the warmer weather and refocus for the start of a new school year. Our annual summer issue is focused on getting us all invigorated for the start of a new academic year.

The first article is by Alissa Eromae, the DVIDB presenter for the August 28<sup>th</sup> webinar, “From Surviving to Thriving: The impact of Family Education and

Support Programs.” Read more about the webinar objectives, focus, and engagement. DVIDB webinars are free to DVIDB webinars and non-members can attend for a fee. In addition, group packages are available for DVIDB webinars. I encourage you all to [register](#) for the upcoming webinar.

The second article, by Hilary E. Travers, Samuel Preston, and Katrina Dubree, shares the amazing work of an OSEP-funded project, *EMPOWERing Transition-Aged Youth with Visual Impairment*. Read to learn more about the project, website, resources, online courses, newsletter, and much more. Next, read about Saurym Quezada, a doctoral candidate at Florida State University, and learn about her journey to the field of visual disabilities education. She is a passionate emerging scholar who also serves as the DVIDB student ambassador.

The next three articles share inspiring work that is happening in Alaska and Alabama. Kimberly Conlon and Ashli Mackey provide orientation and mobility information and strategies, as well as ideas for partnerships in your region and state. This is a must read for those of you looking for creative ways to support students with orientation and mobility skills. The following two articles provide insight to the great work happening at the Alabama School for the Blind. Dennis Gilliam and Jacque Cordle share the history and continued legacy of the Alabama School for the Blind (ASB). I know you will enjoy reading about the ASB experience and the amazing focus on academic, arts, athletics, and advocacy.

Tiffany Wild and Kalie Mitchell provide us with an exciting article about agriculture education at ASB. This article is full of valuable insight, from ways to incorporate the expanded core curriculum to recommendations for those interested in starting their own Agriscience program.

The final article of the issue is a peer reviewed research article that examines the childhood play experiences of adults with visual impairments. The researchers and authors, Hisae Miyauchi, Tina Herzberg, Marie-Luise Schütt, and Robinson Thamburaj, provide valuable perspective across four different countries on play and STEM. Make sure to carve out some time in your busy schedule to enjoy this issue.

Are you presenting at the CEC 2026 Convention and EXPO on something in the field of visual impairments and deafblindness that you would like to share with our members? Email me ([Kathleen.Farrand@asu.edu](mailto:Kathleen.Farrand@asu.edu)) for more information and to submit an article for the Convention issue about your presentation.



# President's Message

**Adam Graves,**

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Welcome to the summer edition of *VIDBE-Q*. Hopefully, this issue finds most of you returning from a much-needed break over the summer months. Before you begin browsing through this issue of the Q, I'd like to take some time to highlight some of the activities that we have planned for you this school year and that you can find featured throughout this issue.

First, we are very excited to have Alissa Eromae from the Foundation for Blind Children open our 2025-2026 [webinar](#) series in August. In her presentation:

From Surviving to Thriving: The Impact of Family Education and support Programs she will share information on how support programs for parents can help families with children who are blind and low vision build resilience. We hope that you will make time on August 28 at 4:00PM ET on your calendar so that you can participate in this impactful presentation.

Make sure also that you plan some time to join us [October 27 at 4:00PM ET](#) as our President-Elect, Dr. Beth Jones and our membership co-coordinator Dr. Belinda Rudinger share their presentation entitled: Powerful Partnerships: Improving Family-School Relationships for Students with Visual Impairments or Deafblindness. This presentation will provide examples of case studies that illustrate how itinerant TSVIs can learn to build strong, trusting relationships with parents of students who are blind, visually impaired, and DeafBlind.

Finally, if you have not already booked your ticket to Birmingham, Alabama for [Getting In Touch with Literacy](#) in November, I would highly encourage you to try to attend that event as well. I have heard from many TSVIs over the years who describe Getting In Touch with Literacy as their favorite conference and we have no doubt that this year will only add to that sentiment. Several leaders from the DVIDB board and membership have worked very hard to put together a great program for this year's conference and we are very proud to be one of the primary sponsors of this event. There is still time to register for the conference which will

take place November 5-8. You can get all the details and submit your registration for Getting In Touch with Literacy on the DVIDB website.

As always, we will soon be looking for nominations for our annual awards and holding elections for the open positions on our board again this year. I have found that attending the DVIDB webinars, writing an article for *VIDBE-Q*, providing a presentation at the CEC conference, nominating fellow VI professionals for awards and serving on the board of directors are just a few of the big and small ways that I have been able to help make DVIDB a place that promotes my values and amplifies my voice as an educator and VI professional. I hope that you will join me in connecting with our division through your nominations, your presentations, your votes and your participation.

We hope this issue of the Q provides you with inspiration for the upcoming school year. We also hope that you will join us for some of the events and activities that you can learn more about when you read through this publication and visit our [website](#), as we continue to build and grow our DVIDB community.



**Join us August 28, 2025 at 4 PM EST for a new webinar!**

## **From Surviving to Thriving: The Impact of Family Education and Support Programs**

**Members Free**

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This presentation addresses the critical role of parent support programs in promoting resilience and confidence among families raising children with low vision and blindness. Attendees will gain immediately applicable tools, including evidence-based strategies, program development recommendations, and real-life case examples, that can be directly implemented to enhance family support services in their professional services. The presenter will introduce evidence-based strategies to help practitioners implement peer mentorship, guidance discussions, and structured learning opportunities. Emphasizing inclusivity and cultural responsiveness, the session highlights key approaches such as free participation opportunities, culturally specific community speakers, and multilingual support options to ensure accessibility for diverse families. Attendees will leave with practical tools and a roadmap for creating inclusive parent education programs, ensuring that all families have the resources and support needed to not just survive, but thrive.

### **Learning Objectives:**

1. Participants will identify four processes that foster a sense of thriving in families caring for a child with low vision and blindness.
2. Participants will identify three positive outcomes associated with thriving families as related to emotional, physical, and behavioral well-being.
3. Participants will provide four examples of practical strategies used in creating or expanding Family Education and Support programs.

### **Speaker: Alissa Eromae, MSW, Foundation for Blind Children**

She received her Master of Social Work degree from the University of Washington, focusing on relationship-based interventions. Alissa is endorsed as an Infant Mental Health Specialist and certified to provide reflective consultation to therapists and other early childhood providers. After many years of direct service to families, Alissa discovered the unexpected joy of mentoring professionals, leading teams, and empowering providers of all kinds. As the Director of Early Intervention and Research at the Foundation for Blind Children in Arizona, she is honored to lead an incredible team of specialized vision providers.

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# From Surviving to Thriving: The Impact of Family Education and Support Programs

**Alissa Eromae**

Foundation for Blind Children, [aeromae@seeitourway.org](mailto:aeromae@seeitourway.org)

**Target Audience:** This webinar is intended for a broad spectrum of professionals committed to supporting young children with vision loss. It is especially relevant for early intervention practitioners and specialists in visual impairment, students and trainees in early childhood education, program directors and policy leaders, researchers and professionals focused on inclusive practices, and family support providers. Whether you're working directly with children and families or shaping systems and services, this session offers valuable insights and practical strategies for advancing equity and excellence in early childhood vision care.

**Webinar:** From Surviving to Thriving: The Impact of Family Education and Support Programs

**Date and Time:** August 28, 2025, 4 PM (EST)

**The objectives of this presentation will include:**

1. Participants will identify four processes that foster a sense of thriving in families caring for a child with low vision and blindness.
2. Participants will identify three positive outcomes associated with thriving families as related to emotional, physical, and behavioral well-being.
3. Participants will provide four examples of practical strategies used in creating or expanding Family Education and Support programs.

This Division on Visual Impairments and Deafblindness (DVIDB) webinar will address the need for structured, strengths-based support programs for families raising children with visual impairments. Families navigating early childhood vision loss often experience increased demands related to caregiving, service coordination, advocacy, and emotional adjustment. While many families bring strong advocacy skills and community ties, others face barriers to accessing culturally relevant support and opportunities for connection.

In this presentation, the presenter will share findings from a qualitative study conducted by the Foundation for Blind Children examining a no-cost parent training and support program. This program included monthly sessions featuring peer discussions, informational workshops, community outings, and respite care. It was designed to create a safe, inclusive space for families to learn from

professionals and one another, while fostering long-term peer support networks. Using Feeney and Collins' (2015) Thriving Framework, the study examined four core supports that contribute to well-being: safe haven, fortification, reconstruction, and reframing. Interviews and focus groups with 14 participating mothers revealed how these elements were brought to life through the program. The presentation will highlight the specific program components identified by participants as contributing to their sense of thriving, offering practical insight into how structured support can foster resilience, connection, and growth.

This session addresses a critical gap: the limited data on how parent support programs impact families of children with visual impairments. When designed with intention, parent training and support programs can align with the Division of Early Childhood Recommended Practices (2014) by incorporating culturally responsive strategies such as multilingual support, no-cost participation, and diverse guest speakers. Although parent support models are widely used in early childhood, few are tailored to the specific experiences of visual impairment or the intersectional needs of families navigating disability and equity-related barriers. Practitioners will gain concrete strategies for implementing or enhancing family support programs through a strengths-based lens. These strategies include promoting emotional well-being, fostering advocacy, and reinforcing family resilience. Key takeaways will highlight how to structure programs with both

formal and informal learning opportunities, support peer mentorship, reduce access barriers, and ensure inclusive engagement.

To support active engagement and application of the content, the webinar will include multiple opportunities for participants to interact. Attendees will be invited to reflect on their own experiences through brief scenario-based prompts and guided discussion questions embedded throughout the presentation. A dedicated question-and-answer segment will allow for deeper exploration of ideas and real-world challenges. Participants will also have opportunities to share how the strategies presented could be adapted within their unique roles or service settings. Gaining insight into how families experience thriving within support programs enables practitioners to create more responsive, community-driven systems that nurture connection, resilience, and long-term positive outcomes.

## References

Division for Early Childhood. (2014). *DEC recommended practices in early intervention/early childhood special education 2014*. <http://www.dec-sped.org/dec-recommended-practices>

Feeney, B. C., & Collins, N. L. (2015). A new look at social support: A theoretical perspective on thriving through relationships. *Personality and Social Psychology Review*, 19(2), 113–147.



# EMPOWERing Youth with Visual Impairment: An OSEP-Funded Project

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For more than four decades, the field of secondary education and transition has focused on equipping young people with disabilities to succeed in their schools, workplaces, and communities after graduation. Although the language of “outcomes” has dominated this dialogue across federal legislation, the process of transition is fundamentally concerned with supporting young people to have a high quality of life (Turnbull et al., 2003). Yet, large disparities in outcomes persist between students who are blind or have low vision (B/LV). The field of transition undoubtedly requires new, innovative approaches to provide students who are B/LV with experiences that address the pervasive gaps in their outcomes. Moreover, professionals and families require support in facilitating high-quality in-school experiences, particularly in rural and remote areas.

In an effort to overcome these persistent challenges and support innovation, the Office of Special Education Programs put out a request for proposals with the absolute priority of “Supporting Technology-Based Approaches to Transition Experiences for Secondary Students with Sensory Disabilities.” In response, Drs. Hilary Travers at Vanderbilt University and Michele Schutz at the University of Illinois Urbana-Champaign submitted a proposal, *EMPOWERing Transition-Aged Youth with Visual Impairment* (Equipping More Professionals On Work and Education in Rural communities; EMPOWER VI), and were awarded a discretionary grant with funding from October 2023 to September 2028. In this article, we detail the grant deliverables and how the work of EMPOWER VI is already having an impact on students, families, and professionals across the country.

## **EMPOWER VI**

Transition into living independently, college, and/or competitive employment may pose many challenges for blind and visually impaired youth. Living in rural areas may provide additional challenges. These challenges can often be addressed with adequate exposure to the expanded core curriculum and supportive resources. The goal of EMPOWER VI is to address some of these challenges and provide necessary support.

- David M. Ballmann, Transition Specialist & Parent Liaison, Wisconsin Center for the Blind and Visually Impaired

EMPOWER VI employs a multi-pronged virtual approach to address the most pressing needs of students who are B/LV, their families, and school-based transition professionals. Virtual resources and training allow EMPOWER VI to disseminate materials, respond quickly to identified training needs, curate flexible programming, and eliminate the cost and complication of travel. Many parents and educators of students who are B/LV in rural areas are the only such parents or educators in their communities. Transition-aged students who are B/LV may not have local exposure to other individuals who are B/LV. As a result, each of these groups often struggles to envision postsecondary education and employment for students who are B/LV, understand how to pursue work, or know how to acquire the support they need to attend a postsecondary program—particularly if access to pre-vocational or pre-college experiences is limited in their middle and high schools. To remediate these isolated experiences, EMPOWER VI creates opportunities for personal connection, joint learning, collaboration, and community building among these groups. Below, we summarize our project deliverables and how each is having an impact on our target audiences.

## **Our Website**

During the first year of our grant period, we developed a high-quality, fully accessible website ([www.empowervi.org](http://www.empowervi.org)) that serves as a central hub for all our materials and resources.

## ***Resources***

The Resources page of our website houses free, fully accessible, downloadable resources that support the transition needs of students who are B/LV. Resources can be sorted by expanded core curriculum (ECC) topic area, Pre-Employment Transition Services (Pre-ETS) category, audience (student, family member, professional), or type (i.e., Video, EMPOWER VI resource, Partner resource). At the time of this writing, EMPOWER VI had 60 resources available. Examples of resources developed by EMPOWER VI include *Writing a Professional Email with Screen Reader Support (Video)*, *Expanding Employment Horizons: Inspiring Futures for Blind and Low Vision Youth*, and *Outside Agencies to Strengthen Student Transition*. Examples of resources developed with partners include fact sheets about *Envision*, *Guide Dog School Research Questions*, and *American Printing House (APH) CareerConnect*.

## ***Online Courses***

Accessing quality transition resources should not depend on your zip code. That is why we have created an online hub full of accessible, self-paced online courses for students who are B/LV, and those who support them. For students, we have seven courses currently available, with more published every year. Current courses include *Employment Accommodations*, *Moving into an Apartment- Things to Consider*, and *Self-Determination and Self-Advocacy*. For families, we have

three courses currently available, including *An Introduction to Secondary Transition – for Families* and *Introduction to the Expanded Core Curriculum (ECC) – for Families*. Finally, for professionals, we have nine courses currently available. These courses include *Introduction to Career and Technical Education (CTE) – for Professionals*, *Outside Agencies and Informal Supports to Strengthen Student Transition – for Professionals*, and *Writing a Transition Plan as a TVI – for Professionals*.

## **Newsletter**

On the last Tuesday of every month, we send out an accessible newsletter to subscribed members. Each newsletter provides EMPOWER VI program updates, including new resources, courses, and opportunities; we spotlight our community partners; and we introduce readers to a single transition topic. For each topic, we provide a description and summary, with links to relevant resources. At the bottom of each email, we offer suggested action steps for students, families, and professionals to take. In addition to our monthly newsletter, we also send a mid-month special announcement newsletter highlighting partner organization opportunities for B/LV students, families, and professionals. Anyone is welcome to sign up for the newsletter through our website ([www.empowervi.org](http://www.empowervi.org)).

## **Advisory Boards**

We believe the best way to support the B/LV community is to listen to their voices. That is why we have both a Student and Adult Advisory Board, made up of individuals who are B/LV.

### ***Student Advisory Board***

The EMPOWER VI Student Advisory Board is composed of youth aged 16–22 who are currently enrolled in high school or transition programs from across the country. Meeting monthly via a virtual platform, these students offer critical feedback and insight drawn from their lived experiences in education, employment, and community life. Their contributions help shape the accessibility, relevance, and impact of our resources and activities, particularly for transition-aged youth in rural areas. Advisory members also engage in independent reviews of project materials and advocate for inclusive practices that support the success of all youth who are B/LV. Below are two quotes from some 2024-2025 board members in response to the question, “What do you enjoy about being a member of the EMPOWER VI student advisory board?”

“It just feels good to be surrounded by people who are actually accomplishing a lot of good things. So, it motivates us to do more things in life.” – Kat

“I feel like it's really just been nice to kind of have a connection to what's going on in Blind World. But it's also been nice to hear other people's perspectives and be surrounded by people who want to change the future of the low vision community and can see areas of improvement.” – Addison

### ***Adult Advisory Board***

Our Adult Advisory Board members similarly meet monthly to share their perspectives from personal and professional experiences to support advocacy, inclusion, accessibility, and the effectiveness of EMPOWER VI activities and materials. Board members reside in multiple states and occupy a variety of professions, contributing a diverse range of perspectives.

Empowering young minds to reach their full potential, regardless of their circumstances, is a cornerstone of a just and equitable society. This project is not just about creating online courses; it's about opening doors to endless possibilities for youth who are blind in rural communities and leveling the educational playing field. I am honored to be a part of this transformative work.

– Jane Flower, Youth Outreach Specialist, Guide Dogs for the Blind

### **Mentorship**

Mentoring from adults with visual impairment can provide a supportive bridge for transition-aged youth who are B/LV, helping them build confidence, skills, and a path toward a successful future. With guidance and support from

EMPOWER VI staff, adult (age 18+) B/LV mentors are matched one-to-one with youth (juniors or seniors in high school) who are B/LV. Mentors draw upon their lived experience and expertise to encourage mentees in navigating their postsecondary goals. During the program, Mentors and Mentees meet monthly over Microsoft Teams from August to May.

Early data from our pilot year indicate that all Mentees were able to work toward their goals. For example, two mentees—both high school seniors—set a goal of attending college. Both applied and were accepted to the college of their choice and took additional steps to set themselves up for success (e.g., applying for Vocational Rehabilitation (VR) services, learning to live in an apartment). Other Mentees had the goal of learning more about the transition process. One, for instance, wanted to understand Pre-Employment Transition Services (Pre-ETS). After discussing Pre-ETS with her Mentor, she approached VR and successfully arranged Pre-ETS services in her school. Recruitment for the Mentorship program occurs every spring and early summer. If you are interested in joining the program next year or know a student who would qualify and might benefit from being matched with an adult mentor, make sure to visit the mentorship page on our website to learn more ([www.empowervi.org/mentorship](http://www.empowervi.org/mentorship)).

### **Communities of Practice (CoPs)**

The EMPOWER VI CoPs bring together families and professionals who support transition-aged youth who are B/LV to learn, share, and grow together. Open to participants nationwide, with a focus on those in rural communities, these virtual sessions use the ECHO model to foster collaboration and problem-solving. Over a series of four biweekly meetings, participants engage with content experts, exchange strategies, and build lasting peer connections. The CoPs provide a space to explore research-informed practices, gain practical resources, and strengthen confidence in supporting the transition to adulthood for youth who are B/LV.

### **Conclusion**

EMPOWER VI is more than a grant-funded project—it is a movement to ensure that youth who are B/LV, especially those in rural areas, are seen, supported, and equipped for successful adult lives. By combining accessible virtual tools, community input, and a commitment to equity, EMPOWER VI is already making an impact on students, families, and professionals across the country. As we continue this work through 2028, we invite educators, families, and all individuals who are B/LV to explore our resources, join our communities, and contribute to a future where all young people with visual impairments can thrive.

## References

Turnbull, H. R., Turnbull, A. P., Wehmeyer, M. L., & Park, J. (2003). A quality of life framework for special education outcomes. *Remedial and Special Education, 24*(2), 67-74. <https://doi.org/10.1177/07419325030240020201>



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# From Mission to Vision: A Teacher's Journey to Visual Disabilities Education

**Saurym Quezada**

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As a young college graduate with a Christian Ministry degree, my interest in disabilities spurred out of a commitment to serve the Lord Jesus Christ. Little did I know then that the gentle thoughts about pursuing a master's in the field that came into my mind one evening while sitting by my piano would lead to the unfolding of the great vision that fuels my missionary education journey. In 2014, I obtained a Florida K-6th teaching eligibility and became a 3rd-grade teacher at a private school with the goal of gaining some classroom experience to qualify for a

master's degree in special education. When I started my program, I realized the best way to become an effective educator was to step down from being a classroom teacher so I could devote adequate time to learning from my coursework and practicum experience. However, I still needed a job and concluded the best option was taking on a paraprofessional vacancy for a specialized autism spectrum disorder (ASD) Pre-K classroom at a public elementary school. This decision steered the course of my journey toward the visual disabilities field.

As a paraprofessional, I met Leo (pseudonym), a triplet with profound autism and blindness. Leo was five years old and had just recently moved to Florida with his family. As a result, he did not know the language and felt anxious in unknown environments with adults he also did not know. He was very sensitive to textures, voices, and touch. He was nonverbal and expressed his frustration tactilely by pinching or scratching. He had a hard time sleeping (so no naptime) and wasn't toilet-trained. Leo did not enjoy his clothing or a dirty diaper, so he constantly removed all of it. He had an early childhood classroom teacher who was endorsed to work with children with ASD, who knew some strategies to support students with visual impairments (VI). But her voice was a challenge for him. Leo also had a great teacher of students with VI (TSVI) who came to the school a few times a week to support him with orientation and mobility skills and consult with the classroom teacher. These two professionals exposed me to practices and

services for students with VI; unfortunately, neither of them had discovered effective ways to properly support the needs of a student with autism and VI (ASD+VI). The experience became a seed of curiosity, soon to be watered by forthcoming opportunities through a community agency.

Fast forward to the summer of 2018. I am a soon-to-be master's degree graduate, preparing to join a district-designated ASD specialized school in the fall when a special invitation comes my way on Sunday morning. A parent with a child participating in my church's Children's Ministry approaches me to share about his job at a local agency for the blind to relate hiring opportunities for their youth summer programs. As of that moment, I had spent every summer engaged in either disability ministry internships or nonprofit disability summer programs through national and local organizations, respectively. So, the opportunity sounded appropriate and timely, as I had not settled on my activities for that summer. A few weeks later, I was drafted into the Lighthouse of Broward (Lighthouse) as a summer instructor, where I encountered a few more Leos, but in a completely different way.

At the Lighthouse, I met a series of students with complex and multiple disabilities. Some were verbal while others were nonverbal. Some were totally blind, while others had functional vision or light sensitivity. Some were highly independent, and others required a bit more support. Some were fairly typical,

while others presented with some rare and unique makeups. Some had amazing talents that others were yet to discover. And all had the benefit of specialized professionals who knew exactly how to work with them to bring out their absolute potential. I wondered, ‘how did these students get here!?’

These students demonstrated skills Leo lacked. Not all were Leos, but those who were had been equipped far beyond what I had conceived for Leo. Some were pianists and a brailleist. Fearless navigators, advocates. Younger versions were working on these or similar skills, and they were becoming all that they could be, because they had access to professionals and services that “get” them. As I returned since summer after summer, my awe never changed. I firmly believed I had found a new kind of educator. No, their focus wasn’t math or reading for the sake of testing or prescribed state standards, but life skills. Skills I quickly realized were life and breath for these individuals who were growing up and transitioning to adulthood. I served as both a kids’ and transition program instructor and got to see time and again seamless collaboration, leadership, strategies, problem-solving, consistency, and most of all, high expectations for both young and older participants in the program. I was privileged to be brought in as the agency’s first Job Placement Specialist (developer and coach) under a grant award. I got to dream up and implement a vision for the agency’s work experience program with endless support from my supervisor to the benefit of our adult clients and transition

program youth. I thought, what would happen if all these opportunities (from cradle to grave), trust-driven support, and ‘your-very-best’ approach were as present in the classroom as it was through this community agency?

My fear of being only qualified through lived experiences held me back from certifying and joining this team of professionals as a TSVI at the time, but it did not stop me from wanting to see these practices multiply. In the summer of 2022, after having completed a year in a doctoral program at my alma mater (Florida Atlantic University; FAU), I made the decision to transfer to Florida State University (FSU) to finally learn from the experts driving the field of visual disabilities in Florida. Dr. Jenny Root took time out of her busy schedule that summer to meet with me after the former program coordinator (Dr. Eileen Bischof) made the connection. Dr. Root heard my passion for both fields (special education and visual disabilities) and my desire to make a difference in the lives of students with dual, complex and/or multiple sensory-based disabilities. She tailored my program, placed me under a careful co-mentorship led by herself (Dr. Root) and Dr. Michael Tuttle, and the two have been shaping this vision into a reality since.

While my doctoral training at FSU has been driven by rigorous opportunities to engage in research, service, and teaching, my research contributions to the field started early on at FAU as a part of Dr. Kelly B. Kearney’s research lab. I was invited to join this work after expressing an interest in knowing how to apply the

outcomes of their research to the adults and youth I worked with as a job coach at the Lighthouse. The late Dr. Michael Brady was so enthusiastic about the idea and made the connection. I was brought in as the interventionist to test a research-based intervention teaching how to determine appropriate job fit to young adults with VI and intellectual or developmental disability (Kearney et al., 2023). This first exposure to research made me aware of the significant impact one study could have in shaping the lives of students in my community, while also making meaningful contributions to the field at large. The experience also reshaped my understanding of a missionary calling, as I realized that making a difference as a Christian educator didn't necessarily mean leaving all behind to have the world be my classroom. I could serve "the one" in my own backyard and make ripples in the ocean at the same time.

Transferring to FSU meant doing more of this work while building a solid foundation of visual disabilities education and research. At FSU, I've learned the ins and outs of research through hands-on experiences by being a part of Dr. Root's General Curriculum Access (GCA) lab and a research assistant to Dr. Tuttle. We've worked on adaptations and modifications to make math interventions accessible to students with VI and extensive support needs, assessed the use of assistive technology for students with VI nationwide, and investigated standards and teaching practices for students in K-12<sup>th</sup> who have VI and additional

disabilities. Our most recent work has focused on a review of augmentative and alternative communication interventions for students with VI, and a qualitative exploration of determinants to being a TSVI with VI in education. Both of these works are currently under review for publication.

As a Graduate Teaching Associate to Dr. Tuttle, I've been mentored in the instruction of courses for our online master's degree program and in-person undergraduate program, including Supporting Literacy Skill Acquisition in Students with VI for graduate students, and Literary Braille and Teaching Reading and Writing to Students with VI courses for undergraduate students. In terms of service, I was privileged to be selected as a 2024 summer intern for the Research to Practice (RTP) Division of the U.S. Department of Education, Office of Special Education Programs (OSEP), where I learned from and contributed to policy and state projects focused on supporting students with VI and deafblindness nationally. Our team got to present this work to the entire department of education, raising awareness and educating our state's officials on field-related needs. Most recently, I was elected as the Council of Exceptional Children (CEC) Division of Visual Impairment and DeafBlindness (DVIDB) board of directors' student ambassador for 2025. This service further avails an opportunity to advocate for students' needs by contributing to position papers and events like conferences, which support the dissemination of research supporting practice.

I've been a student advisor for our Council of Exceptional Children University Chapter and given countless opportunities to pour into our rising teachers, conceptualize and execute research projects, disseminate, network, build specialized expertise through clinical and methods training, write grants, and aim for those high expectations. My mentors noticed a level of professionalism, applied teaching, scientific ability, and care for the field, and pushed for my very best. As advisors, Dr. Root and Dr. Tuttle have aimed at developing my professional identity, research skills, and service to the field as a future education scientist through guided apprenticeship activities that strategically equip me to be an influential scholar and researcher, as is characteristic of their own reputation and endeavor.

As a PhD scholar graduating in the Spring of 2026, I aspire to enter academia as a tenure-track professor at a research-intensive university to become my role models. It is my goal to turn their investment into viable solutions for both fields to the benefit of students colliding these professions. I aim to work with the 65% of students with VI who have additional and multiple disabilities and may not be receiving adequate services through our education system (Hatton et al., 2013; Gaber & Huebner, 2017; Schles, 2021). I aim to investigate how vision is impacted in individuals with developmental disabilities across the lifespan, beginning with ASD+VI (my first experience, inspiration, and continued draw back to the vision

field year after year). ASD+VI is a complex and controversial diagnosis that has been debated and studied for more than a century (Cass, 1998), yet there remains a lack of consensus on best practices at the clinical and educational level for disability-specific services (Pili et al., 2021). Consequently, children are either delayed in being diagnosed and/or missed altogether, putting them at risk of missing the services needed to lead flourishing lives.

My current research aims to explore the processes of diagnosis, assessment, and service to determine facilitators and barriers to a timely diagnosis of ASD+VI and subsequent services. I've learned a lot by being in the presence of professionals in the field of VI who know how to support students with VI. However, not everyone enjoys this privilege. The field of visual disabilities rightly earns its name as a "hidden gem." After all, it's a valued resource few get to discover because it demands engagement in the field. The critical shortage in the field (Howley & Howley, 2021; Savaiano et al., 2022; Schles et al., 2025) makes it even harder to enjoy the benefits of working in collaboration with these professionals to jointly devise solutions to effective services. However, as special education teachers, we share a common purpose for our call to the field, to serve our students in leading flourishing lives. Whether it is VI only or VI+ (you fill in the blank), they need qualified teachers, teachers who get their needs. It is my goal to develop the next generation of educators through research-based ASD+VI

transdisciplinary collaborative practices that effectively support both teacher and student.

## References

- Cass, H. (1998). Visual impairment and autism: Current questions and future research. *Autism*, 2(2), 117–138.
- Gaber, M. & Huebner, K. M. (2017). Visual impairment: Terminology, demographics, society. In Holbrook, M. C., McCarthy, T., & Kamei-Hannan, C. (Eds.), *Foundations of education: History and theory of teaching children and youths with visual impairments* (3rd ed., pp. 50–72). New York, NY: AFB Press.
- Hatton, D. D., Ivy, S. E., & Boyer, C. (2013). Severe visual impairments in infants and toddlers in the United States. *Journal of Visual Impairment & Blindness*, 107(5), 325–336. <https://doi.org/10.1177/0145482X1310700502>
- Howley, C. B., & Howley, A. (2021). Supply and demand for education personnel serving students with low incidence sensory disabilities in Ohio: A report to the Ohio deans compact. *Online Submission*.  
<https://files.eric.ed.gov/fulltext/ED614743.pdf>
- Kearney, K. B., Torres, A., & Quezada, S. (2023). Teaching young adults with visual impairment and intellectual/developmental disability how to determine appropriate job fit. *Journal of Vocational Rehabilitation*, 59(2), 207–220.

- Pili, R., Zolo, B., Farris, P., Penna, V., Valinotti, S., Carrogu, G. P., Gaviano, L., Berti, R., Pili, L., & Petretto, D. R. (2021). Autism and visual impairment: A first approach to a complex relationship. *Clinical Practice and Epidemiology in Mental Health: CP & EMH*, 17, 212–216.  
<https://doi.org/10.2174/1745017902117010212>
- Savaiano, M. E., Shanahan Bazis, P., Hebert, M., Rodgers, D. B., Bosilevac, M., Leutzinger, B., & Thompson, M. (2022). Estimating the number of teachers of students with visual impairments in the United States. *Journal of Visual Impairment & Blindness*, 116(5), 724–728. <https://doi.org/mzc9>
- Schles, R. A. (2021). Population data for students with visual impairments in the United States. *Journal of Visual Impairment & Blindness*, 115(3), 177–189.  
<https://doi.org/10.1177/0145482X211016124>
- Schles, R. A., Low, J., & Johanns, G. (2025). Tennessee 2022: Shortages and future needs for TVIs and O&M specialists. *Rural Special Education Quarterly*, 44(1), 14–25. <https://doi.org/10.1177/87568705251318371>



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# O&M Strategies and Partnerships in the Far North

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What do we do for orientation and mobility (O&M) lessons in Anchorage, AK when it is 20 degrees out and the distinctions between curbs or the side of the road are obliterated by a sheet of ice due to recent freezing rain? When the school playground becomes a hockey rink and all the kids are playing ‘penguins’ and belly sliding around? When the snow builds up and the sidewalks disappear (if there was one in the first place) and don’t re-appear until April or May? How do we teach safe, efficient and effective travel when the mobility cane can no longer distinguish between safety or danger zones? As O&M instructors teaching in a location that has what many would consider unfavorable or inaccessible winter travel conditions, we want our students to be able to engage with their natural home environments and be independent travelers year-round, not just during the six months when walking paths are not natural slip n’ slides. In order to do this, we

have been building resources within our school district and fostering partnerships with federal, state and city agencies, and nonprofit organizations to promote successful travel skills.

Compiling physical resources in the far north includes filling our vehicle trunks with winter ice grippers, outdoor clothing and different cane tips. Ice grippers seem like an easy solution to icy walking conditions, but knowing when to use them, how to put them on, cajoling reluctant teenagers into actually putting them on, and learning to trust them while walking becomes quite the process. Our school district has purchased a variety of styles as cleats seem to be as individualized and consumable as cane tips. Cleats with straps that secure them on the shoe seem like a no-brainer for the student with no vision who may walk out of it and not be able to find it again, but that extra strap for kiddos with fine motor challenges can become a barrier. Some styles are much harder to pull on and require strength and agility. Can a student balance solely on one foot, lean against something and lift a foot up or do they need to sit down to don them? How much of a spike on the bottom will make a student feel safe, or will the student feel the spike through the bottom of their shoe/boot and refuse to wear the cleats again? Once the grippers are secured on the feet, then learning to trust them and walk with them is the next step. There was one point this past winter when a student who had successfully walked a multi-block residential route in the fall became frozen with

fear when the inside and outside shorelines of the sidewalk and curb had melded into an indistinguishable solid sheet of ice. He instantly lost all confidence in his ability to walk safely. As we stood on the sidewalk and listened to a few other people who also braved the elements, I pointed out the ‘crunch, crunch’ sounds of others wearing ice grippers and managing the challenging terrain. He then made it a half-block.

It seems that teens are teens no matter what part of the country one lives in, and standard winter outerwear is a hoodie and sneakers, regardless of outdoor temperature or weather conditions. Since traveling in winter is our reality for close to six months, we try to be outdoors as much as possible during this time frame. We have found, however, that we often need to provide proper outer layers for our students for those outdoor lessons to be successful. Kids in Alaska go outside for recess through elementary school, so the younger students tend to have ‘the gear’. The minute the students hit middle school and recess ceases to exist, so does dressing for the weather. If we want to have lessons where the students aren’t standing and shivering and can actually think and process what they are hearing, seeing and feeling, we have found it beneficial to have our cars be rolling gear closets. We have also become friends with the school nurses who have extra outdoor clothing, collected from colleagues and outgrown or no longer used layers from spouses/children.

Cane tips are another resource that we have been cultivating over the years. We have successfully used the Dakota Disk Cane tip on hikes up mountain trails, on sand and rocky beaches as well as on the snow and ice. The tip doesn't get stuck in snow and readily picks up on the presence of ice through the produced sounds and vibrations. Some older students prefer to switch their tips 'on demand' depending on the terrain and length of time needed, whereas younger students tend to keep a separate 'recess cane' hanging in their cubby during the winter for outdoor use. We have a few older students who participate in an adult community transition program who carry in their backpack an extra cane with the Dakota Disk tip attached. They use the cane with the Dakota Disk navigating to and while on public transportation but then switch to their everyday cane when they arrive at their indoor community location. Carrying two canes eliminates having to switch tips mid-trip and/or needing to fish that lost elastic loop out of the cane shaft.

Establishing partnerships with federal, state, local agencies and nonprofit organizations has facilitated some unique experiences for our students, taught new skills, put learned skills into real-life practice and fostered connections with indigenous cultures and lands. During small group lessons our older students have met with our city public transportation travel trainer, the city traffic engineer and Mayor on White Cane Day, toured the Lions Club Industries employment program on Joint Base Elmendorf-Richardson, worked with staff at the Alaska Center for

the Blind and Visually Impaired and the Department of Vocational Rehabilitation, conversed with the Anchorage Police Department School Resource Officers about safety and disability disclosure, practiced balance, falling and self-defense skills with Alaska Jundokan (a non-profit, volunteer martial arts school), experienced blind soccer with the non-profit Challenge AK, hiked and snowshoed with support from the Bureau of Land Management and learned to ice-fish in the winter in partnership with the National Park Service, Bureau of Land Management and the Anchorage Parks Foundation. Our ice fishing experience provided the capstone winter travel experience. Everyone used ice cleats to walk confidently on the ice and their canes with Dakota Disk tips to detect cracks in the ice and navigate around either open or previously opened holes in the ice. Proper outdoor clothing facilitated being out on the ice for several hours. The caught fish were taken home by two students who are both Alaska Native and then shared with a grandmother and school Yu'pik teacher who both prepared the fish using traditional methods.

Another unique opportunity was meeting a local celebrity in person, Star the Reindeer. Our students got to feed Star apples from their open outstretched palms and feel the thickness of her hollow fur, all while utilizing upper protective technique (a fantastic natural learning opportunity to stay safe from those swinging antlers as Star went from student to student looking for apples). Our younger students in small groups have also toured the Anchorage Fire Department,

participated in inclusive story times with the public Library, utilized the Special Olympics training facility and gardened with the Anchorage Parks and Recreation.

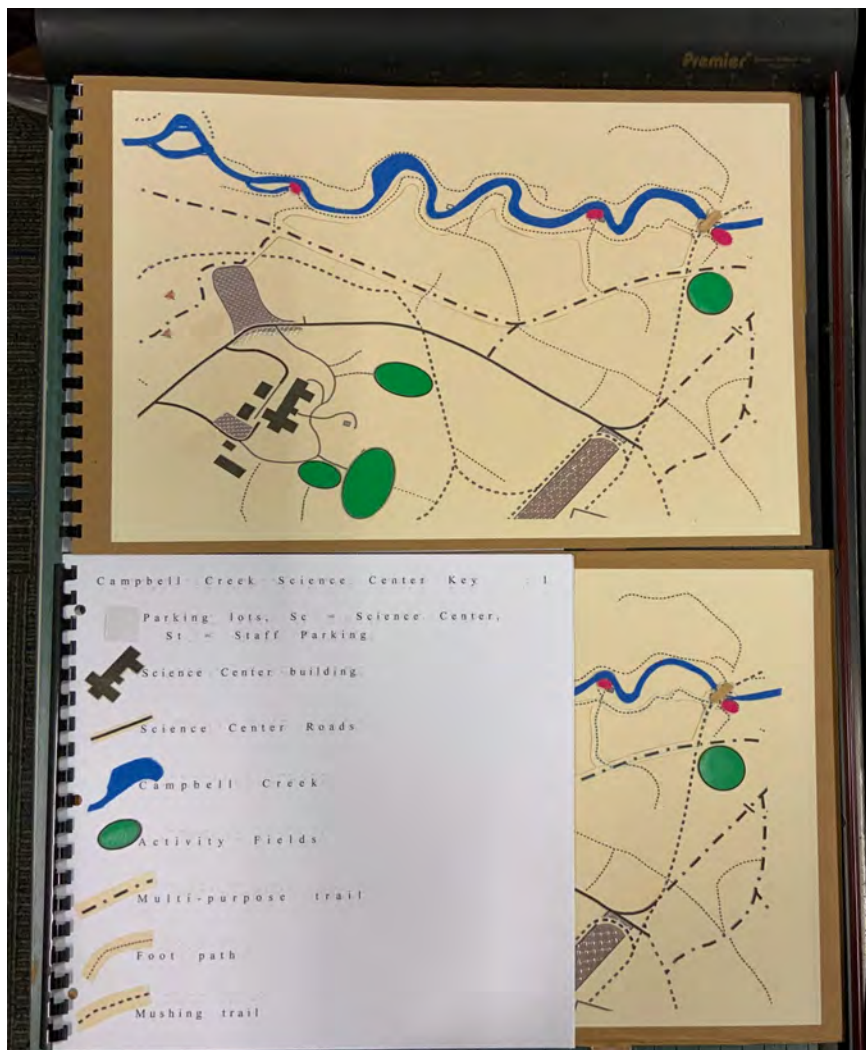
We have learned over the last few years that our jobs as O&M instructors are very conspicuous which helps to build these connections. Several opportunities have organically presented themselves just by being in the right place at the right time, having the mobility cane out and visible, and being willing to take a second to chat with people. Other relationships started as a cold call or email, and for the most part have been successful in setting up opportunities for our students. The federal, state and city agencies have always responded to our outreach efforts and supported learning experiences, whether it be on a city bus, in the woods, at federally managed facilities or out on frozen lakes.

By-products of our collaborations with agency staff have been impromptu staff training on strategies to use with individuals who are visually impaired or deafblind and wider exposure to what accessible materials look like and how to use them. We met with agency staff ahead of time to discuss accommodations and modifications. Our school district Accessible Instructional Materials center staff produced simplified, large print and tactile maps of a BLM trail, city bus route map, National Park Junior Ranger program booklets, and summer reading logs for the public library to support our programs. We are always asked by the agency

staff how more of their materials can be made accessible, to which we unfortunately do not have a ready answer. We always leave extra copies of our adapted materials for possible use with others.

**Figure 1**

*Adapted Tactile Map of Specific Features and Trails*



Our students need to embrace the lands and environments in which they live and learn to travel safely and efficiently on them. Partnerships and support from all types of agencies have been crucial in providing the wide variety of experiences our students need. Beyond what our students have gained, the reciprocal impact on the partner organizations has been a powerful outcome. We hope that our collaborations can continue in future years to ensure our students learn how to navigate urban and rural environments in order to be successful travelers here in Alaska.

The following are some potential organizations to partner with for orientation and mobility experiences:

- National Park Service: connecting with Education Specialist for local programming and practicing travel skills in natural environments
- Bureau of Land Management: connecting with Educational Specialist for local programming and practicing travel skills in natural environments
- Local museums and/or cultural organizations: e.g. Alaska Native Heritage Center, Anchorage Museum
- Community Transit Travel Training Programs: touring empty city bus, first experiences riding a city bus, learning about independent travel
- Public Library: inclusive story time, tour of library, and library services
- Municipal Parks and Recreation Department/Park Foundations: gardening programs, inclusive city programs, accessing city trails, recreation centers and playgrounds

- Local Police Department: discussion for teens regarding disability awareness and disclosure
- Local Fire Department: hands-on tour for elementary age students (including sitting and being pushed on a stretcher, experiencing the sound and feel of fireman in turnout gear)
- Local Non-profit organizations: adaptive sports, martial arts (balance, self-defense)
- Lions Club Industries: job exploration
- State Center/Commission for the Blind: connecting students with Department of Vocational Rehabilitation, practice Independent Living Skills
- Local University/College: Disability Support Services, TRIO Programs
- Local outdoor retailer: borrow outdoor gear (e.g. snowshoes and trekking poles)

Both Ashli and I transitioned to Orientation and Mobility after having taught in either classroom and/or itinerant settings for many years and were both recipients of federal grant funding addressing the critical shortage of O&M specialists through Portland State University's O&M certificate program. The lure of having 'the world' be our classroom and experiencing the growth of student confidence and skill sets related to travel skills here in Alaska has been intoxicating and incredibly rewarding. We are passionate about developing competent travelers across all environments, beginning in preschool and extending up to young adulthood. Anchorage offers a wide variety of travel scenarios, ranging from rural, spartan trails to urban complex intersection crossings. If you

have a sense of adventure, we invite you to look into joining our dynamic team.

The Anchorage School District has an opening for a TSVI with preference for either dual certification TSVI/O&M or willingness to pursue O&M certification.

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# A Vision Beyond Sight: The Legacy and Promise of the Alabama School for the Blind

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Alabama Institute for Deaf and Blind

In the heart of Talladega, Alabama, nestled among the historic buildings and Southern charm, stands a school that has, for over 150 years, changed the course of countless lives: the Alabama School for the Blind (ASB). More than a place of learning, ASB is a community, a haven, and a beacon of possibility for students who are Blind or visually impaired. With a rich history, an expansive array of academic and vocational programs, and a thriving extracurricular scene, ASB represents the pinnacle of educational commitment to inclusivity and excellence. Its impact is further strengthened by being part of the Alabama Institute for Deaf and Blind (AIDB), where a statewide network of regional centers and a full continuum of services support individuals who are Blind, Deaf, and DeafBlind, from infancy through every stage of life.

ASB is one of the many jewels within AIDB. Our staff strives to provide a high-quality, accessible educational environment in order to help each student reach their maximum potential. At AIDB, our highly qualified staff in Blind or visually impaired education remove the barriers to direct instruction and meet our students where they are, so they can elevate them. The ASB staff helps students identify and evaluate obstacles in their lives to implement strategies to overcome them.

- Dennis Gilliam, President, AIDB

### **Founding a Future: A History Rooted in Purpose**

The Alabama School for the Blind was established in 1867, during a time of reconstruction and rebuilding across the South. It was founded as a companion to the Alabama School for the Deaf (ASD), which had been established in 1858 by Dr. Joseph Henry Johnson. The creation of ASB was inspired by Talladega native Reuben Asbury, a member of the ASD staff whose traumatic imprisonment in darkness during the Civil War led him to dedicate his life to educating children who are Blind. In an era when children with disabilities were often overlooked by traditional education systems, ASB emerged as a groundbreaking school, offering quality education and vocational training to students who were Blind or visually impaired.

The efforts of Johnson and Asbury were bolstered by state support, and the school's early years were characterized by passionate advocacy and slow but steady growth. Originally housed in modest facilities, ASB gradually expanded to meet the needs of its growing student population. Over the decades, ASB evolved into a comprehensive educational institution, reflecting broader shifts in attitudes toward disability and inclusion. Today, the school, as part of AIDB, continues to champion the rights and potential of individuals with sensory differences throughout the state of Alabama and beyond.

### **Academics Tailored for Success**

What sets ASB apart is not just its mission, but the way its mission is carried out through innovative, customized education and an expanded core curriculum. The academic program at ASB mirrors the Alabama State Department of Education standards. Core subjects like math, science, English, and social studies are taught alongside braille literacy, orientation and mobility training, and assistive/access technology skills.

The school also offers instruction in the use of screen readers, refreshable braille displays, and other adaptive technologies that empower students to access digital content and prepare for future careers. Teachers at ASB are specially trained in visual impairment education and work closely with each student to develop

Individualized Education Programs that address their unique strengths and areas of growth.

**Figure 1**



*Note.* Full resolution photo shared individually by Champ Creative.

Education at ASB does not stop with the core subject classroom setting; better yet, ASB makes it a priority to extend education into every aspect of our students' lives. Through limitless education, students have the opportunity to experience a variety of real-world, hands-on learning opportunities, propelling ASB to a level above the rest.

- Andy Keith, Chief Education Programs Officer, AIDB

Beyond academics, ASB emphasizes career and college readiness. The school provides a robust career technical education program, including topics such as business education and technology, that is further expanded through internships, work-study opportunities, and partnerships with other AIDB units and local businesses. With these opportunities, students gain practical experience that equips

them for life beyond graduation. The success of this approach is evident in the Class of 2025, with 18 remarkable students who earned more than \$273,000 in scholarships, a powerful testament to their talent, determination, and the high expectations that define ASB.

### **Arts, Athletics, and Advocacy: The ASB Experience**

At ASB, education extends well beyond the classroom. Believing that well-rounded development includes the arts, athletics, and leadership, ASB has cultivated a dynamic extracurricular culture. Music plays a central role in campus life, with students taking part in choir, band, and individual music lessons. The ASB Band, known for its precision and school spirit, recently made school history by hosting its first band camp and marching in a parade for the first time. Transitioning from riding on a trailer to marching on foot, a long-held goal of the students, was a proud moment made possible through their determination and preparation, with sighted guides serving as support. Since taking their first steps into the ASB history books, the band has marched in regional parades and represented the Alabama Lions Clubs in the Lions Club International Parade of Nations in Boston, MA, in 2023, and Orlando, FL, in 2025.

## Figure 2

### *Band*



*Note.* Full resolution photo shared individually by Bob Crisp.

The school also offers programs in drama, art, and creative writing, providing students with outlets for self-expression and confidence-building. These opportunities are not only enriching but are also instrumental in helping students develop communication and social skills.

ASB's athletic program includes goalball, track and field, wrestling, and cheerleading. These activities are adapted to ensure accessibility while promoting physical health, teamwork, and resilience. Students often compete in regional and national events, gaining recognition and pride in their achievements.

Wrestling, in particular, has become a powerhouse sport at ASB.

Wrestling is a mainstay of our school's rich history and a testament to the resilience and determination of our students. Since 1961, this program has

not only fostered athletic excellence but also instilled lifelong values like humility, sportsmanship, and teamwork. With each victory, our wrestlers continue to prove that success is built on perseverance and the courage to rise to any challenge.

- Alan Nunn, Principal, ASB

The school boasts 37 Alabama High School Athletic Association state wrestling titles, competing and winning against sighted schools, as well as a proud tradition of dominance in South Central Association of Schools for the Blind wrestling competitions, boasting a 21-year winning streak. This legacy speaks not only to the skill of ASB athletes but also to the strength of the school's coaching and culture of high expectations.

"You never forget the feeling of the referee putting your hand above your head and clenching that title," said ASB's first state champion, Ronald Garrett. Garrett began his wrestling career as a junior, and that year, he advanced to the final round of the State Wrestling Championship before ultimately succumbing to defeat. As a senior, Garrett returned to claim his title.

"Personally, wrestling at ASB changed my life," added Garrett. After graduation, Garrett continued his education at Auburn University on an athletic scholarship and wrestled as a freshman. He would return to his alma mater in 1965 when Principal, B. Q. Scruggs, hired Garrett as a teacher. Throughout his tenure at ASB, Garrett served as Wrestling Coach for 14 years and as Principal for 15 years.

Wrestling is what allows ASB to compete. Although we've had many team victories, it was a second-place finish that meant the most to me. We participated in a tournament in the Auburn-Opelika area, where we faced teams from South Alabama instead of our usual East Alabama competitors. We finished second to a team that later won the State Championship. At the end of the tournament, one of the opposing coaches said to me, 'I thought these Blind wrestlers would be in the way, but your team defeated four of my best wrestlers.' As a coach, that moment was incredibly meaningful to me.

- Ronald Garrett, ASB's first state champion

Leadership development is another key pillar of the ASB experience.

Students participate in student government, peer mentoring, and advocacy training, learning how to be effective self-advocates and community leaders. These experiences prepare them not only for personal success but also to be voices for accessibility and equity in broader society.

### **Campus Life and Community**

Living on the ASB campus offers students a unique blend of independence and support. The residential program ensures that students from across Alabama can access the school's resources regardless of geographic location. Dormitory life is structured yet nurturing, with residential instructors providing guidance and support while fostering independence. In addition to academic learning, students benefit from instruction in the Expanded Core Curriculum, which addresses

essential areas beyond academics, such as social interaction skills, independent living, self-determination, and recreation and leisure. These skills are woven into daily life on campus, helping students build the confidence and competencies they need to thrive both in and out of the classroom.

For high school juniors and seniors, independent living dorms on campus offer a mix of community-style living as well as fully-independent individual apartments, featuring a kitchen, laundry room, sitting room, and bedroom designed to empower students with a true hands-on experience as they plan, budget, shop, and cook their own meals and take care of the necessities of daily living. “I’ve learned how to fully embrace my independence by practicing daily living skills such as living in an apartment setting,” said Breana Gardner-Braxton, ASB Class of 2025.

The sense of community at ASB is palpable. Students, faculty, and staff form strong bonds, creating a family-like atmosphere that is both comforting and empowering. Alumni often speak of ASB not just as the place where they learned, but as the place where they first truly felt seen and valued.

### **Legacy and Looking Ahead**

ASB is more than a historical institution; it is a living legacy, constantly evolving to meet the changing needs of its students. In recent years, the school has embraced cutting-edge technologies and educational approaches, ensuring that

students are not only keeping pace with their peers nationwide but also setting benchmarks of their own.

Looking forward, ASB continues to expand its programming and partnerships. Initiatives in STEM education and entrepreneurship are being integrated into the curriculum, preparing students for a dynamic and rapidly changing world. Collaborations with universities, advocacy organizations, and tech innovators are opening new doors for exploration and empowerment.

### **Figure 3**

#### *Girl in Science Lab*



*Note.* Full resolution photo shared individually by Champ Creative.

### **Conclusion: A Light That Leads the Way**

ASB stands as a testament to what is possible when vision meets action. From its humble beginnings in 1867 to its current role as a leader in specialized education, ASB has always been guided by a simple yet profound belief: Blindness is not a barrier to excellence.

Through its unique programs, supportive community, and unwavering commitment to its students, ASB continues to shape lives, build futures, and prove that with the right support, every child can shine. In the words of one graduate, “At ASB, I didn't just learn to read braille or use a cane, I learned that I could do anything.”

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# Agriculture Education for Students with Visual Impairments: Cultivating Excellence and Exceeding Expectations

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I [first author] grew up in a very small town in rural Ohio. I was always a member of 4-H and many of my friends were in the Future Farmers of America program. Both organizations provide opportunities to youth to engage in agriculture education along with many other projects in science, technology, engineering, home economics, communication, leadership and so much more. My own daughters are now in the program, and I have been working with my local 4-H educators to help with making their programs more accessible for those with disabilities. However, with my love of 4-H and my passion for making science accessible for students with visual impairments, I knew that I needed to learn about accessible agriculture education. I knew agriculture programs are great for students, but how do we bring these programs to students with visual impairments? What do we need to keep in mind when working with them?

A search online and in our libraries found ONE article, and it was not even written in the US. I knew we had to do better. I started reaching out to the field and asking about agriculture education programs at specialized schools for the blind. Many people had not heard of such a thing. Then I ran into a friend, Dan Kelly, at the Ohio American Council for the Blind annual conference. He told me about an amazing program in Alabama where students were engaged in an agriculture program.

Fast forward, I was able to meet Kalie Mitchell [second author], a 10<sup>th</sup> grade physical science teacher and agriscience teacher for the Alabama School for the Blind (ASB) which is part of the Alabama Institute for the Deaf and Blind (AIDB). Ms. Mitchell is also a 4-H volunteer and runs 4-H club meetings at the school so that her students can participate in projects and competitions along with their peers. Her students breed, raise, and show bantam chickens. They are involved in the process from hatch to show. In fact, one of the chickens shown from the school received “Champion” and “Reserve Champion”, while another received “Fourth Best in Show”. In addition, the students tend to crops ranging from tomatoes to corn. Other projects that the students are involved in include baking, graphic design, photography, public speaking, gardening, and woodworking.

## Figure 1

### *Preparing for an Exhibition*



## Figure 2

### *Student with Silkie*



*Note.* The same student is standing in front of her cage with her silkie. Her chicken won reserve of breed at one of the exhibitions.

After learning more about the students' projects, I wanted to know more about Ms. Mitchell and her program. Ms. Mitchell had an agriculture background working with chickens, goats, and horses. She was a middle school science teacher when her friend, Ms. Rachel Chastain, at the Helen Keller School made her aware of a retirement happening in the AG program at ASB. Ms. Chastain thought of Ms. Mitchell and encouraged her to apply. Ms. Mitchell commented that she had no idea of what it would be like teaching agriculture to students with visual impairments and was intimidated at first but was excited to have the opportunity to make a change in the lives of those with visual impairments. With a willing attitude toward learning and her passion for agriculture, Ms. Mitchell became the next agriculture teacher at ASB. She had to take additional certification exams, get an additional master's degree in teaching students with visual impairments, and became a 4-H volunteer, all in order to ensure that she was properly credentialed and ready to teach at ASB. She was blessed with supportive administrators and an experienced teacher's aide, Judy Barber, to help her transition to the new position. She says she could not have done everything she has done without the support of her admins, aide, coworkers, and fellow agriscience teachers at the other AIDB campuses.

At ASB, students are fully immersed in agricultural experiences in both the classroom and a working farm, the Joe Tom Armbruster Agricultural Center, that

they share with faculty and students from other AIDB campuses. Ms. Mitchell said that in both environments, safety is considered at all times. Students must be given an orientation of safety before they begin working in the classroom or the farm. Students are required to sign safety contracts and pass a safety quiz before engaging in the curriculum and activities at the farm. Ms. Mitchell reiterated over and over about the importance of safety when working with students with visual impairments in agriculture educational experiences. She spoke of the need to be aware of hazards. This ranged from leaving garden hoes and rakes out to be stepped on to garden hoses impeding walkways for cane users. Specific hazards include:

- a. Tool Safety – students should be given opportunities to use power tools. They must be given safety goggles to wear and be shown how to handle the tools properly before they can run them on their own. All tools should be labeled with print and braille and have a proper location for storage, that does not change. This way students know where to access and put away their tools upon completion of a project.
- b. Cages – students need to be reminded to close cages of their birds when getting them out to clean the cage or handle the bird. The corners of poultry cages are sharp and can scratch or poke a peer as they walk by. These cages are elevated so a cane will not detect them. Keeping the cage doors closed allows for peers to pass by to access other chickens in the barn.

- c. Elevated Objects - Be mindful of objects that are naturally elevated such as cabinets, stored tractor elements that have sharp blades or teeth at an elevated level. You can try to mark them with bright tape for those with low vision to see but a teacher can also reinforce the protective hand as students move around the barn and farm fields. Ms. Mitchell stresses the importance of teaching students to move with a protective hand near their face when on the farm to shield from all the tools and equipment that could poke or scratch their face.
- d. Animal Hazards – Animals have sharp beaks, claws, can bite and may have horns. When working with the chickens, it may be appropriate to wear rubber gloves when handling them to avoid getting the hands scratched. Also, sighted guide should be used with larger animals so that the students know where the head or possible horns are located on the animal and the proximity to the animal.
- e. Chemical Exposure – fertilizers, herbicides, insecticides and pesticides are all on a farm. These can be toxic. All students should be provided with an overview of the chemicals, how to properly use them and what to do if there is a spill. All chemicals should be labeled in braille and large print. Gloves can also be used to reduce exposure during application.

Ms. Mitchell believes that:

Agricultural programs cover several career tech areas such as plant science, animal science, environmental science, carpentry, plumbing, electrical and automotive engineering, etc. In my opinion, we should strive to make it as hands-on as possible, but not at the expense of safety. (personal communication, January 16, 2024)

While safety is the number one concern, the next is making accommodations for the curriculum. Ms. Mitchel says, “I allow all students to try new tasks, regardless of visual status...” However, she notes that few Ag settings are accommodating so she teaches using direct instruction on how to navigate and work in an agricultural setting. Accommodations for her students include, but are not limited to, safety glasses and goggles that can fit over prescribed lenses, leather gloves for animal handling, rubber gloves for cleaning cages, tactile and high contrast maps of work areas, high contrast equipment, organized supply bins that are labeled in braille and large print, tool storage clearly labeled, and orientation and mobility using self-protective techniques. Assistive technology is also used with braille measuring cups, talking scales, talking calculators and thermometers, talking tape measure, braille and large print textbooks or manuals, PixBlaster® for making tactile images, magnification devices, and refreshable braille or use of an IPAD for taking notes. With all these accommodations in place, students can thrive in an agricultural setting.

An additional accommodation that has been used in crop production is the use of raised beds. This allows the students to stand at the bed to work on weeding and watering instead of bending over and searching for the plants in a field. In addition, Ms. Mitchell uses a black felt liner material in her beds to ensure that students with low vision can have contrast to better see the green plants. While it

may be challenging in the Alabama heat, with some water and love the plants thrive at ASB.

### **Figure 3**

*Raised Garden Beds outside ASB*



*Note.* Black felt grow-bags are used for higher safety and contrast.

With all the recent successes of her students in both livestock and non-livestock projects, I asked Ms. Mitchell about the plans that are in place to promote student inclusion in their 4-H projects and at their various livestock shows. Ms. Mitchell spoke highly of the 4-H agent in her county, Ms. Kim Good, as being an advocate in the 4-H programs the students participate in. Ms. Good speaks with all competition judges and provides materials in large print or braille or voices over the material if needed. However, even with these accommodations, the students

themselves are responsible for completing their projects. In livestock shows they are required to be in control over the animal and still need to perform the same show tasks that their peers perform. For example, in the local chicken shows, the youth are required to prepare and place their animals into their own cage. The difference, a sighted guide is allowed to help the exhibitors locate their cage but cannot help any exhibitor to cage or carry the bird. Ms. Mitchell says she has always felt welcomed by the show committees and they are getting known the more they travel around and show, with many happy faces cheering on her students.

#### **Figure 4**

*Student with a Polish Hen*



*Note.* The student won as a reserve show champion Fall of 2022.

While the accommodations are important, one cannot help but think of all the life lessons being learned by Ms. Mitchell's students. Through her curriculum she is teaching academic skills such as measuring water volume, gathering data, the life cycle of animals, the life cycle of plants, making models to better understand the world around you, and so much more. Then I began to think of the expanded core curriculum. Every area of the expanded core can be touched on almost daily by lessons taught under the guidance of an agricultural curriculum. For example:

- Assistive Technology – students are using their assistive technology to gather data, make observations, and access different information for projects they work on in class
- Career Exploration – students are exploring a number of agricultural careers which can also involve careers in other areas: business, marketing, art, communications, engineering, trades, etc.
- Compensatory Skills – writing down observations and data collected is one way in which these skills are being practiced every day. Students may also use and create tactile models or diagrams.
- Independent Living Skills – while some students take baking and home economic projects through their 4-H organization, the very act of being on the farm and taking care to clean up after the animals, clean messes made and cultivate food for others to eat encompasses this area.
- Orientation and Mobility Skills – navigating the farm and agriculture class is a daily lesson in orientation and mobility and self-protective techniques.

Things get moved or changed when more than one school is accessing the

farm. Therefore, these skills are called upon to help the students safely navigate their environments.

- Recreation and Leisure Skills – some students knit or crochet in Ms. Mitchell’s class and make artistic items for all to enjoy while others gravitate toward plant propagation, aquaponics, caretaking, animals, or baking. Students are exploring activities that they like and are advocating for their interests. They are finding the leisurely activities they enjoy through this class.
- Self Determination – Ms. Mitchell prides herself on having her students advocate for their needs on the farm and in the classroom. She puts the ownership on them to voice what they need for their projects or individualized learning.
- Sensory Efficiency – this skill is practiced each day when students are avoiding hazards. Students are taught to use their senses to help them navigate the farm and hazards that may exist. They are also learning to identify items by touch such as distinguishing a pepper from a squash, a drill from an impact power tool, or a silkie chicken from a polish chicken.
- Social Skills – Students who are competing in 4-H or presenting projects to the class are practicing skills in public speaking. Group projects are used to guide students to think like a team and practice good social skills.

As you can see, there are many benefits to having an agriculture program. Not only are science and math embedded into the curriculum that is taught, but students also have a chance to practice all of the expanded core curriculum areas embedded

into the curriculum. What a powerful program and opportunity for the students at ASB.

## Figure 5

### *Succulents*



Are you sold yet? Do you want to start an agricultural education program for your students or get them engaged in a local 4-H club? I asked Ms. Mitchell what advice she would give to others wanting to establish their own agriculture programs. She said she understood the intimidation of others but to not let fear cause exclusion of any student with visual impairments or blindness. She acknowledged that they can, within reason, do anything other students can do, they may just have to do them a little bit differently or with more direct instruction. Additional time and organization may be needed, but we all could use that in life.

Our students with visual impairments may require a one-on-one guide or sighted student to help with higher risk activities, but we all have needed that guidance in our lives. She stresses the importance of capitalizing on the strengths of the students and their abilities and interests. Have students be self-advocates for their needs and act accordingly. Ms. Mitchell also stressed the importance of using free resources in the community and working collaboratively.

Recommendations for starting an Agriscience program:

- Decide how funding will be sourced. Agriculture programs can get expensive fast.
- Reach out to other Ag teachers and extension staff to build connections and request advice or assistance.
- Begin small and use what you have. Indoor plant systems such as grow carts can teach the same concepts as an outdoor garden. Do not feel pressured to add a greenhouse from the start. Work your way up or focus on smaller projects.
- If you plan to hatch chickens, build/purchase the brooder and coop first and establish a funding plan to feed them before you dive in.
- Do not feel pressured to make everything 100% accessible. Students must also learn how to adapt to real world scenarios so find a balance that works for *your* students. It will be a continuous work in progress for both you and them.

Remember, students with visual impairments CAN participate in agriculture.

So, they might bump into a table and knock over a watering glass or trip over a

hose on the side of the barn. I assure you every farmer has done that. The trick is to react calmly and teach students how to avoid those situations in the future. With all that can go wrong in the world, practicing life skills in a farm setting teaches skills and traits that will be with the student forever!

### **Figure 6**

*Students Work Together to Bottle-Feed a Calf*



Agricultural education and 4-H programs are an amazing way to engage students with visual impairments in programs that support life-long skills and make wonderful long-term memories along the way. Agriculture is a great way to teach

the expanded core curriculum for the visually impaired. It also opens up so many new opportunities for students and gives them experiences that they will likely have nowhere else. Students with visual impairments can fully participate in the programs, with a few minor accommodations along the way. Safety is a bit of a concern, but with planning and proper training, students with visual impairments are no more in danger than their peers. As an alum of a 4-H program, I hope that *all students* get the ability to participate in an agricultural program.

# VIDBE-Q 2026 Convention Issue



The intended purpose of the Spring 2026 convention issue is to provide manuscripts aimed at practitioners about presenter contributions to the CEC 2026 program and work related to the field of visual impairments and deafblindness. This issue will allow those who were unable to attend your session to know more about your work.

## Guidelines:

- 2,000 - 5,000 Words
- Tables and figures should have a text description & title (APA 7th edition)
- Alt text included for images
- References
- APA formatting (7th Edition)
- 12 point, Times New Roman or Arial font
- Author information for title: Name, affiliation, highest degree earned, and email address
- Please identify target audience

Email your manuscript submission  
to [Kathleen.Farrand@asu.edu](mailto:Kathleen.Farrand@asu.edu).

Deadline for submission: April 10, 2026

# From Play to STEM: Childhood Play Experiences of Adults with Visual Impairments Across Four Countries

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## Introduction

Individuals with visual impairments, especially those who rely on tactile perception, are sometimes excluded from Science, Technology, Engineering, and Mathematics (STEM) despite their ability to study all academic subjects alongside their peers (Jessup et al., 2017; Koehler & Wild, 2019). This exclusion increases at the upper secondary level, and the disadvantage becomes more pronounced after graduation from high school, as those adequately educated in STEM are more

likely to achieve vocational stability than those who are not (Okrent & Burke, 2021).

Hands-on learning is an effective approach for teaching STEM content to students with visual impairments (Hilson et al., 2016; Koehler et al., 2018; Rosenblum et al., 2024; Rule et al., 2011). However, students with visual impairments often do not receive the same opportunities for hands-on learning as their nondisabled peers. One contributing factor is that many STEM teachers lack training in providing accommodations and adapting content for learners with visual impairments. While teachers of students with visual impairments understand their students' unique learning needs, they often lack expertise in STEM instruction (Wild et al., 2022). Additionally, adapting highly visual and complex materials used in mathematics and science remains a significant challenge. These systemic barriers limit students' access to STEM learning opportunities.

Beyond these systemic barriers, students with visual impairments may also face challenges related to the skills they themselves must develop. For example, to fully engage with hands-on STEM learning, students must not only be proficient in reading braille and/or print but also develop spatial reasoning skills and systematic scanning techniques to interpret complex graphics (Kamei-Hannan, 2009; Rosenblum & Herzberg, 2015; Smith, 2017). Students must also have a strong conceptual foundation and be able to problem-solve when they encounter

difficulties (Zebehazy & Wilton, 2014). Hence, these individual factors may further impact their ability to participate fully in STEM.

To address these individual factors, this study focuses on toys and play activities that are commonly enjoyed by young children with visual impairment. A substantial body of research supports the importance of play for both individuals with and without visual impairments (e.g., Ferguson & Buultjens, 1995; Lai et al., 2018; Verver et al., 2020). Play is recognized as beneficial for a range of developmental domains, including motor skills, cognition, and social interaction (Celeste, 2006; Lai et al., 2018; Verver et al., 2020). Furthermore, certain types of toys and play activities—such as origami, the art of paper folding—are suggested to support the development of spatial awareness and foundational mathematical concepts (Pinho et al. 2016; Wong, 2022). This raises the possibility that some types of play or toys may be more influential in fostering spatial and other skills relevant to STEM learning.

However, to the authors' knowledge, no research to date has examined toys and play activities among individuals with visual impairment specifically from the perspectives of STEM learning. Moreover, much of the existing research relies on observations or interviews with parents and teachers, rather than focusing on the perspectives and experiences of individuals with visual impairments themselves. Amplifying the perspectives of these individuals is essential—primarily because

their insights can offer practical and meaningful contributions to our understanding of learning and development. In addition, historically, research has often excluded the voices of individuals with disabilities (Cameron, 2014). However, with growing recognition of disability studies and the social model of disability, incorporating the lived experiences of people with disabilities has gained increasing recognition as important for reducing barriers and creating more inclusive environments. This study seeks to address this gap by directly engaging individuals with visual impairments and highlighting their experiences.

## **Objectives**

The objectives of this research were twofold. First, it aimed to investigate the childhood play experiences of adults with visual impairments in Japan, India, Germany, and the U.S. who demonstrated both passion and proficiency in STEM fields. Second, it sought to identify key features of these childhood play experiences and the specific toys mentioned, in order to provide insights into how these toys may have supported the development of spatial and STEM-related access skills.

The research questions addressed in this study were:

- What were the participants' favorite toys and games, and were there any common characteristics among them?
- What types of play were initiated, and were there any specific

developmental areas—including spatial and STEM-related access skills—that appeared to be supported by these toys and games?

## **Methods**

This study was reviewed and approved by the Institutional Review Board of the first author affiliated university to ensure ethical standards and protect the rights of the participants. A purposive sampling strategy was utilized to select “a sample from which the most can be learned” (Merriam, 2009, p. 77). The researchers personally invited individuals with visual impairments from their respective countries to participate in the study throughout fall 2023 and spring 2024. In order to participate, individuals needed to be over the age of 18 and interested in STEM subjects, majoring in STEM, or employed in STEM fields.

The study utilized 30–40-minute semi-structured interviews virtually. During these interviews, participants were asked questions including

- What was your favorite childhood toy or game?
- How and with whom did you play with this toy or game?
- Why did you like this toy?
- Do you think these toys/games helped you in developing skills related to spatial and STEM-related access skills? If so, in what ways?

These questions were developed specifically for this study, based on the research objectives and research questions. During each interview, the researchers

asked follow-up questions to clarify the responses of participants and explore topics in greater detail as needed. Interview notes were taken by the researchers during the interviews.

## **Data Analysis**

Content analysis was used to analyze the data. This is one of the common qualitative methods aimed at producing a condensed yet comprehensive description of a phenomenon (Elo & Kyngäs, 2008). The first author independently developed initial codes and themes based on the interview notes collected from all four countries, in alignment with the overall focus of the study. These themes were then compiled by the first and second authors and reviewed collaboratively with all authors to ensure consistency and relevance across the full dataset. Any discrepancies were discussed until consensus was reached.

Further analysis focused on the three areas:

- the types of play initiated (i.e., solitary, parallel, cooperative);
- whether the play or the toy was simple (i.e., involving basic design and functionality) or complex (i.e., involving multiple steps or strategies), and
- the developmental areas supported by play or toy, with a particular focus on spatial and STEM-related access skills.

Van Hiele's theory of geometric thinking was used as a framework to determine if any of the play or toys may have enhanced spatial and STEM related skills. Van

Hiele's theory of geometric thinking consists of five levels that describe how children develop their understanding of geometric concepts. These levels progress from basic visual recognition of shapes without formal understanding of their properties (Level 0: Visualization) and identifying shapes based on their attributes and characteristics (Level 1: Analysis), to more advanced levels—Level 2 (Abstraction), Level 3 (Deduction), and Level 4 (Rigor)—in which students progressively identify and analyze geometric forms, moving toward increasingly abstract reasoning (Crowley, 1987). Although this theory was not originally developed with children with visual impairments in mind, previous research applying it to learners with blindness suggests that foundational STEM-related access skills—such as bimanual exploration, spatial awareness, and cognitive integration—are especially essential for attaining the early stages of geometric thinking (Levels 0 and 1) (Argyropoulos, 2022; Miyauchi & Thamburaj, 2025). Therefore, Van Hiele's theory was used to help interpret the potential developmental benefits of the different types of play activities described by the participants.

## **Participants**

This study involved a total of 25 adults with a visual impairment from Japan (n=6), India (n=10), Germany (n=5), and the U.S. (n=4). These individuals demonstrated both a passion and proficiency in STEM, as evidenced by their

engagement in at least one of the following areas: focusing their studies in STEM fields during high school, pursuing STEM disciplines/majors at university or college, or obtaining occupations in STEM-related fields.

## **Results**

### **Participant Demographics**

The ages of the 25 participants were distributed as follows: 1 participant was 20 years old or younger, 7 participants were between 20 and 40 years old, 10 participants were between 41 and 60 years old, and 7 participants were 61 years old or older. In terms of gender, there were 16 males and 9 females. All participants were blind and/or read braille at the time of the interview, although some reported having usable vision in their early childhood. Educationally, all participants except one held at least a bachelor's degree, with some possessing master's or doctoral degrees. Their professions varied widely, including roles such as computer programmers, computer network engineers, teachers, and university lecturers (Table 1).

### **Favorite Toys and Games and Their Traits**

Participants were asked to share about their favorite toys and games as a child. Table 2 provides an overview of their responses by country. Information about the type of toys and games and examples are included in Table 2.

**Table 1***Type of Employment Held by Participants*

Occupation	Field	Number
Business section	Programming/engineering	6
Teacher	Math, science, social science, language, assistive technology,	11
University professor	music	4
Student	Math, science, computer programming, language, special	1
Other	education	3
	Teacher education	

**Table 2***Favorite Toys and Games of the Participants*

Female	Male	Category	Favorite Toys and Games
5	11	Board games	Pallankuzhi, Snakes and Ladders, Chess (India)
			Shut the Box, Memory (odor/tactile) (Germany)
			Card games, Shogi, Diamond board game (Japan)

7	5	Crafts	Cutting paper, kneading (Germany) Origami (Japan) Painting/drawing (Germany and Japan)
2	9	Building blocks	Legos (U.S. and Germany) Magnetic building blocks (Germany) Wooden blocks (Japan and U.S.) Building blocks that stick to one another (Japan)
2	6	Toys/figures with movement or noise	Slinky (U.S.) Transformers (U.S., Japan) Battery-powered toy cars/railroad trains that move (U.S.) Small toy cars (U.S.) Robot cassette player (U.S.) Marble run (Germany)
3	2	Playing in the nature	Climbing trees (Japan) Riding pedal cars (Germany) Riding tricycles/bicycles (Japan) Playing with “melody ball” (Japan) Playing in the sand box (Japan) Visiting construction sites (Germany)

### Playing house (Japan)

0	4	Puzzles	3D puzzles (Japan), puzzles (Germany)
1	3	Dolls and figures	Animals by Schleich, figures by Playmobil, and stuffed toys (Germany)
1	0	Books	Tactile books and picture books (Germany)
0	1	Everyday objects that become toys	Alarm clock and old radios (Germany)

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The most commonly mentioned categories included board games, crafts, and building blocks. Many participants highlighted the creative possibilities offered by these toys. For instance, one participant from Germany shared: “I loved building with blocks because you could be creative and construct things on your own.” Certain toys, such as Transformers, were mentioned by participants across different countries as their favorites. The following quote from a Japanese participant illustrates what made this toy so enjoyable:

Toys like Transformers was really fun. Understanding how the toy changed—from a car into a robot—was exciting. It was like, “Ooh, this is where the arms come out!” I could feel what was changing directly in my hands, at my own pace.

There were regional differences in the toys and games identified by the participants. In illustration, participants from Germany discussed board games such as Shut the Box. This game is also known as "Klappenspiel" or "Klappbox." It is a dice game for two or more players in which the goal is to flip down all the numbered tiles on a game board. The aim is either to close all the tiles or, after a certain number of rounds, to have the lowest score. In contrast, participants from India mentioned board games such as Pallankuzhi and Snakes and Ladder. Pallankuzhi is a traditional South Indian two-player strategy game played with a wooden board and shells or seeds, requiring strategic thinking and focus. The goal is to capture more shells than the opponent by moving them around the board according to specific rules. Snakes and Ladders is a simplified version of the Indian game "Paramapadham", symbolizing life's journey with ladders representing virtues and snakes representing vices. Players take turns rolling dice and moving tokens on a numbered board, aiming to reach the final square first. For example, a participant in India shared, "I enjoyed playing board games like Pallankuzhi because they allowed me to think ahead and plan my moves carefully."

Only one participant mentioned toys and games specifically designed or augmented for children with visual impairments. This participant spoke about tactile and picture books. The other toys and games were accessible due to their

distinct textures, tactile cues, and/or emitted sounds, providing haptic and auditory feedback. Examples of toys with haptic feedback included LEGO bricks, chess, origami, and Pallankuzhi, while examples of toys with auditory feedback included toy trains and talking robots.

### **Types of Play Initiated, Complexity of Play or Toys, and Developmental Areas Supported**

Based on participants' descriptions, the types of play initiated, the complexity of play, and the developmental skills supported varied depending on the toy or game. In many cases, play was solitary, except for playing in nature. Some toys and games (e.g., building blocks, handicrafts, and dolls or figures) were played with siblings or peers and may have encouraged parallel play. However, cooperative play was mentioned with board games (e.g., Pallankuzhi and chess) that were frequently played with siblings and peers. The following excerpt from a U.S. participant provides an example of parallel play involving a toy used with family members.

I loved playing with toy cars and trains, especially with my cousins. I'd build roads, bridges, and tunnels—real ones, using dirt and anything solid I could find. The bridges had to be strong enough to hold the weight of the trains, and my trains carried real coal that I crushed myself. I liked creating my own little world, where I could make up the rules as I went.

With the exception of playing in nature and board games, most toys and games involved simple functional play, where participants used them in straightforward ways. However, some toys also supported complex functional play, depending on how they were used. For instance, origami, one of the handicrafts mentioned by participants from Japan, was a simple activity when they engaged in basic folding. In contrast, it became more complex when they created multi-piece structures with multiple origami papers and complicated folding such as Kusudama. Similarly, building blocks, 2D puzzles (traditional jigsaw puzzles), and 3D puzzles involved simple functional play when participants matched basic shapes or assembled a few pieces, but they also supported complex functional play when used to construct detailed structures or solve intricate puzzles.

Only a few toys and games, such as LEGO bricks and origami, aligned with Level 0 and possibly Level 1 of Van Hiele's theory of geometric thinking. For example, LEGO bricks relate to Level 0, as most participants enjoyed building objects they imagined in their minds. To replicate these mental images, they needed to touch, recognize, and assemble the basic shapes of the LEGO blocks—demonstrating skills connected to Level 0.

Origami, meanwhile, appears to reflect aspects of Level 1. One participant from Japan recalled how, as a child, he enjoyed thinking about ways to fold paper more precisely and neatly by relying solely on touch. Rather than using vision, he

focused on how fold lines related to each other—a process that may reflect an understanding of the basic properties of shapes, such as angles, lines, and points:

I liked thinking about ways to improve my origami folding. For example, when folding the paper into a triangle, I realized that aligning fold lines with other fold lines—rather than trying to match up edges or points—was the key to making it neat. When folding by touch, it’s hard to tell if the edges or corners are truly aligned. But if you focus on folding so that the lines meet each other, you can feel the alignment clearly. Understanding how lines relate to each other on the shape really helped me fold more precisely.

Additionally, participant descriptions suggested that activities such as Slinky and 3D puzzles may also have supported spatial reasoning. For instance, a U.S. participant reflected, “With the Slinky, I could change how I placed it and see how it moved differently. It helped me get a better sense of space.” Similarly, a Japanese participant noted, “When you play with 3D puzzles, you do a lot of spatial simulations in your head. You imagine what the final shape will look like once it's completed.”

## **Discussion**

This study aimed to investigate the childhood play experiences of adults with visual impairments currently working in STEM or related fields across four countries. Specifically, it explored the types of toys and play activities they

engaged with during childhood and examined how these experiences may have contributed to the development of spatial and STEM-related access skills.

Despite the geographic differences, participants mentioned a wide range of toys and play activities, including board games, building blocks, and outdoor play. Most of the toys and games mentioned were associated with solitary play and involved simple tasks. However, some toys facilitated more complex functions and supported parallel play. Board games were the only category that often appeared to encourage cooperative play. Past research has confirmed that solitary play is more common than parallel or cooperative play among children with visual impairments, and the findings of this study align with those previous results (Verver et al., 2020b).

Although the authors initially anticipated that toys and games preferred by adults in STEM fields would have strong connections to spatial awareness and STEM-related access skills—traits that align with Van Hiele’s theory, ranging from Level 0 to Level 4—very few of the toys mentioned by participants aligned with this theory, and when they did, it was primarily with Level 0 and Level 1. This can be explained by two key factors. First, previous research has shown that preferences for toys and games evolve with children’s cognitive development and age (Verver et al., 2020). In other words, as children grow, their preferences shift. Therefore, even adults who later pursue STEM careers may have favored more

general or widely popular toys during their childhood, rather than those directly linked to STEM-related access skills. Second, spatial reasoning and STEM-related access skills likely do not develop in isolation. For instance, although Level 0 of Van Hiele's theory does not require language or advanced cognitive abilities, higher levels rely on both. From Level 1 onward, the ability to verbally describe shapes' properties and logically order them becomes essential (van Hiele, 1999). This suggests that spatial reasoning is closely connected to broader cognitive and linguistic development, which in turn is facilitated by engaging with a variety of toys and games.

Lastly, many of the toys mentioned were already accessible to children with visual impairments, either naturally or through small adaptations made by their parents or siblings. This suggests that these toys were already inclusive in many ways. Buying augmented toys can be costly and may not be feasible in regions where families have limited financial resources. It is important to note that many commercially available toys, when adapted, can effectively facilitate play and development for children with visual impairments, as demonstrated in this research.

## **Limitations**

The number of participants interviewed was relatively small, and the sample included a wide age range. It might have also been beneficial to broadly share the

study announcement on social media and list-servs. Additionally, more males than females were interviewed, which may have influenced the types of toys and games mentioned. While interviewers asked participants to name several of their favorite toys, some individuals may have had more vivid memories than others, and their recollections could have been influenced by time and subsequent experiences. For instance, although tactile books were expected to be mentioned more frequently, only one participant included them as one of their favorite toys or games. This may be due to differences in memory recall, and the absence of certain toys or games in participants' responses does not necessarily mean they did not engage with them.

### **Future Directions**

Future studies should expand the sample size and include a more balanced representation of genders and ages to capture a broader range of experiences and preferences. To mitigate potential memory recall biases, future studies could consider providing participants with a list of common toys and games as prompts. Research is also needed to examine how play has changed in recent years due to the increasing availability of technology, including smartphones, tablets, and gaming systems. Future research that follows a group of children with visual impairments longitudinally would allow researchers to investigate the impact of play on the development of language, social-emotional, spatial reasoning, and STEM skills across time.

## **Conclusion**

This study explored the childhood play experiences of individuals with visual impairments from Japan, India, Germany, and the U.S. who demonstrated both passion and proficiency in STEM, with a focus on toys and activities that may enhance spatial and STEM-related access skills. While a wide range of play experiences were reported across countries, fewer than expected had clear links to spatial or STEM-relevant development. Nonetheless, as demonstrated in previous research, play supports multiple areas of development. Therefore, the importance of encouraging play among children with visual impairments cannot be overstated. Notably, this study found that many toys were naturally inclusive or easily adaptable, suggesting that meaningful play does not require expensive or highly specialized materials. This highlights the potential for promoting play even in settings with limited economic resources.

## References

- Argyropoulos, V. S. (2002). Tactual shape perception in relation to the understanding of geometrical concepts by blind students. *British Journal of Visual Impairment*, 20(1), 7–16.
- Cameron, C. (20014). *Disability Studies: a student's guide*. Sage.
- Celeste, M. (2006). Play behaviors and social interactions of a child who is blind: In theory and practice. *Journal of Visual Impairment & Blindness*, 100(2), 75-90.  
<https://doi.org/10.1177/0145482X0610000203> (Original work published 2006)
- Crowley, M. L. (1987). The van Hiele model of the development of geometric thought. In M. Lindquist (Ed.), *Learning and Teaching Geometry, K-12 (pp.1-16)*. National Council of Teachers of Mathematics.
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- Ferguson, R., & Buultens, M. (1995). The play behaviour of young blind children and its relationship to developmental stages. *The British Journal of Visual Impairment*, 13(3), 100-107.

Hilson, M., Hobson, S., & Wild, T. (2016). Conceptual understandings of students with visual impairments about biodiversity across ecosystems. *Journal of Blindness Innovation and Research*, 6(2).

<https://nfb.org/images/nfb/publications/jbir/jbir16/jbir0602tc.html>

Jessup, G., Bundy, A. C., Broom, A., & Hancock, N. (2017). The social experiences of high school students with visual impairments. *Journal of Visual Impairment & Blindness*, 111(1), 5–19.

Kamei-Hannan, C. (2009). Innovative solutions for words with emphasis: Alternative methods of braille transcription. *Journal of Visual Impairment & Blindness*, 103, 709–721. <https://doi.org/10.1177/0145482X0910301014>

Koehler, K., & Wild, T. (2019). Students with visual impairments' access and participation in the science curriculum: Views of teachers of students with visual impairments. *Journal of Science Education for Students with Disabilities*, 22(1), 1–17. <https://doi.org/10.14448/jsesd.11.0003>

Koehler, K., Wild, T., & Tikkun, S. (2018). Implications for 3-D printing for teaching geoscience concepts to students with visual impairments. *Journal of Science Education for Students with Disabilities*, 21(1), 49–81.

<https://doi.org/10.14448/jsesd.10.0004>

- Lai, N. K., Ang, T. F., Por, L. Y., & Liew, C. S. (2018). The impact of play on child development - a literature review. *European Early Childhood Education Research Journal*, 26(5), 625–643. <https://doi.org/10.1080/1350293X.2018.1522479>
- Marriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. Jossey-Bass.
- McLinden, M., McCall, S., & Hodges, L. (2020). *Learning through touch supporting learners with multiple disabilities and vision impairment through a bioecological systems perspective*. Routledge.
- Miyauchi, H., & Thamburaj, R. (2025). Exploratory study on geometric learning of students with blindness in mainstream classrooms: Teachers' perspectives using the Van Hiele theory. *Education Sciences*, 15(4), 475.  
<https://doi.org/10.3390/educsci15040475>
- Okrent, A. & Burke, A. (2021). The STEM labor force of today: Scientists, engineers and skilled technical workers. *Science and Engineering Indicators 2022*.  
<https://nces.nsf.gov/pubs/nsb20212>.
- Pavlovičová, G., Bočková, V., & Laššová, K. (2022). Spatial ability and geometric thinking of the students of teacher training for primary education. *TEM Journal*, 11(1), 388–395. <https://doi.org/10.18421/TEM111-49>

Pinho, T. M. M., Delou, C. M. C., & Lima, N. R. W. (2016). Origami as a tool to teach geometry for blind students. *Creative Education*, 7(17), 2652–2665.

<https://doi.org/10.4236/ce.2016.717249>

Rosenblum, L. P., & Herzberg, T. S. (2015). Braille and tactile graphics: Youths with visual impairments share their experiences. *Journal of Visual Impairment & Blindness*, 109, 173–184. <https://doi.org/10.1177/0145482X1510900302>

Rosenblum, L. P., Herzberg, T. S., Larkin, S., Osterhaus, S., & Wild, T., (2024).

Mission INSPIRE: A virtual STEM event for students aged 11–16 years who read braille, *Journal of Visual Impairment & Blindness*, 119(1), 61–74.

<https://doi.org/10.1177/0145482X251320109>

Rule, A. C., Stefanich, G. P., Boody, R. M., & Peiffer, B. (2011). Impact of adaptive materials on teachers and their students with visual impairments in secondary science and mathematics classes. *International Journal of Science Education*, 33(6), 865–887. <https://doi.org/10.1080/09500693.2010.506619>

Smith, D. (2017). Mathematics. In M. C. Holbrook, T. McCarthy, & C. Kamei-Hannan (Eds.), *Foundations of education: History and theory of teaching children and youths with visual impairments* (pp. 479–509). AFB Press.

- Unal, H., Jakubowski, E., & Corey, D. (2009). Differences in learning geometry among high and low spatial ability pre-service mathematics teachers. *International Journal of Mathematical Education in Science and Technology*, 40(8), 997–1012. <https://doi.org/10.1080/00207390902912852>
- van Hiele, P. M. (1999). Developing geometric thinking through activities that begin with play. *Teaching Children Mathematics*, 6(6), 310–316. [www.nctm.org](http://www.nctm.org)
- Verver, S. H., Vervloed, M. P. J., & Steenbergen, B. (2020). Characteristics of peer play in children with visual impairments. *Research in Developmental Disabilities*, 105. <https://doi.org/10.1016/j.ridd.2020.103714>
- Wild, T. A., Herzberg, T. S., & Hicks, M. A. C. (2022). An examination of early intervention services for children with visual impairments during the COVID-19 pandemic. *Journal of Visual Impairment and Blindness*, 116(6), 764–773. <https://doi.org/10.1177/0145482X221144043>
- Wong, Y. (2022). The influence of origami on mathematics study. *Creative Education*, 13(07), 2264–2274. <https://doi.org/10.4236/ce.2022.137143>
- Zebehazy K. T., & Wilton A. P. (2014). Charting success: The experience of teachers of students with visual impairments in promoting student use of graphics. *Journal of Visual Impairment & Blindness*, 108(4), 263–274. <https://doi.org/10.1177/0145482X1410800402>

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