
Request to participate in *Supporting Children with Complex Communication Needs* Workshop

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Request to participate

This workshop presents a unique opportunity to share with and learn from a group of researchers and practitioners who work on technologies to support children with complex communication needs. This goal of the workshop closely aligns with my current research in developing technologies and interfaces that support teachers and parents to easily and efficiently create unique and easily replicable tactile graphics for children with visual impairments (0-4 years old). A young child with visual impairments, and often times other cognitive or language impairments, typically requires additional support in developing tactile acuity and developing emergent literacy skill, including communication.

Emergent literacy is the process in which a child constructs concepts about the functions of symbols and print, and is based on experiences and meaningful language facilitated by interactions with adults. Emergent literacy skills start to develop just after birth. Developing emergent literacy skills and attitudes within children with visual impairments is critical to cultivating their lifelong ability to construct concepts about the function of symbols, develop

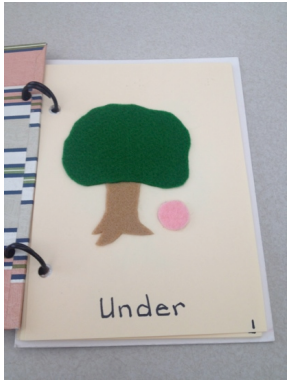


Figure 1. Handmade Tactile Picture Book; note the concept of under as the important part of the tactile graphic.



Figure 2. Site visits at Anchor; reading a tactile picture book with a parent and child, and a TVI.

tactile acuity, and language about their understanding of this learning.

Like early reading experiences with any child, books provide a medium for interaction between a parent and their child. Co-reading experiences enable parents and children to make emotional bonds, relate to one another about their surrounding environments, new environments, objects, and relationships, as well as expand creativity and vocabulary and instigate new conversations. Furthermore, these interactions inform parents about their child's learning needs, styles, and progression into literacy.

While the end-user of this research is ultimately the child, I have found, through contextual inquiry, observations, and the use of design probes at a preschool for the blind, that the ability of a child living with a visual impairments to learn emergent literacy skills is related to the selection and use of content that is appropriate to keeping the child's attention, as well as helping parents understand their child's experience.

For children born with or who acquire visual impairments, co-reading experiences require an additional layer of tactile information to make the content of books relatable, and the object of conversation between a parent and a child. Tactile picture books also aid in the development of a child's tactile acuity, their sense of seeing or feeling of their environment, as well as the confidence to explore build communicate about these experiences.

To develop tactile graphics one needs to translate a graphic image into a tactile image in a way that a child natively relates to the content or is able to associate the represented object to the real world experience.

This represents a key communication challenge that a parent or TVI faces while selecting and developing tactile content or books for a child, and ultimately their co-reading experiences and other interactions.

The transcription process is often time and resource intensive, and requires experience with digital software and/or handcraft skills. For example, many considerations need to be made prior to starting the craft process, which often times prohibits parents from making their own books. At the highest level, parents first need to identify whether their aim is to communicate tactile information in meaningful ways, or their aim is to communicate information in ways that can be understood through touch.

Through participating in this workshop, I hope to share these and other insights I have learned through engaging with children with visual impairments and their parents as well as the teachers of the visually impaired. I also hope to share insights and design ideas about communication tools for all stakeholders involved in supporting a child, including a multimedia media tool that enhances communication between teachers and parents about the child's unique learning experiences and milestones, 3D modeling environment that simplifies the tactile graphic modeling and manufacturing process, and 3D tactile graphics that provide additional feedback to parents and TVIs about their child's engagement with the content in the tactile graphic and story.

Much of the premise of my research rests on the fact that children with disabilities are unique and require tools and resources that can adapt to support their learning and ability to communicate their needs and desires. Additionally, these tools and resources should

aid the child's support community. Through participating in this workshop I hope to learn how other researchers are developing technologies conceived to address, synergistically, the needs of children, parents, and teachers. I would also like to learn how others have worked with young children to understand their needs, and subsequently developed and adapted assessment protocol for user testing.

Research related to literacy and communication enhancing technologies in the field of visual impairment is rare due to the low-incidence nature of visual disability, which often limits the research design that can be utilized and the conclusions that can be drawn. Lastly, I am interested in discussing how other researchers validate their findings from case studies and other methods, to inform the technical design requirements. I look forward to joining this community!