Convention Issue: Portland 2020

Visual Impairment and Deafblind Education Quarterly

Volume 65, Issue 2

The Voice and Vision of Special Education

Council for Exceptional Children
The voice and vision of special education

Cover photo description: It was a very cold, March 2019 spring day, when Makayla Hartin took this photograph of a walking path at the Camas, Washington, Lacamas Lake Park trail. Note the shadows & glimmer of sunrays illuminating the path through the old growth fir trees.

Photo credit: Makayla Hartin

Information about the 2019 Washington State School for the Blind Photography Class by Gary L. Scott, WSSB Volunteer Instructor: This class was specifically tailored for the students of Washington State School for the Blind. Students who want to share their unique vision, are assisted by a volunteer who acts as their visual conduit, together they collaborate to create an image from the student's "*Mind's Eye*." For example, a student who is blind can describe a subject matter from their senses, while their volunteer describes objects that aren't within their proximity. Together they discuss image composition for the camera. After both are in agreement, the student physically takes the picture. The result is a shared image that the student takes ownership of. Students are delighted to explore their world creatively. As a former student once shared with me, "I am happy I can finally share with sighted people what's in my mind."

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Message from the Editor

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Welcome to the Spring Convention Issue! This issue celebrates all of DVIDB's award winners for 2020 that are making a difference in the field of visual impairments and deafblindness. Congratulations to all of the award winners for all that they do for the field! This issue also contains five manuscripts from presenters at this year's annual conference sharing a range of strategies, research, and curriculum from their presentations. Thank you to all of the authors, presenters, and sponsors that contributed to this issue and to the 2020 Convention!


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President's Message

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Welcome to newly elected leadership in the amazing Council of Exceptional Children: Division of Visual Impairment and Deafblindness! As President of DVIDB, I wanted to welcome new members of our board and thank returning members. Lisa McConachie is serving as our president elect and our new board members are Carol Rimka, Joan Allison, Bryan Moles, and Jodi Reeves.

Continuing board members include Tessa McCarthy our secretary, Karen Koehler as treasurer, and board members include Kathleen Farrand, Kathleen Stanfa, Ying-Ting Chiu, Adam Graves, and Donna Sorenson. Thank you all for your service to our division, your hard work is greatly appreciated. I'd like to share a special thank you to our Past-President, Dr. Amy Parker, for her leadership and dedication to DVIDB through her presidency. Our gratitude is also extended to Mackenzie Saviano for continuing to update our website.

As the new president of DVIDB for the 2020-2021 term, I look forward to serving our division in this capacity. It is my hope to increase engagement among members and provide more opportunities for interaction. In February, we were excited to welcome so many colleagues at our pre-convention and convention in Portland, Oregon. Due to the sponsorship of the Columbia Regional Center in Portland and the American Printing House for the Blind, we were able to host Diane Sheline for a full day of information on "Implementing Effective Instructional Practices for Students with CVI". A special thank you to all of the presenters throughout the convention and those that contributed to this issue. Portland was a wonderful time of sharing and learning. Our DVIDB Facebook page shares several highlights of the Portland convention. Thanks to all of our generous sponsors we were able to hold our business meeting and social at Altabira City Tavern. At this meeting we were able to recognize the work of our award

winners which included Dr. Sandra Rosen: Distinguished Service Award, Dr. Stacy Kelly: Exemplary Advocate Award, Robin Finley: Teacher of the Year Award, Ying-Ting Chiu: Virginia M. Sowell Student of the Year Award, and Dr. L. Beth Brady: Deborah D. Hatton Dissertation of the Year Award. All of our award winners were well deserving and it was an honor to recognize you in this capacity.

While in Portland, DVIDB was able to host a community forum on "Revising the DVIDB Teacher of DB and Intervener Standards: A Participatory Process" which was facilitated by Adam Graves, Dr. Amy Parker, and the DVIDB Validation team. During this time the validation team discussed the process for revising the specialty sets of competencies for teachers of students with deafblindness and interveners. This hard work will continue throughout the year as the validation team works on updating all of the standards. Thank you for all of your hard work on this very important task.

I'm happy to announce our next webinar is on April 16th, 4:00 EST and will feature Julie Maier discussing Meaningful Literacy for Students with Multi-Sensory needs. The webinar is free to members and $15 to non-members (https://www.eventbrite.com/e/meaningful-literacy-for-students-with-multi-sensory-needs-tickets-96133685441). If you cannot make the live webinar you can always log on to the members only section to view the webinar at a later date.

In the upcoming months our DVIDB Board will be working with you and beginning to plan for CEC 2021 in Baltimore, Maryland. The CEC Call for proposals will open throughout the month of March, if you are interested in presenting your work. All of the proposals are peer-reviewed and if you are a member in good standing and are interested in being a proposal reviewer, we welcome your support. Please let me or any other board member know how you would like to be involved. Thank you to Dr. Kathleen Farrand for editing another amazing edition of the *Visual Impairment and Deafblind Education Quarterly*. In closing, I hope to connect with you throughout the year and hear your ideas for convention as well as for future webinars. Save the date for CEC Baltimore 2021 March 3rd – 6th.

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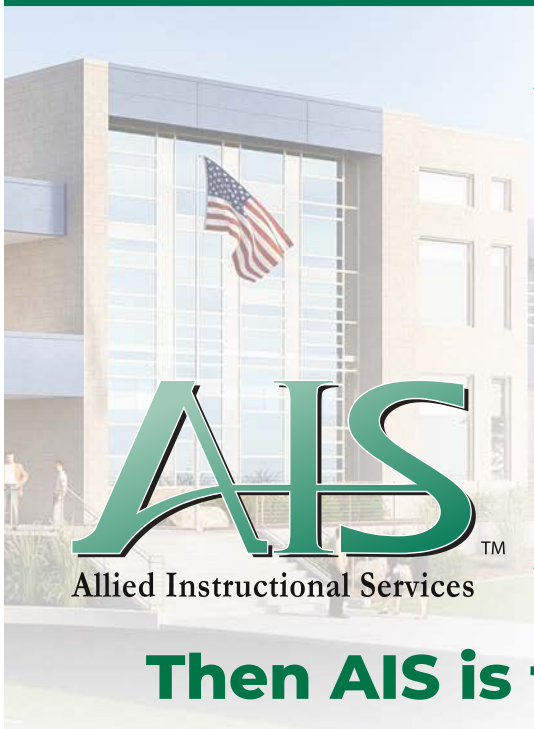

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Virginia M. Sowell Student of the Year Award

Ying-Ting Chiu

DVIDB is delighted to recognize Ying-Ting Chiu as our 2020 Student of the Year!

Ying-Ting Chiu is a PhD Candidate in the Department of Teaching and Learning at The Ohio State University and a hardworking member of the DVIDB board. Chiu's studies have been focused on equitable access to science education for students with disabilities, particularly visual impairments. Her research interests include inclusive curriculum design, hands-on material adaptation, conceptual understanding, and science identity.

Deborah D. Hatton Dissertation of the Year Award

Dr. L. Beth Brady

DVIDB is pleased to recognize Dr. L. Beth Brady with the Deborah D. Hatton Dissertation of the Year Award!

Prior to accepting a full-time position at Hunter College, Beth was an itinerant teacher of students with visual impairments in the New York City Public Schools, after beginning her career as a classroom special education teacher of learners with severe/multiple disabilities in New York City's District 75 and at the Boston College Campus School. Beth successfully defended her dissertation this

fall at Teachers College, Columbia University, under the advisement of Dr. Laudan Jahromi in the Intellectual Disability and Autism program. Her dissertation is entitled, “Augmented Input and the Classroom Communication Environment for Learners with Deafblindness,” and explores using group design methods with this low incidence population. Her additional research interests are in early cognitive developmental milestones, alternate assessment, inclusion and the use of teacher action research in preparation programs. Beth received both her B.A. in Elementary Education and American Heritages and a M.Ed. in Severe Special Education, with a concentration in deafblindness, from Boston College.

Teacher of the Year Award

Robin Finley

DVIDB is delighted to announce Mrs. Robin Finley as our Teacher of the Year!

Robin Finley has worked in a variety of education roles for over 25 years. She's a dedicated teacher at the Ohio State School for the Blind and has taught higher education courses for The Ohio State University and the TVI Consortium in Ohio. She's been a huge advocate for literacy, numeracy, and science for students with visual impairments, contributing to publications, online courses and to technical assistance projects. Her teaching and outreach has had a tremendous impact in Ohio and nationally.

Exemplary Advocate Award

Dr. Stacy Kelly

DVIDB is delighted to recognize Dr. Stacy Kelly as our Exemplary Advocate!

Stacy Kelly, Ed.D., completed her doctoral degree as a National Center for Leadership in Visual Impairment (NCLVI) Doctoral Fellow. Prior to coming to Northern Illinois University, Kelly worked as a faculty member at Illinois State University and a disability policy researcher in Washington, DC. She taught students who were blind or visually impaired as a teacher of students with visual impairments (TSVI) in the Chicagoland area. She is also a Certified Orientation and Mobility Specialist (COMS) and a certified school administrator. Most recently, Kelly has been appointed as an Assistive Technology Certification Subject Matter Expert (SME) by the leading credentialing organization for vision rehabilitation and educational professionals.

Distinguished Service Award

Dr. Sandra Rosen

DVIDB is delighted to recognize Dr. Sandra Rosen with our Distinguished Service Award for 2020!

Dr. Rosen is coordinator of the Program in Orientation & Mobility (O&M) at San Francisco State University. She is internationally known for her work in the field, including the development of new teaching approaches in O&M and methods of teaching mobility to people who have both physical and visual impairments. Dr. Rosen has also worked with professionals internationally to develop O&M specialist preparation programs in other countries and is a frequent speaker at international conferences. She created "Step-by-Step" an interactive computer program designed to enhance the preparation of O&M specialists at the university level and has published numerous books chapters and professional articles on topics related to visual impairment. Her current research interests include the

facilitation of balance in children born with visual impairments and the facilitation of proprioceptive awareness in teaching motor and mobility skills.


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Strategies that Support the Inclusion of Children with Visual Impairments in Early Childhood Settings

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Educators in early childhood settings will often present one of the first structured learning environments for young children with visual impairments. This article will highlight some strategies that may be helpful in guiding educators in creating a comprehensive and welcoming environment for our students with visual impairments.

I have been an integrated preschool teacher for over 17 years and I spent more than 9 years as a Teacher of the Visually Impaired where I worked with children whose ages ranged from preschool to grade 5; my experience working with children in inclusive settings is broad and deep. Over the years, I have discovered some techniques that have allowed me to create informative and engaging strategies that have fostered the cognitive development of students with visual impairments.

One of the foundations of knowledge required to develop higher-level thinking skills is the development of an in-depth understanding of basic concepts (Bishop, 1996), we must ensure that we introduce them to our students at an early age. Comprehension will not occur because we simply introduce basic concepts to students with visual impairments, we must ensure that they understand these concepts.

Bishop (1996) provided this description of how essential it is to focus on basic concepts' development with young children with visual impairments:

> Concept development may be the most critical cognitive area for young visually impaired children, since such concepts will form the basis for all further cognitive growth. Intelligence measures are heavily concept-based, and absence of concepts can give a depressed view of a visually impaired child's cognitive ability. Since the foundations of intelligence are laid in the first three or four years of life, it is essential (and perhaps **urgent!**) that basic concept development be begun as early as possible for visually impaired children. (How Does A Visual Impairment Affect Early Development section, para. 7)

We must overcome the concern that complex concepts may be too difficult for students with visual impairments to learn in the early grades. I had a preschool child that was legally blind that was presented a diagram of how a pumpkin seed grows. We used real seeds and pumpkins to demonstrate parts of the growth

process (Shafer & Adkins, 2004). We reviewed the stages of growth over many sessions and she was able to understand the concept of seed to plant and she could also explain the process to her peers. We invested a great deal of time in the process of how a seed changes because it is a process that occurs underground; this child could not refer to images to gain a deeper understanding of the stages of growth. We went on to plant real pumpkins seeds and explored the plants during each stage of their development. We also explored a pumpkin to discover how the process continues in a cycle as we took the seeds out to grow in our garden outside.

Image 1. Teacher pointing to a leaf at the end of a row of a diagram about how a pumpkin seed grows from a seed, to a seed with roots, to a seed with roots and sprouts, and finally to a seed with roots, sprouts and leaves.

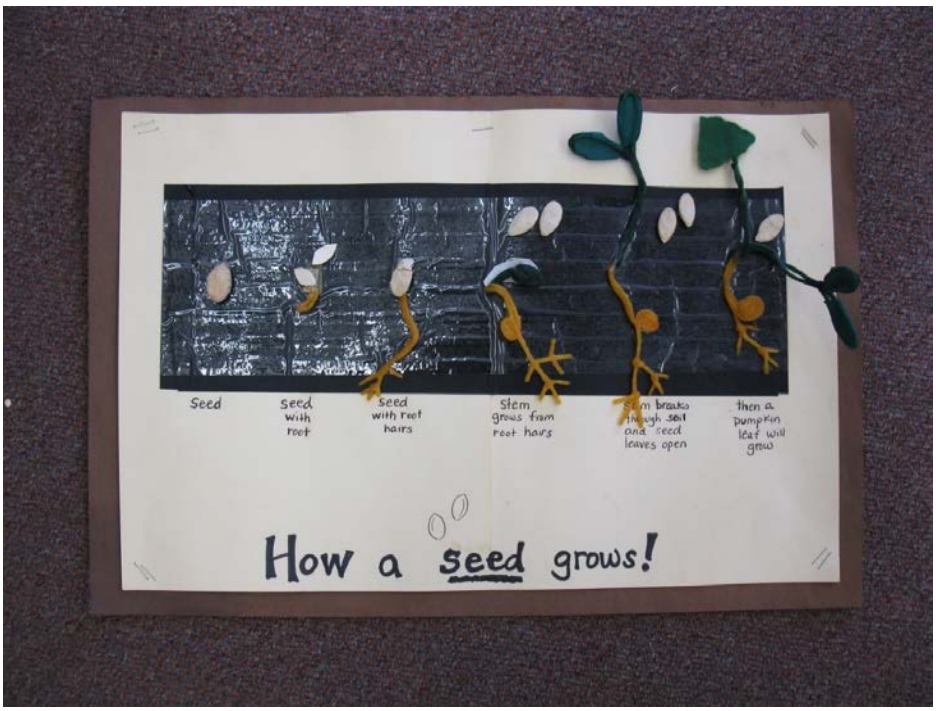

Image 2. Diagram of how an actual pumpkin seed proceeds from seed, to a seed with roots (made of wax sticks), to a seed with wax stick roots and (felt) sprouts, and finally to a seed with wax stick roots, felt sprouts and (tissue paper) leaves.

The key to introducing more detailed concepts in a tactile format in early childhood settings is that the representations must be easily understood and not overlaid with too many textures (Cleveland & Sewell, 2009). It is important to keep the design simple, then the concept can be more advanced without becoming confusing to our students. In addition, the concepts must be taught over several sessions focusing on one section at a time, such as the sprouts and leaves, and then focusing on the representation as a whole.

I used simple materials found in almost every classroom setting to create a very detailed model. In my experience, the most important feedback will come

from your students. I asked this student to describe what she felt at each stage as the pumpkin seeds grew. She described her impressions about the roots and the sprouts in great detail to me so that I could ensure that she understood the concepts being taught. For example, I started with paper models of the seed and this child was unable feel the difference between the various parts of the seed as it grew, therefore, we initially worked with real seeds to ensure she understood what was being presented. Next, I made models that were more durable than the real seeds and were easier to use as instructional tools; the actual seeds continued to change but the instructional items become an important part of the process so that students could generalize their understanding into other settings.

Image 3. Children exploring pumpkin seeds as they dig out the contents of a pumpkin using a large spoon, small spoon, as well as their hands

Image 4. Children looking into a pumpkin that has just had the top part removed and they are trying to figure out how to get the seeds out.

Over the years, I have found that making personal connections with my students and their interests is not only more enjoyable for the children, but it is also a proven method of increasing their motivation to learn. Willis (2007) states that Brain-Based Research suggests higher level learning takes place when a classroom setting is enjoyable and relevant to the students' lives, interests, and experiences.

I also believe that we need to think about engaging our students throughout the learning process and not just in topics we have chosen to present. A few years

ago, I had a 4-year-old student with no functional vision ask me how a caterpillar turns into a butterfly. Although I stated earlier that real-life objects are optimal, there will be times when we do not have access to such items. So, when we began talking about each stage of development, we started our discussion about the eggs and I used small pieces of wax sticks to demonstrate their size and texture. Then, we explored a plastic caterpillar so that we could focus on the details such as the legs, the segments in the abdomen and the antennae. Later, we created our own caterpillars out of clay, pipe cleaners and yarn. Next, we discussed how the caterpillar goes into a chrysalis and we made one out of cotton and masking tape. Finally, we explored the parts of the butterfly body and the wings. After we explored a replica of a butterfly, we recreated our own butterfly using soft clay for the body and feathers for the wings.

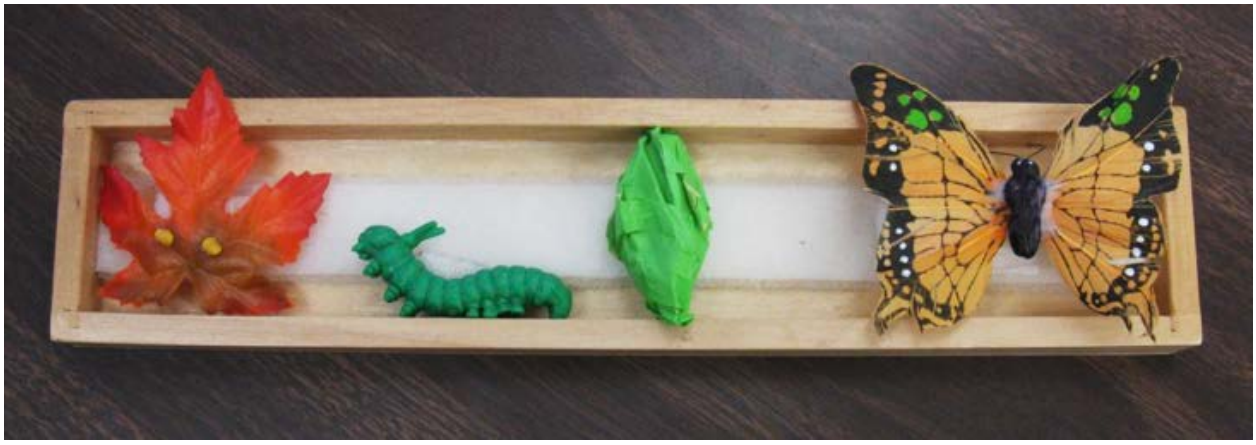

Image 5. Model of the life cycle of a butterfly using cotton leaf with wax for eggs, plastic caterpillar, tape with cotton for chrysalis, and a clay body with feathered wings for the caterpillar.

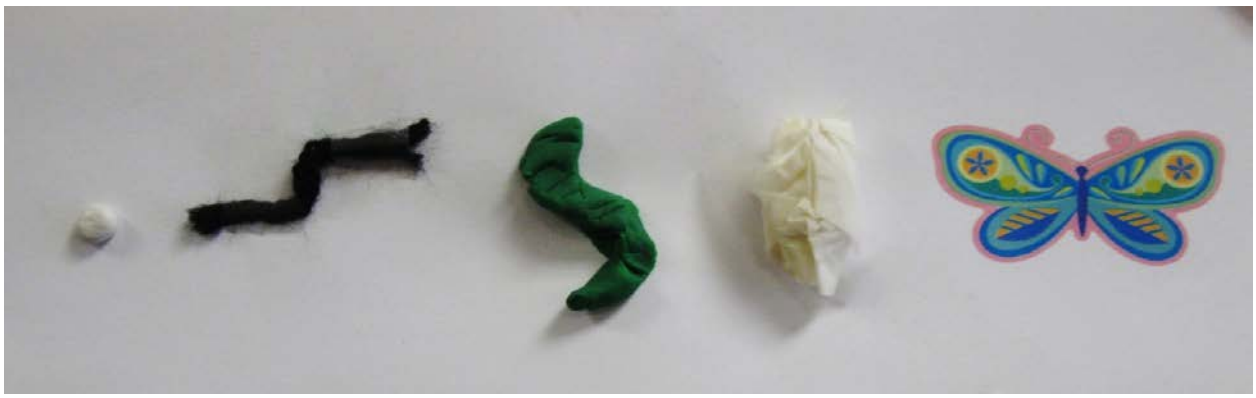

Image 6. Student creation of the life style of a butterfly using wax for egg, yarn for larva, clay for caterpillar, masking tape and cotton for chrysalis and a butterfly sticker. (Note: The sticker was added to the image because the child took their butterfly made of clay and feathered wings home).

By taking an interest in what this child wanted to learn, when the child wanted to learn it, and then adapting it into a format that she was able to engage with directly, it allowed her to be just as inquisitive as any other preschool child.

Some simple suggestions I would have for educators and family members is to introduce and explore common objects that we use every day. For example, gather some materials you have in the house and then have your child sort them. You can use silverware and have them make piles of spoons and forks. You can also have the child sort Lego blocks by size. You can create countless activities by simply taking everyday objects and using them to focus on basic skills development by matching and sorting items based on a specific attributes like size or shape.

To really gain a deeper understanding of what your child or students know, simply ask them. Try not to assume that they understand a concept without asking follow-up questions to ensure they do. Overall, I have found that the more interested our learners are in the subject matter, the more likely they are to really engage in the curriculum even when the concepts are quite challenging. Finally, just have fun and get messy.

References

Bishop, V. (1996). How does a visual impairment affect early development? section, para. 7. In *Preschool children with visual impairments.* TSBVI. Retrieved from *https://www.tsbvi.edu/publications/1069-preschool-children-with-visual-impairments-by-virginia-bishop-2*

Cleveland, J. & Sewell, D. (2009). Early tactile learning. TSBVI. Retrieved from *http://www.tsbvi.edu/school/3096-early-tactile-learning*

Shafer, S. & Adkins, A. (2004). Active learning and the exploration of real objects. TSBVI. Retrieved from *http://www.tsbvi.edu/seehear/winter04/active.htm*

Willis, J. (2007). The neuroscience of joyful education. *Psychology Today, 64.* Retrieved from *https://www.psychologytoday.com/files/attachments/4141/the-neuroscience-joyful-education-judy-willis-md.pdf*

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The Longitudinal Measurement of Communication Growth in Learners with Deafblindness

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Introduction

Communication is the foundation of many aspects of life: relationships, learning, self-advocacy, and more. Individuals with sensory disabilities, including congenital deafblindness (a dual sensory loss from birth), often experience significant delays in communication that result in struggles with social and nonverbal communication (Damen, Janssen, Ruijssenaars, & Schuengel, 2015). For educators of children who are congenitally deafblind (CDB; a dual sensory loss from birth), the issue of communication is often of utmost importance due to the serious delay in their access to language and communication (Belote and Maier 2014; Dammeyer, 2014 Fellinger, Holzinger, Dirmhirn, van Dijk, & Goldberg, 2009; Hoevenaars-van den Boom, Antonissen, Knoors, & Vervloed, 2009; Prain, McVilly, Ramcharan, Currie, & Reece, 2010).

Educational teams have struggled for years to adequately measure both academic and communication skills in this population of students. For this reason, a study was conducted to examine the communication development over time of individuals who were deafblind (DB) through the use of the *Communication Matrix (CM)*. The purpose of this study was to record and compare the longitudinal communication development of students who were CDB by coding data using a structure based on the *CM* (Rowland, 2019). Educational teams (e.g., teachers, interveners, related service providers) and other professionals may find this study useful in that it provides one favorable avenue that could be used to assess the communication development of learners who are DB across time (Probst & Borders, in preparation).

Study Information

Participants included families and/or teachers of individuals who met the diagnostic criteria for congenital deafblindness (*both* a hearing impairment determined by a documented loss resulting in ongoing hearing services and continued hearing services as stated in the IEP and visual impairment, VI, defined as having a vision loss of 20/200 or worse in the better eye with best correction) were included. To participate in the study, these individuals completed informed consent documents and then contributed all available comprehensive educational files (e.g., student individualized family service plans, IFSPs; individualized

education programs IEPs; medical reports; multidisciplinary evaluations MDEs; and correspondence between the families and teachers). All documents were de-identified, uploaded, and stored in REDCap, a web-based password-protected interface for data collection and storage (Probst, 2017). While data was submitted for seven different individuals, only two contained true longitudinal information (spanning over 15 years) and were chosen for case study review.

Case Study Participants

Terry

Terry was an English-speaking male with CDB and suspected autism spectrum disorder (see Table 1). When asked to share strengths and concerns about Terry, his family reported that his strengths included his memory and ability to focus while concerns were that he had inconsistent education, an IEP that was not tailored to his needs, and they felt that his teachers were not qualified to adequately meet his unique needs (Probst, 2017). Terry's cumulative file provided data from two individualized family service plans (IFSPs) and 15 IEPs (ages 3 to 18 years). Upon inspection of these documents, it was noted that Terry received 15 different educational services with little continuity as they varied by year.

Ian

Ian was an English-speaking male diagnosed with hydrocephalus causing deafblindness and orthopedic impairment (see Table 1). Strengths reported by Ian's

family were his curiosity and perseverance whereas concerns included reading, writing, listening, and communication. Ian's cumulative file covered 21 years and included data from three IFSPs (starting at 3 months) and seventeen and IEPs (ages 3 through 21 years). Upon review it was determined that Ian received 13 different educational services and, like Terry, experienced great variability of services from year to year. Additionally, with the concerns voiced by his parent about his communication skills, one would expect that Ian's educational team would target communication by providing continuous services from a speech language pathologist (SLP); however, SLP services declined over time, ultimately resulting in consultation only (Probst, 2017).

Table 1
Demographic Description of Learners

Learner	Vision Loss	Hearing Loss	Etiology	Hearing Device	Visual Aides	Primary Disability Label	Secondary Disability Label
Terry	Unknown	Moderate to Profound	DiGeorge Syndrome, CHARGE Syndrome	Hearing Aids	Glasses	OHI	MD
Ian	CVI	Mild to Moderate-Severe	Hydrocephalus	Hearing Aides	Glasses	Unknown	Unknown

Note. CVI = Cerebral Visual Impairment; MD = Multiple Disabilities; OHI = Other Health Impaired

Data Analysis

The *CM* was chosen because it was developed to measure the functional communication of individuals who have multiple disabilities including deafblindness and seeks to evaluate communication development progress (from "not used" to "emerging" to "mastered" to "surpassed" (Rowland, 2011). After the evaluation is complete, a communication profile is created (see Figure 1 for an example). Important to note is that the communication skills included on the *CM* are skills that typically developing children acquire and master and/or surpass by 24 months of age (Rowland, 2011). When assessing the growth trajectory on the *CM* profiles, one desires to see a decrease of the number of skills in the "not used" category while the remaining three categories increase. The ultimate objective is for the *CM* profile to display at least a "mastery" of communication skills (Probst, 2017). As each communication skill reaches mastery level, fewer skills should be listed as "not used." Using the profiles created by the *CM*, professionals can observe the communication development of individuals who attain these skills at a diminished rate (Probst, 2017).

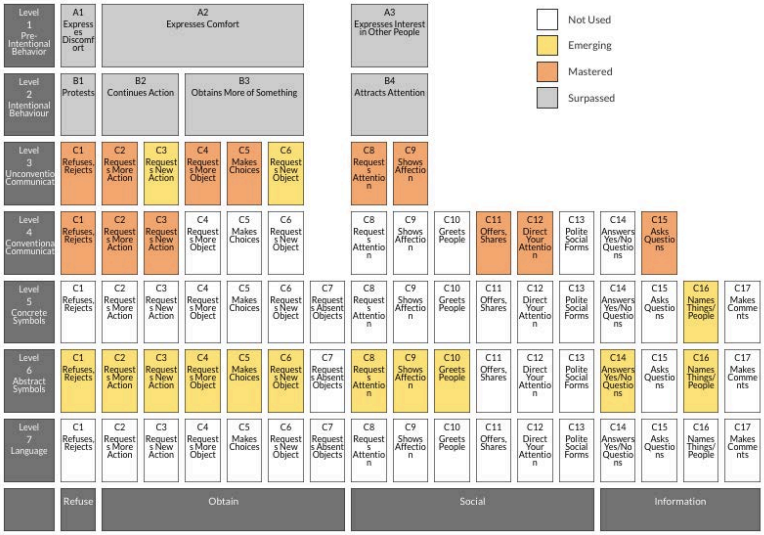

Figure 1. Example of a *CM* profile

To provide both direction and consistency in measurement of changes in communication development, researchers chose to use the *CM* for review and study of the data. Although the *CM* was developed as an observational tool completed by individuals who know the student well, researchers found that this tool was an effective way to chart communication development over time. Using the cumulative education files, the researchers were able to glean information using functional levels of performance statements, goals and objectives, and additional notes found in the IEPs as well as evaluation reports and, when available, formative assessments, and correspondence (emails and letters from therapists, doctors, and parents) from the education files in order to answer the online questions of the *CM*. Using the *CM* in this manner allowed the researchers

to review the documented goals, strengths, and present levels of performance over time of both individuals even without the real-time input of an individual who was very familiar with the learner.

After profiles were created, each category (not used, emerging, mastered, and surpassed) was scored by dividing the total in each category by total number of boxes (e.g., emerging = $\frac{27}{80}$ = 34%) which then allowed each category to be compared. The levels of communication skills (pre-intentional behavior, intentional behavior, unconventional communication, conventional communication, concrete symbols, abstract symbols, and language) on the *CM* profiles were then examined using the same formula (Probst, 2017). This data was used for the analysis of communication development in the case studies.

An examination Terry's *CM* profiles showed mastery of only 19% of the communication skills on the *CM* by the age of eighteen (see Figure 2). Although Terry's communication skills trajectory increased (skills mastered improved from 5% to 19%), this development occurred over sixteen years.

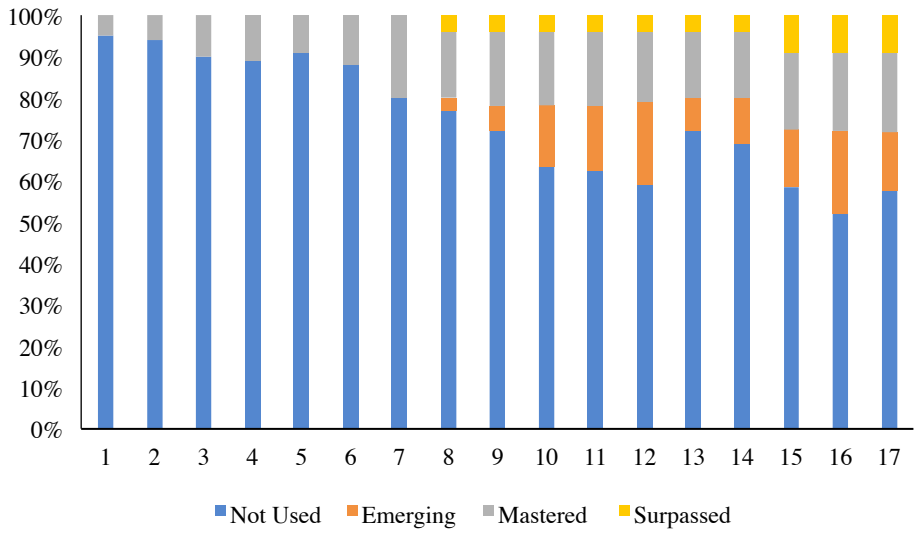

Figure 2. Terry's communication development over time (Probst, 2017).

Ian's data illustrated communication development at a slightly higher rate of increase than Terry (see Figure 3). However, this rate of development, when compared to a typically developing child, is quite delayed. Significantly, Ian's flat growth trajectory from IEP numbers 14 to 21 (ages 11-21.75) indicates no communication development noted in over 8 years (n = 8 IEPs).

As evidenced in the charts, both learners' development of communication skills was minimal and remarkably delayed when compared to typically developing children. Notably, Terry's data displayed a variability across the categories (ages 12-14) and then stayed stable (ages 15-18) while Ian's figures illustrated a flat trajectory (ages 11-21). This could imply that, while both Terry and Ian were developing some communication skills at younger ages, this

development slowed or stopped altogether once they reached adolescence. Overall, both Terry and Ian's data indicated significant communication delays even when growth was reported. Although the data did not indicate the reason(s) for this beyond the impact of a dual sensory loss, one could speculate the possibility that consistency of service delivery could have alleviated at least some of the delay.

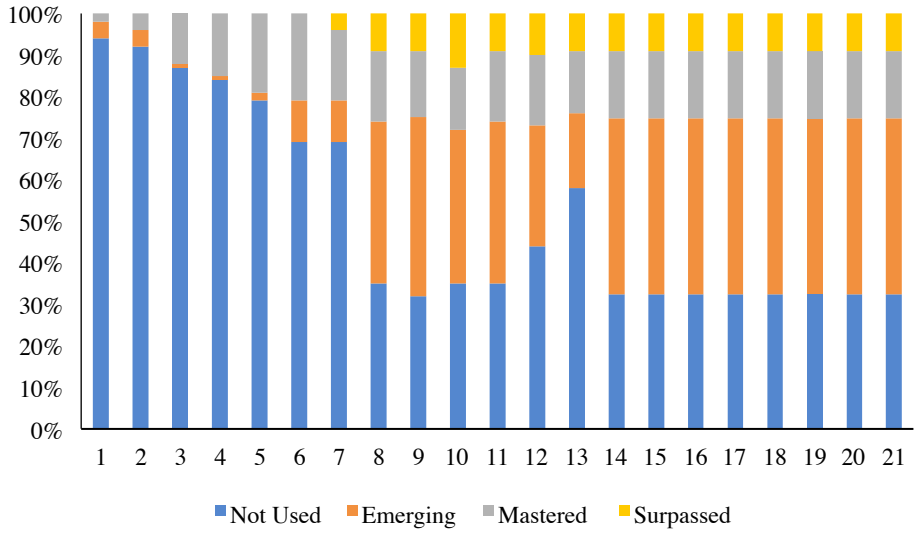

Figure 3. Ian's communication development over time (Probst, 2017).

Discussion

This study attempted to measure the communication development of learners who are DB over time because there is little research in this area. When contemplating the unique communication needs of learners who are DB, educational teams must understand the need to break down communication to very minute steps: (1) preintentional behavior; (2) intentional behavior; (3) pre-

symbolic, nonconventional communication; (4) pre-symbolic, conventional communication; (5) concrete tangible symbols; (6) use of single, abstract symbols; and (7) combinations of 2-3 abstract symbols (see Table 2; Pittroff, 2011; Rowland & Schweigert, 2000).

Table 2

Levels of Communication

Level	Type of Communication	Age (Months) Stage Occurs
I	Pre-Intentional Behavior	0 to 3
II	Intentional Behavior	3 to 8
III	Unconventional Communication	6 to 12
IV	Conventional Communication	12 to 18
V	Concrete Symbols	12 to 24
VI	Abstract Symbols	12 to 24
VII	Language	24

Note: This table reflects the communication stages and a timeframe between which they should develop in typically developing children.

This is where the use of the *CM* can be helpful as it inherently divides individual communication skills into these classifications and ranking order. Professionals can use the *CM* to create a bi-annual or, at minimum, annual profile to provide guidance as they seek to determine their student's educational plans or interventions and supports needed. The *CM* profiles could also provide these teams with a way to track the communication development as exemplified in this examination.

Conclusion

Educational teams have long reported difficulty in measuring the communication abilities of students who are DB. One solution to this dilemma could be the annual or bi-annual use of the *CM* to evaluate and track student communication skills. Additionally, although not addressed in this article, serious consideration should be taken regarding educational services and the importance of consistent provision of services from year to year. These teams should further understand and/or receive professional development regarding the continuum of development specific to communication since this is the area that is most impacted for learners who are DB (Probst, 2017). Better understanding about communication development could aid teams as they create education programs, determine service delivery options, implement interventions, and plan for accommodations.

References

Belote, M., & Maier, J. (2014). Why deaf-blindness and autism can look so much alike. *reSources, 19*(2), 1–16.

Damen, S., Janssen, M. J., Ruijssenaars, W. A. J. J. M., & Schuengel, C. (2015). Communication between children with deafness, blindness, and deafblindness and their social partners: An intersubjective developmental perspective. *International Journal of Disability, Development & Education, 62*(2), 215-243. doi:10.1080/1034912X.2014.998177

Dammeyer, J. (2014). Symptoms of autism among children with congenital deafblindness. *Journal of Autism and Developmental Disorders, 44*(5), 1095–1102. doi:10.1007/s10803-013-1967-8.

Fellinger, J., Holzinger, D., Dirmhirn, A., van Dijk, J., & Goldberg, D. (2009). Failure to detect deaf-blindness in a population of people with intellectual disability. *Journal of Intellectual Disability Research, 53*(10), 874–881. doi:10.1111/j.1365-2788.2009.01205.x

Hoevenaars-van den Boom, M. A. A., Antonissen, A. C. F.M., Knoors, H., & Vervloed, M. P. J. (2009). Differentiating characteristics of deafblindness and autism in people with congenital deafblindness and profound intellectual disability. *Journal of Intellectual Disability Research, 53*(6), 548–558. doi:10.1111/j.1365-2788.2009.01175.x

Pittroff, H. (2011). Development of communication in children with CHARGE syndrome. In U. Horsch & A. Scheele (Eds.), *Compendium on CHARGE syndrome* (pp. 213–236).

Prain, M., McVilly, K., Ramcharan, P., Currie, S., & Reece, J. (2010). Observing the behavior and interactions of adults with congenital deafblindness living in community residences. *Journal of Intellectual & Developmental Disability, 35*(2), 82-91. doi:10.3109/13668251003716417

Probst, K. M. (2017). *Measuring the Longitudinal Communication Growth of Learners Who Are Deafblind* (Doctoral dissertation, Illinois State University). Retrieved from https://ir.library.illinoisstate.edu/cgi/viewcontent.cgi?article=1793&context=etd

Rowland, C. (2011). Using the communication matrix to assess expressive skills in early communicators. *Communication Disorders Quarterly, 32*(3), 190–201. doi:10.1177/1525740110394651

Rowland, C. (2019). How to use. Retrieved from https://www.communicationmatrix.org/Matrix/Pages/UsingTheMatrix

Rowland, C., & Schweigert, P. (2000). Tangible symbols, tangible outcomes. *Augmentative and Alternative Communication, 16*, 61-76. doi:10.1080/07434610012331278914

Determining a Tactile Threshold for Learners with Deafblindness: Teachers' Communication Modality Choices

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When working with learners with deafblindness, teachers must consider not just a students' receptive modality, but must also be modeling potential expressive modalities that can be used by the student in the future. A study was conducted to examine group-level differences in classroom language environments in order to better understand implementation of best practices with learners with deafblindness (DB), and whether state certification practices, student characteristics or specialized training related to differences in adult language modeling. The results of this study can be used both nationally when advocating for changes in ways we support students with DB (i.e., intervener recognition) and at a teacher-level to guide strategies targeted for professional development.

As we know in the low-incidence field of DB, participant recruitment is often our biggest research barrier. By using small, light-weight action cameras

(i.e., GoPros) that could easily be sent to programs across the country, a larger sample size from four states was collected that was not dependent on direct researcher observation. The 15 teacher-student dyads were from four states (New York, Illinois, Massachusetts, Utah) with three distinct teacher certification policies. This allowed for group design research methods to be used, which is novel in the field of DB. Data were collected through behavioral coding of videotaped language samples from classrooms, teacher surveys and Communication Matrix (Rowland, 2011) assessments. Similar observational data collection methods were used by Rowland (1990) and shifted the focus from only looking at students' communication to examining how teachers' communication behavior models, supports and/ or expands the communication of students. Additionally, the guiding frameworks of the research design and questions were the Tri-Focus Framework for communication interventions for pre-symbolic communicators with multiple disabilities (Bruce & Bashinski, 2017; Siegel-Causey & Bashinski, 1997) and van Dijk's child-guided approach to assessing learners with deafblindness (Nelson, Van Dijk, McDonnell, & Thompson, 2002).

The overarching research question was whether there were differences in the rate of verbal, visual and tactile communication forms used by adults in classrooms with learners with DB. We then looked at teacher decision making by comparing rates of teachers who matched their students' expected receptive communication

modalities. By creating groups based on teachers matching, we made comparisons based on specialized training (i.e., teacher preparation in DB or training from a state DB project) and the presence of interveners in classrooms.

Initial Results

Quantitative data derived from behavioral coding was analyzed through a series of non-parametric statistical tests, such as Kruskal-Wallis H (KWH) tests and Spearman's rank tests. In our sample, the group of teachers in Massachusetts, which has a specialized certification in severe/ profound disabilities, had a higher level of American Sign Language (ASL) knowledge, used significantly higher rates of visual communication and were the most likely to match their students' expected receptive modalities. Their students had higher levels of language than the other state groups, despite a wide range of levels of dual sensory loss. Classroom staff in Utah, where interveners are formally recognized by the state, used significantly more tactile communication with learners. Overall, teachers were more likely to match their students' expected receptive modalities when the students had higher levels of communication. Observed communication modalities varied broadly between dyads and included the use of low and high-tech assistive technology, such as tangible symbols and dynamic display voice output devices, and both visual and tactile sign language. Similar to other studies with learners with DB or multiple disabilities (Cascella, Bruce, & Trief, 2015; Trief, Cascella, &

Bruce, 2013), this sample was highly heterogeneous with no association between level of dual sensory loss or number of additional disabilities and students' expressive communication levels.

Teacher Matching and the Tactile Threshold

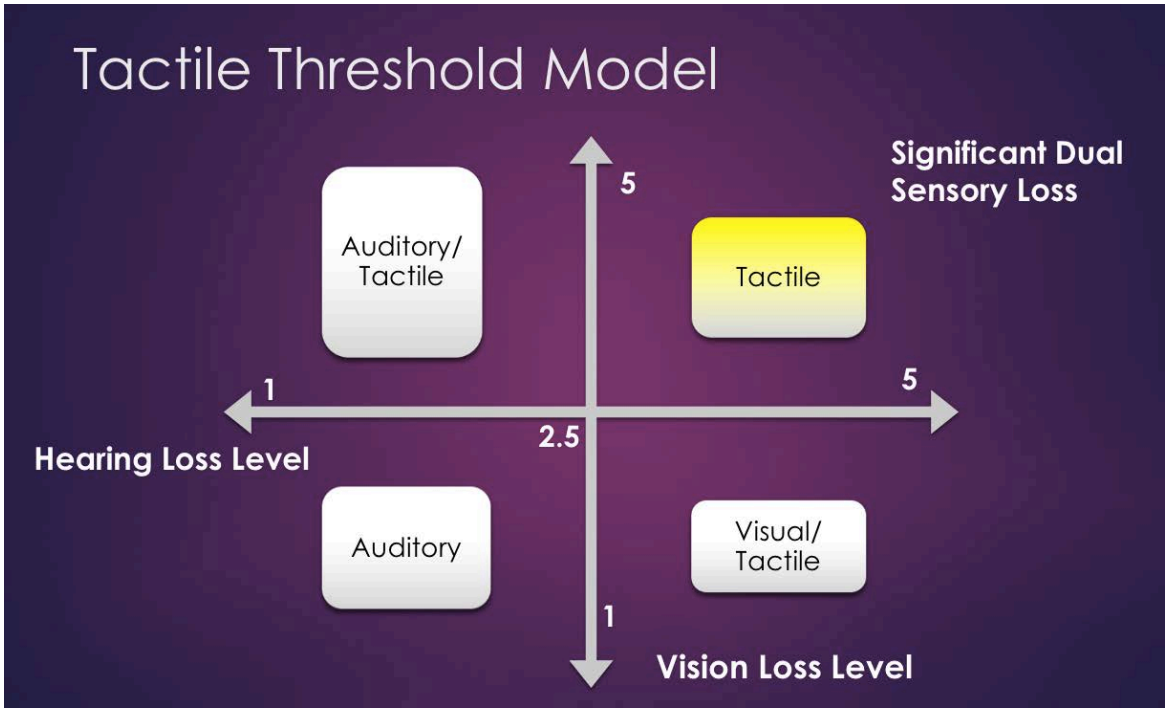
Given the finding that students who had teachers who matched their expected receptive forms had higher levels of expressive communication, teacher matching is potentially a promising way to increase students' communication growth. Teachers' communication either matched or did not match what a student's expected receptive communication modality would be depending on their rates of using tactile, verbal or visual forms in their classrooms and the student's level of dual sensory loss. Currently, there is no universally accepted way of scaling combined vision and hearing loss for research purposes or guiding provision of services. In this study, we scaled both severity of hearing and vision loss on a 1-5 scale and added these numbers to get a dual sensory loss scale of 2-10, with 10 representing total blindness and a profound hearing loss.

In order to make comparisons, a judgment call was made in our research that at a certain level of combined hearing and vision loss that a student's primary receptive mode of communication would be in a tactile form, referred to as a, "tactile threshold." The *tactile threshold* was set at a level 5 and above of dual sensory loss. Given that both his or her hearing and vision would both be

unreliable at that level, the student would be less likely to use speech as his or her primary mode of expressive communication.

Figure 1

Tactile Threshold Model



Note. Image is of an intersecting set of an x-axis labelled, "Hearing Loss Level," and a y-axis labelled, "Vision Loss Level," with the intersection labelled 2.5 and creating four quadrants. The end points for each axis are 1 and 5. Clockwise from the top left corner the quadrants are labelled, "Auditory/ Tactile," "Tactile" (highlighted in yellow) and "Significant Dual Sensory Loss," "Visual/ Tactile," and "Auditory."

Next, if a child was above a level 5 of dual sensory loss, but not primarily receiving tactile communication, the teacher was considered not matching the child's expected receptive modality. If the child was below a level 5 of dual sensory loss, then the primary communication modality would default to whether the hearing or vision loss was more significant. If the child had a more significant hearing loss than vision loss, visual communication would be considered a match. If the child had a more significant vision loss than a hearing loss, verbal communication would be considered a match. If the child's dual sensory loss was under a 4, but with equal levels of hearing and vision loss, either visual or verbal communication would be considered a match. Two distinct groups were formed in our sample, with 7 teachers who were considered matching and 8 teachers who were not considered matching.

The ultimate goal is for the teacher's communication to match the learner with DB's expected receptive modality, a modality he or she can fully access, while also modeling a modality that could potentially be used expressively by the student. A *tactile threshold* is a helpful way for teachers to think about how to support a learner with dual sensory loss and whether this matching is occurring. If adults in classrooms are not even modeling communication with the student's strongest modality in mind, then the student does not even have a chance to get in the communication game. Simply making teachers, paraprofessionals, and related

service providers aware of this need for matching through professional development could have the potential to improve students' communication growth. By reviewing video and data analysis, adults could become more proportionate in their use of tactile, visual and verbal communication modalities. Many teachers and additional staff members will also need additional training to learning the communication strategies that they observe in videos or read about, such as tactile sign language, as well as access to materials such as tangible symbols.

Conclusion

The important takeaway of the concept of a tactile threshold for teachers is to prompt thinking about whether students' are able to access the communication modalities used by classroom staff, as well as whether students can eventually expressively use those communication forms. Additionally, in order for more teacher matching to occur, adults that work with students with DB need specialized training in a variety of communication modalities and strategies. Training in ASL, one-on-one interveners that have specific training in deafblindness, state certification practices that require specific coursework in teaching symbolic communication (i.e. using tangible symbols), and classroom ratios that allow for close proximity of staff to students for communication will help teachers to be responsive to the tactile threshold and increase levels of symbolic communication in learners with DB.

References

Bruce, S. M., & Bashinski, S. M. (2017). The trifocus framework and interprofessional collaborative practice in severe disabilities. *American Journal of Speech -Language Pathology*, *26*(May), 162–180.

Cascella, P. W., Bruce, S. M., & Trief, E. (2015). Research report: Sign language, speech, and communication repair abilities by children with congenital deafblindness. *Journal of Visual Impairment & Blindness,* (April), 141–147.

Nelson, C., Van Dijk, J., McDonnell, A. P., & Thompson, K. (2002). A framework for understanding young children with severe multiple disabilities: The van Dijk approach to assessment. *Research & Practice for Persons with Severe Disabilities*, *27*(2), 97–111.

Rowland, C. (1990). Communication in the classroom for children with dual sensory impairments: Studies of teacher and child behavior. *AAC Augmentative and Alternative Communication*, 262–274.

Rowland, C. (2011). Using the communication matrix to assess expressive skills in early communicators. *Communication Disorders Quarterly*, *32*(3), 190–201. http://doi.org/10.1177/1525740110394651

Siegel-Causey, E., & Bashinski, S. M. (1997). Enhancing initial communication and responsiveness of learners with multiple disabilities: A Tri-Focus Framework for partners. *Focus on Autism and Other Developmental*

Disabilities, 12(2), 105–120.

Trief, E., Cascella, P. W., & Bruce, S. M. (2013). A field study of a standardized tangible symbol system for learners who are visually impaired and have multiple disabilities. *Journal of Visual Impairment & Blindness, 107(3), 180–192.*

**Data collection is currently on-going, please contact the author if you have any classrooms that would be interested in participating in this study.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Supporting Availability for Learning: Student-Centered Biobehavioral Assessment and Intervention for Children and Youth with Deafblindness/Multiple Disabilities

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In an article titled "Thoughts on the Assessment of the Student with the Most Profound Disabilities," published in a 1996 issue of the SEE/HEAR Newsletter (Texas School for the Blind and Visually Impaired), Robbie Blaha wrote:

> Since its inception of laws providing for the free and appropriate education for all students in this country our schools have seen a steady increase in the population of students who are considered to have the most profound disabilities. Although our willingness to serve these children is evident, our understanding of these students' educational needs, assessment and programming is still very much in its infancy. It is easy to feel we do not know what to do with these students. Developmental checklists and

assessment tools used with other populations are not often sensitive enough to provide usable information to those charged with the instruction of this type of student.

Almost twenty-five years later, Blaha's words are poignant and relevant to our field. Students with deafblindness represent the lowest incidence in the population of students with disabilities, yet they are the students with the most extensive individualized support needs. Teachers and related service providers who work with these students require unique expertise to provide appropriate educational interventions, and the use of standardized assessments alone is insufficient in guiding meaningful instruction (Ferrell, Bruce, & Luckner, 2015).

Why is assessment of availability for learning a critical area of need for our students?

While the total number of children and youth (hereafter, "children") with combined vision and hearing loss has remained relatively static over the past two decades, the population has shifted significantly to reflect an increase in the presence of additional disabilities. The 2018 National Deaf-Blind Child Count (NCDB, 2019) indicated that between 2005-2018, the percentage of children with deafblindness having four or more additional disabilities increased from 13.1% to almost 42%. The most common additional disabilities for children on the Child Count from 2013-2018 were: orthopedic/physical disabilities (59-61%),

intellectual/cognitive disabilities (65-68%), and complex health care needs (51-53%) (NCDB, 2019).

Children with multiple disabilities often have complex physical, sensory, developmental and health challenges which can have a significant impact on their "availability for learning." This term may be used generally to describe readiness or attention, but specifically, it refers to the *biobehavioral states* that are necessary in order to process information and experiences. *Biobehavioral states* encompass the combination of internal and external factors that influence the condition of a person at any particular moment (also referred to as “arousal” or “alertness”).

Guess and colleagues (1988; 1990) addressed the subject of biobehavioral state assessment for students with the most profound multiple disabilities in over 10 research studies between 1988-1996. Their Behavioral State Observation Scale (1988; 1993), adapted in part from Brazelton’s (1978) Neonatal Behavioral Assessment Scale and Wolff’s (1959) observations on infant arousal states, used nine major behavior state codes: Asleep-Inactive, Asleep-Active, Drowsy, Daze, Awake Inactive-Alert, Awake Active-Alert, Awake-Active/Stereotypy, Crying/Agitated, and Seizures (Richards & Richards, 1997). Munde et al.’s literature review (2009) analyzed a number of studies addressing “alertness in individuals with profound intellectual and multiple disabilities.” This review shows many subsequent adaptations of Guess’ scale and coding system, as well as varied

applications of intervention, from the impact of alternative/augmentative communication switches to the effectiveness of Snoezelen rooms on moderating alertness (Munde et al., 2009).

Analyzing patterns of behavior states for students with multiple disabilities, Arthur (2004) wrote, "…it could be argued that to be involved in a CI [communicative interaction], a participant must be awake and actively involved" (p. 137). For students with the most complex needs who struggle to maintain equilibrium, who may spend a significant amount of time throughout the day in drowsy or asleep states, or post-seizure, who have limited or no voluntary motor control, and use unconventional forms of communication, the educational team and family may find themselves asking: How do I know if the child is *available for learning*? How can I tell if the child is alert, attending, responsive or responding, processing or retaining information?

First, we must address the question: *What is learning?* "Learning" is a broad and generic term, and a standard definition does not answer the more fundamental question: *How do we know if a student is learning?* Simply put, learning is physical change in the brain. We are learning when the synapses in our brain are active, strengthening pathways and making new neural connections (Gaddum, 1966). When we have the opportunity to develop consistency and anticipation through repeated experiences and routines, neuron pathways are used repeatedly,

and the myelin sheathing that coats and protects these neural "highways" are strengthened. Blaha (1996) presented concrete, observable examples of learning, including: *habituation* (getting used to something, for example, a sound that used to make you startle, but now you don't notice); *association* (demonstrating understanding of the connection between objects or experiences, for example, associating a spoon with pudding); and, *surprise* ("a mismatch in expectations," for example, if the spoon is presented with no pudding and the child reacts with frustration).

Children who have multiple disabilities and/or deafblindness may struggle to maintain alertness throughout the school day for a variety of ecological reasons, including both internal and external influences (NCDB, n.d.). **Internal influences** include biophysical factors**,** such as the specific implications of a child's etiology (for example, the proprioceptive and vestibular dysfunction often experienced by children with CHARGE Syndrome [Brown, 2011]), sleep disorders common to children with congenital visual impairment, the impact of seizures and medication, and the child's history of experiences with unanticipated touch and physical manipulation (hand over hand instruction). Children with complex health care needs including central nervous system impairments may also have difficulty regulating and maintaining equilibrium. **External influences** on learning may include such environmental and ambient conditions as the temperature of the room,

lighting, the extent and type of physical interaction, positioning, and visual/auditory clutter (NCDB, n.d.). For children with cortical visual impairment (CVI) – now the main cause of visual impairment in children in the U.S. (Hatton, Ivy, & Boyer, 2013), affecting at least 30% of students with deafblindness (NCDB, 2019) – the impact of multisensory complexity (Complexity of the Sensory Environment) on visual processing can have an overarching impact on availability for learning (Roman-Lantzy, 2018).

Green et al. (1994) surveyed a group of educators working with children with multiple disabilities about the levels of alertness of their students, and how student alertness impacted teaching. While the teachers indicated almost unanimously that they preferred to conduct training when the student was alert, almost 70% reported postponing teaching due to non-alertness. The authors pointed out a potentially significant issue in educational programs serving students with multiple disabilities: "withholding training due to lack of student alertness" (Green et al., p. 520). Rather than postponing training altogether, the study suggests a more productive path: what can the educational team do to **promote alertness** when the child is not alert?

How do *you* moderate your biobehavioral state when you need to? Consider the experience of driving a car at night, and feeling drowsy**:** what do you do to make yourself more alert? You may roll the window down to let in the cool air

(tactile stimulation), or turn the radio up (auditory stimulation). Likely, the first thing you do, without even thinking about it, is to shift your position and sit up straight. Your ability to deliberately enact these changes helps to regulate your biobehavioral state. Students with multiple disabilities have significantly reduced ability to elicit or achieve the sensory input, environmental and physical conditions needed to calm themselves when agitated, or to alert themselves when drowsy. Figure 1 shows examples of alerting and calming stimuli for individuals with typically developing sensory channels and central nervous systems. It is important to recognize that children with multiple disabilities, depending on their etiologies and experiences, may have different responses to sensory input. See Morgan (2004; http://www.tc.columbia.edu/i/a/1719_NYSTAPResourceBioBehavioralStates.pdf) for more information on calming/alternating stimuli.

How can we support meaningful intervention to increase availability for our students?

Individualized assessment is the first step toward understanding the child's unique needs in promoting availability for learning. Figure 1 presents several assessments for gathering child-centered background information supporting biobehavioral assessment and intervention.

Figure 1. Assessments for Students with Multiple Disabilities/Deafblindness

Assessment	Domains and comments
The Communication Matrix (Rowland, 1996; Rev., 2004) www.communicationmatrix.org	Expressive communication development, from pre-intentional behaviors to language
Likes/Dislikes (WSDS, n.d.)	Detailed informal preferences assessment
Adapted Sensory Channel Form (Anthony, 1997)	Adapted version of Koenig and Holbrook's (1995) Sensory Channel Form, expands upon the practice of learning media assessment for students with multiple disabilities
Child-Guided Strategies: The van Dijk Approach to Assessment (Nelson et al., 2009)	Comprehensive framework for individualized assessment, including information on communication, sensory learning channels, and concept development
HomeTalk: A Family Assessment of Children who are Deafblind (Bringing It All Back Home Project, 2003)	Extensive guided template for a family-centered profile of the child, including information on preferences, sensory status and etiology, communication, habits and routines, and development across domains
CVI Range (Roman-Lantzy, 2007; Rev. 2018)	Comprehensive functional vision assessment for students with cortical visual impairment (CVI)
Informal Functional Hearing Evaluation (IFHE) (TSBVI, n.d.)	Detailed functional evaluation of the impact of hearing loss on access to educational environments and communication

Thorough biobehavioral state assessment, though partly integrated into other assessments, mostly remains a formal process given the Behavioral State Observation Scale (Guess et al., 1988; 1993), The Carolina Record of Individual Behavior (Simeonson et al, 1982), or Analyzing Behavior State and Learning Environment (Ault et al., 1995). In contrast, Smith and Shafer (n.d.) provided highly functional and user-friendly examples of the application of formal

biobehavioral assessment to an educational environment for the purpose of guiding collaborative team intervention for students with visual impairments and multiple disabilities.

Inspired by the model provided by Smith and Shafer, and the work of Blaha and others in asserting the critical importance of biobehavioral assessment on promoting availability for students with the most profound and complex disabilities, an updated assessment tool was created: "Assessment of Biobehavioral States: Supporting Availability for Learning for Students with Multiple Disabilities including Deafblindness & Profound Intellectual & Multiple Disabilities" (The full tool can be accessed at http://bit.ly/availabilityassessmenttool). This assessment is geared specifically toward supporting child-centered intervention for learners with deafblindness and/or profound multiple and intellectual disabilities who struggle to maintain availability for learning for a variety of reasons. The tool uses Guess et al.'s (1988; 1993) coding systems for behavioral states and environmental input partially adapted by Arthur (2004), with additions to the protocol including positioning and interactional considerations (for example, the use of *hand under hand* versus *hand over hand* interaction). Significantly, the tool includes detailed forms and resources for conducting the evaluation and using the results to guide intervention, and an expanded protocol designed to obtain information relevant to students with deafblindness and complex health care needs.

A primary aim of this tool is to connect the results of previous research on biobehavioral states with the myriad promising practices from the field of education for children and youth with deafblindness. The Guidelines for Recommendations page (Russell, p. 7) includes many areas to consider for potential intervention, from changes to the biophysical management plan and the student's schedule, to the use of specific communication techniques such as touch cues, name cues, tangible symbols, and strategies promoting active learning. In order for the results of biobehavioral assessment to effectively impact intervention, it is essential that the collaborative team possess a strong skill set in both responsiveness and affective involvement (Martens et al., 2014) and in the use of "shared forms of communication" between the communication partner and the student who uses unconventional or presymbolic forms of communication (Bruce, 2003).

All of these evolving approaches emphasize the critical need for ongoing training of educational teams, including paraprofessionals and interveners, in research-based and promising practices that may support a child's increased availability for learning. The Open Hands, Open Access (OHOA) Deaf-Blind Intervener Modules (NCDB, n.d) cover extensive content areas in deafblindness, and include an entire training module on Availability for Learning. Availability for Learning remains a critical area of need for students with multiple disabilities and

deafblindness, and this need is reinforced by trends in the population which continue to reflect an increase in prevalence and severity of multiple disabilities (NCDB, 2019). While the literature supporting communication practices is rich, there is a continued need for research connecting the implementation of assessments with the use of research-based and promising practices for intervention, and in effective practices for training collaborative teams.

References

Anthony, T. (1997). Adapted version of Koenig and Holbrook's Sensory Channel Form. Retrieved from https://cms-pattan-live.ae-admin.com/getmedia/cae8b6e3-e958-43ba-90ad-f4e11000ee7f/6russpm_devfunctroutines

Ault, M. M., Guy, B., Guess, D., Bashinski, S., & Roberts, S. (1995). Analyzing behavior state and learning environments: Application in instructional settings. *Mental Retardation*, *33*(5), 304.

Arthur, M. (2004). Patterns amongst behavior states, sociocommunicative, and activity variables in educational programs for students with profound and multiple disabilities. *Journal of Developmental and Physical Disabilities*, *16*(2), 125-149.

Blaha, R. (1996). *Thoughts on the assessment of the student with the most profound disabilities*. SEE/HEAR Newsletter. Texas School for the Blind and Visually Impaired. Retrieved March, 2020 from http://tsbvi.edu/203-resources/4383-thoughts-on-the-assessment-of-the-student-with-the-most-profound-disabilities-2

Brazelton, TB (1978). The Brazelton neonatal behavior assessment scale: Introduction. *Monographs of the Society for Research in Child Development*. 43 (5–6), 1–13.

Bringing it All Back Home Project (2003). Home talk: A family assessment of children who are deafblind. Design to Learn Project, Oregon Health and Science University. Retrieved March, 2020 from http://www.designtolearn.com/uploaded/pdf/HomeTalk.pdf

Brown, D. (2011). Deafblindness, self-regulation, and availability for learning: Some thoughts on educating children with CHARGE syndrome. ReSources, California Deaf-Blind Services, 16(3), 1-7. Retrieved March, 2020 from http://files.cadbs.org/200001770-3277333721/EducatingCHARGE.pdf

Bruce, S. M. (2003). The importance of shared communication forms. *Journal of Visual Impairment & Blindness*, *97*(2), 106-109.

Gaddum, J. H. (1966). The neurological basis of learning. In *Aspects of Learning and Memory* (pp. 38-72). Butterworth-Heinemann.

Green, C. W., Gardner, S. M., Canipe, V. S., & Reid, D. H. (1994). Analyzing alertness among people with profound multiple disabilities: Implications for provision of training. *Journal of Applied Behavior Analysis*, *27*(3), 519-531.

Guess, D., Ault, M., Roberts, S., Struth, J., Siegel-Causey, E., Thompson, B., Bronicki, G. J. B., & Guy, B. (1988). Implications of biobehavioral states for the education and treatment of students with the most profoundly handicapping conditions. *Journal of the Association for Persons with Severe Handicaps*, *13*, 163-174.

Guess, D., Siegel-Causey, E., Roberts, S., Rues, J., Thompson, B., & Siegel-Causey, D. (1990). Assessment and analysis of behavior state and related variables among students with profoundly handicapping conditions. *Journal of the Association for Persons with Severe Handicaps*, *15*, 211-230.

Guy, B., Guess, D., & Ault, M. (1993). Classroom procedures for the measurement of behavior state among students with profound disabilities. *Journal of the Association for Persons with Severe Handicaps*,*18*, 52-60.

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.

Martens, M. A., Janssen, M. J., Ruijssenaars, W. A., & Riksen-Walraven, J. M. (2014). Introducing an intervention model for fostering affective involvement with persons who are congenitally deafblind. *Journal of Visual Impairment & Blindness*, *108*(1), 29-41.

Morgan, S. (2004). Biobehavioral states. [Slide Presentation] Hunter College SPED 746. Retrieved March, 2020 from http://www.tc.columbia.edu/i/a/1719_NYSTAPResourceBioBehavioralStates.pdf

National Center on Deafblindness (NCDB). (2019). The 2018 national deaf-blind child count. Retrieved March, 2020 from https://www.nationaldb.org/info-center/national-child-count/

National Center on Deafblindness (NCDB). (n.d.). Availability for learning. The Open Hands, Open Access (OHOA) Deaf-Blind Intervener Learning Modules. Retrieved March, 2020 from https://www.nationaldb.org/products/modules/ohoa/availability-for-learning

The National Technical Assistance Consortium for Children and Youth who are Deaf-Blind. (2006). The 2005 national child count of children and youth who are deaf-blind. Retrieved March, 2020 from https://documents.nationaldb.org/products/2005-Census-Tables.pdf

Nelson, C., van Dijk, J., Oster, T., & McDonnell, A. P. (2009). *Child-guided Strategies: The Van Dijk Approach to Assessment: for Understanding Children and Youth with Sensory Impairments and Multiple Disabilities*. American Printing House for the Blind, Incorporated.

Richards, S., & Richards, R. (1997). Implications for assessing biobehavioral states in individuals with profound disabilities. *Focus on Autism & Other Developmental Disabilities*, *12*(2), 79-86.

Richards, S., & Sternberg, L. (1993). Corroborating previous findings: Laying stepping stones in the analysis of biobehavioral states in students with profound disabilities. *Education and Training in Mental Retardation*, *28*(3), 262-268.

Roman-Lantzy, C. (2018). *Cortical visual impairment: An approach to assessment and intervention* (2nd Ed.). American Foundation for the Blind.

Rowland, C. (1996; Rev., 2004). Communication matrix: A communication skill assessment. Oregon Health Sciences University.

Russell, C. (2020). Assessment of biobehavioral states: Supporting availability for learning for students with multiple disabilities including deafblindness and profound intellectual and multiple disabilities. New York Deaf-Blind Collaborative.

Simeonsson, R. J., Huntington, G. S., Short, R. J., & Ware, W. B. (1982). The Carolina record of individual behavior: Characteristics of handicapped infants and children. *Topics in Early Childhood Special Education*, *2*(2), 43-55.

Smith, M., & Shafer, S. (n.d.). Assessment of biobehavioral states and analysis of related influences. Texas School for the Blind and Visually Impaired. Retrieved March, 2020 from http://www.tsbvi.edu/component/content/article/98-assessment/1266-assessment-of-biobehavioral-states-and-analysis-of-related-influences

Sternberg, L., & Richards, S. (1989). Assessing levels of state and arousal in individuals with profound handicaps: A research integration. *Journal of Mental Deficiency Research*, *33*, 381-387.

Spangler, G., & Grossman, K. E. (1993). Biobehavioral organization in securely and insecurely attached infants. *Child Development*, *64*, 1439-1450.

Texas School for the Blind/Visually Impaired Outreach Team (TSBVI) (n.d.). Informal functional hearing evaluation. Retrieved March, 2020 from https://www.tsbvi.edu/images/outreach/Documents/IFHEDocument-NCDB.pdf

Washington Sensory Disability Services (WSDS) (n.d.). Likes/dislikes. Retrieved March, 2020 from https://www.wsdsonline.org/wp-content/uploads/2016/09/WebLikesDislikesRevDec-12.pdf

Wolff, P. H. (1959). Observations on newborn infants. *Psychosomatic Medicine*, *21*, 110-118.

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A Curriculum for Teaching Job Search Skills to Youth with Visual Impairments

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Helping students prepare to transition from school to the workplace is a key focus of teachers of students with visual impairments. Research has been conducted to identify factors associated with success after high school, and one factor consistently found to predict post-high school employment is early work experiences (Mazzotti et al., 2016; McDonnall, 2010, 2011; McDonnall & Crudden, 2009; Test et al., 2009; Wehman et al., 2015). Additional research has documented that the type of work experience matters; in other words, not all work experiences may have equal positive impacts on future employment. A study of work experience programs indicated that results are mixed for the effectiveness of these programs for youth with barriers to employment and that all programs with

strong impacts included additional components such as job search assistance (Sattar, 2010). Research documents that school-sponsored work experiences are not associated with future employment for youth with visual impairments (McDonnall, 2010; McDonnall & O'Mally, 2012), and that finding jobs independently is beneficial for youth (Doren & Benz, 1998; McDonnall & O'Mally, 2012).

Schools and vocational rehabilitation (VR) agencies have traditionally offered short-term work experiences for youth with visual impairments. These work experiences typically consist of paid or unpaid jobs that youth perform for one to six weeks in a position in the school or agency or the community. For paid work experiences, the youth is typically paid by the agency rather than by the employer. These work experiences do not usually involve searching for the position; positions are instead given to the youth without any effort required on the youth's part. Despite the lack of evidence for the effectiveness of sponsored work experiences, many VR agencies provide them, particularly after the passage of the Workforce Innovation and Opportunity Act of 2014 (U.S. Department of Labor, 2016) in which work-based learning experiences are specified as one of the essential pre-employment transition services. It is important that youth with visual impairments have the opportunity to participate not just in sponsored work experiences, but in real paid jobs and preferably jobs that they find themselves.

Job search interventions are meant to help people learn how to find jobs on their own, and many such interventions have been implemented. According to a meta-analysis of 47 experimental and quasi-experimental studies, job search interventions can be effective if they include six critical components (i.e., teaching job search skills, improving self-presentation, boosting self-efficacy, encouraging proactivity, promoting goal setting, and enlisting social support; Liu, Huang, & Wang, 2014). Research supports the benefits of youth with visual impairments learning how to find jobs on their own (McDonnall & O'Mally, 2012), and these youth may receive some job search instruction through transition programs (Lewis, Bardin, & Jorgensen-Smith, 2009) and pre-employment programs (e.g., McMahon, Wolffe, Wolfe, & Brooker, 2013; Royal National Institute of Blind People, 2014). However, no published studies of job search interventions for youth with visual impairments were identified, indicating that little to no research has been conducted to determine effective job search skills programs, methods, or curricula for this population. Thus, we developed a job search skills training program called *Putting Your Best Foot Forward* and examined its effectiveness.

Our Program

Background

Putting Your Best Foot Forward is a structured, intensive job search skills training program for groups of approximately 10-15 transition-age youth with visual impairments. It is based on the School to Work program (Koivisto, Vuori, & Nykyri, 2007; Koivisto, Vuori, & Vinokur, 2010), which was based on the JOBS program (Curran, Wishart, & Gingrich, 1999). These programs have extensive evidence of effectiveness for unemployed adults (Caplan, Vinokur, Price, & van Ryn, 1989; Vinokur, Price, Caplan, van Ryn, & Curran, 1995; Vinokur, Schul, Vuori, & Price, 2000; Vinokur, van Ryn, Gramlich, & Price, 1991) and transition-age youth (Koivisto et al., 2007, 2010). We modified the School to Work program by adding content specific to youth with visual impairments (e.g., disclosing your visual impairment, preparing a statement about your visual impairment), removing some existing content, and adding individual activities. We based our program on these existing programs because they have strong empirical evidence for effectiveness, a strong theoretical foundation, and include the six critical components identified by Lui et al. (2014). A unique characteristic of these programs is the six principles or learning processes that are key to their implementation, including active learning, social support, and increasing self-

efficacy.

Content

Putting Your Best Foot Forward includes about 40 hours of content across five units (listed in Table 1). The program content addresses career education and several other areas of the Expanded Core Curriculum, such as independent living skills (e.g., dress and grooming for an interview), social interaction skills (e.g., nonverbal communication, body language), and self-determination (e.g., problem-solving, self-awareness). Two trainers deliver the content through a series of group sessions and individual activities (see Table 1 for examples). During the group sessions, youth learn job search skills through interactive activities such as discussions, small-group exercises, brainstorming, and role play exercises, which give all youth opportunities to contribute and share their knowledge and experiences. The individual activities allow youth to practice their newly-learned skills in a supportive environment. Throughout the program, youth develop strategies to overcome employment barriers, get social support and encouragement from adults and peers, and increase their confidence in their ability to find a job on their own.

Table 1
Examples of Group and Individual Activities for Each Unit of Putting Your Best Foot Forward

Unit	Unit Title	Group Activities	Individual Activities
1	Strengths and skills that employers want	In small groups, youth evaluate three completed job applications from the employer's perspective and select one applicant they would interview.	Youth complete a personal data sheet and practice filling out job applications.
2	Selling your strengths and skills to an employer	Taking the employer's point of view, youth brainstorm features of a good resume.	Youth write a personal statement about their visual impairment and begin developing their resumes.
3	Finding job vacancies	Trainers and youth discuss different sources of information about job vacancies, and trainers use role play examples to model calling personal contacts for job leads.	Youth call their personal contacts to inquire about job leads and search for job openings on the Internet.
4	Preparing for a job interview	In a group setting, youth interview an employer to increase their knowledge about interview and hiring processes.	Youth prepare responses to open-ended questions to commonly asked interview questions.
5	Conquering the job interview and next steps	Youth interview each other using a role play exercise, and they identify accommodations for specific jobs.	As a culminating activity, youth complete two interviews with employers.

Target Audience and Implementation

The target audience for *Putting Your Best Foot Forward* is youth with visual impairments, ages 15-22 years, who have little to no previous paid work experience but are ready for a job. The program can be used with diverse, heterogeneous groups of youth with differing skills and experiences. However, ideal candidates for participation have done some career exploration activities, can perform basic word processing tasks, have experience using the Internet, and are

comfortable interacting in a group setting with their peers. *Putting Your Best Foot Forward* is suitable for implementation in various settings, including schools, private agencies, and VR agencies. It was designed as an intensive, short-term standalone program (e.g., five 8-hour days, ten 4-hour days), but it can be implemented as part of a larger transition program or a semester course if a short, intensive format is not the best fit for a particular group.

Effectiveness

We conducted a research study with 92 transition-age youth with visual impairments to evaluate the effectiveness of *Putting Your Best Foot Forward* in improving both short-term and long-term outcomes. We partnered with one VR agency and three specialized schools for children who are blind to implement the program in three states. Some youth in our study participated in *Putting Your Best Foot Forward*, and some received usual services. Our findings support *Putting Your Best Foot Forward*'s effectiveness in improving short-term outcomes; youth increased their knowledge about searching for jobs, job search behaviors (e.g., contacting employers, filling out applications), and confidence in their ability to accomplish specific job search behaviors (Cmar & McDonnall, 2020). Our research study has also underscored several potential negative consequences of offering repeated work experiences to youth who are capable of searching for a job

on their own, such as lack of distinction between work experiences and paid jobs, and reduced motivation to search for and accept paid jobs (Cmar, 2019). Longitudinal analyses are in progress to evaluate long-term outcomes, including job obtainment.

Implications

Instead of offering repeated short-term work experiences to youth with visual impairments, we recommend a progression of activities where youth gradually increase their level of responsibility for finding paid jobs as they develop the corresponding skills. This progression could begin with youth participating in a limited number of work experiences, so they have the opportunity to get hands-on experiences with various jobs—but do not stop there. Next, teach youth how to find a job on their own using *Putting Your Best Foot Forward* or another method. Finally, encourage youth to put their skills into action by searching for a job on their own. Be sure to give them adequate support during the job-seeking process, but gradually reduce that support as they build their skills, gain experience, and increase their confidence.

The *Putting Your Best Foot Forward* curriculum is now available as a free resource from The National Research and Training Center on Blindness and Low Vision. Practitioners can gain access to the curriculum and become a *Putting Your*

Best Foot Forward trainer by completing a trainer workshop that focuses on implementation techniques (e.g., group training techniques and learning processes). This free, two-day workshop is for service providers who work with youth with visual impairments, including but not limited to teachers of students with visual impairments, vision rehabilitation therapists, and VR agency staff. Please contact the first author or email nrtc@colled.msstate.edu for more information about the trainer workshop.

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References

Caplan, R. D., Vinokur, A. D., Price, R. H., & van Ryn, M. (1989). Job seeking, reemployment, and mental health: A randomized field experiment in coping with job loss. *Journal of Applied Psychology*, *74*(5), 759–769.

Cmar, J. L. (2019). Unintended consequences of repeated sponsored work experiences for youths with visual impairments. *Journal of Visual Impairment & Blindness*, *113*(6), 566–568.

Cmar, J. L., & McDonnall, M. C. (2020). Short-term effectiveness of job search skills training: Comparisons by summer work experience participation. *Rehabilitation Counseling Bulletin*, Advance online publication. doi:10.1177/0034355220910225

Curran, J., Wishart, P., & Gingrich, J. (1999). *JOBS: A manual for teaching people successful job search strategies*. Michigan Prevention Research Center, Institute for Social Research, University of Michigan.

Doren, B., & Benz, M. R. (1998). Employment inequality revisited: Predictors of better employment outcomes for young women with disabilities in transition. *Journal of Special Education*, *31*(4), 425–442.

Koivisto, P., Vuori, J., & Nykyri, E. (2007). Effects of the School-to-Work group method among young people. *Journal of Vocational Behavior*, *70*(2), 277–296.

Koivisto, P., Vuori, J., & Vinokur, A. D. (2010). Transition to work: Effects of preparedness and goal construction on employment and depressive symptoms. *Journal of Research on Adolescence*, *20*(4), 869–892.

Lewis, S., Bardin, J., & Jorgensen-Smith, T. (2009). After one year: Self-reported transition skills of teens with visual impairments. *AER Journal: Research and Practice in Visual Impairment and Blindness*, *2*, 84–96.

Liu, S., Huang, J. L., & Wang, M. (2014). Effectiveness of job search interventions: A meta-analytic review. *Psychological Bulletin*, *140*(4), 1009–1041.

Mazzotti, V. L., Rowe, D. A., Sinclair, J., Poppen, M., Woods, W. E., & Shearer, M. L. (2016). Predictors of post-school success: A systematic review of NLTS2 secondary analyses. *Career Development and Transition for Exceptional Individuals*, *39*(4), 196–215.

McDonnall, M. C. (2010). Factors predicting post-high school employment for young adults with visual impairments. *Rehabilitation Counseling Bulletin*, *54*(1), 36–45.

McDonnall, M. C. (2011). Predictors of employment for youths with visual impairments: Findings from the Second National Longitudinal Transition Study. *Journal of Visual Impairment & Blindness*, *105*(8), 453–466.

McDonnall, M. C., & Crudden, A. (2009). Factors affecting the successful employment of transition-age youths with visual impairments. *Journal of Visual Impairment & Blindness*, *103*(6), 329–341.

McDonnall, M. C., & O'Mally, J. (2012). Characteristics of early work experiences and their association with future employment. *Journal of Visual Impairment & Blindness*, *106*(3), 133–144.

McMahon, J. M., Wolffe, K. E., Wolfe, J., & Brooker, C. (2013). Maine's employability skills program. *Journal of Visual Impairment & Blindness*, *107*(6), 515–522.

Royal National Institute of Blind People. (2014). *Pre-employment programme*. Retrieved from https://www.rnib.org.uk/services-we-offer-advice-professionals-employment-professionals/pre-employment-programme

Sattar, S. (2010). *Evidence scan of work experience programs*. Oakland, CA: Mathematica Policy Research.

Test, D. W., Mazzotti, V. L., Mustian, A. L., Fowler, C. H., Kortering, L., & Kohler, P. (2009). Evidence-based secondary transition predictors for improving postschool outcomes for students with disabilities. *Career Development for Exceptional Individuals*, *32*(3), 160–181.

U.S. Department of Labor. *Workforce Innovation and Opportunity Act of 2014*. 81 Fed. Reg. 55630 (2016).

Vinokur, A. D., Price, R. H., Caplan, R. D., van Ryn, M., & Curran, J. (1995). The Jobs I preventive intervention for unemployed individuals: Short- and long-term effects on reemployment and mental health. In L. R. Murphy, J. J. Hurrell, Jr., S. L. Sauter, & G. P. Keita (Eds.), *Job stress interventions* (pp. 125–138). American Psychological Association.

Vinokur, A. D., Schul, Y., Vuori, J., & Price, R. H. (2000). Two years after a job loss: Long-term impact of the JOBS program on reemployment and mental health. *Journal of Occupational Health Psychology*, *5*(1), 32–47.

Vinokur, A. D., van Ryn, M., Gramlich, E. M., & Price, R. H. (1991). Long-term follow-up and benefit-cost analysis of the JOBS Projects: A preventive intervention for the unemployed. *Journal of Applied Psychology*, *76*(2), 213–219.

Wehman, P., Sima, A. P., Ketchum, J., West, M. D., Chan, F., & Luecking, R. (2015). Predictors of successful transition from school to employment for youth with disabilities. *Journal of Occupational Rehabilitation*, *25*(2), 323–334.

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