



Compensation Costs

PSU's Center for Public Service develops software government agencies use to calculate the cost of personnel services.

eLearning

GSE faculty members embark on new projects developing eLearning platforms to meet the needs of underserved communities.

Heart Health

NIH awards PSU startup Elex Biotech \$1.52M to develop and test new compounds that treat heart failure.

“We’re really excited about this approach,” said Dr. Sennott. “Not only do we expect to see kids acquire basic literacy and communication skills and increase their readiness for kindergarten, we also think the online platform and book finder will be useful for other projects we hope to find federal, state, and foundation funding for in the future.”

In the coming months, Dr. Sennott and his team will invite 35 family members of children with developmental disabilities and 35 early childhood service provider professionals to PSU to participate in a full day inclusive shared storybook reading training session. These 70 individuals will help the team shape and refine the training, gain experience using the online platform and resources, and leave PSU as project evangelists equipped with books to read to children and information about how to participate in the project, which they will be able to pass along to friends and family in their communities and beyond.

“The goal is to help kids gain the reading experiences and skills they’ll need to

communicate with others and get ready to enter the school system,” Dr. Sennott said. “We want their parents to read to them more frequently, for longer, and in the most engaged way possible.”

The innovative online approach will give Oregonians across the state new resources at their fingertips to engage and develop early literacy skills. The goal is to reach over 2,500 Oregon children and their families, with the possibility of expanding the project to serve anyone with Internet access.

“I believe shared reading is a fundamental experience missing from the lives of so many kids,” Dr. Sennott said. “With the right training and technology, we can extend that foundation to include children with complex communication needs. And all we have to do to achieve that is reach the adults in these kids’ lives. That’s what this project is focused on, and that’s what we want to do in the uLab: develop and use technologies for research and projects with the potential for major impacts in the real world.”

Dr. Sennott and his junior faculty colleagues



Dr. Samuel Sennott

continue a long tradition of updating PSU’s community engagement mission with the latest technological innovations. In this case, the results will be expanded opportunities for disabled children and their families to benefit from reading, first throughout Oregon, and later around the world.

Creating 21st Century Tools to Support Braille Learners

Creating 21st Century Tools to Support Braille Learners

By Shaun McGillis

For most sighted people, braille is a curious bumpy code encountered on elevators, at street crossings and outside hotel rooms. For many of the visually impaired, however, braille opens a unique doorway to a world they would otherwise be much less able to navigate. In the early 1990s, five English-speaking countries adopted a major simplification, referred to as the Unified English Braille (UEB) system, as their national standard. In 2016, the U.S. will join this group, requiring many people to essentially learn a new language. The transition will occur on January 6, the birthday of Louis Braille, French inventor of the system.

The **National Federation of the Blind** estimated in 2012 that there were over 6.2 million visually-impaired, working-aged adults in the U.S., including 83,500 in Oregon (National Federation of the Blind, 2014). Portland State University serves 59 students who are blind or visually impaired. Whether or not these individuals already use the outgoing code, learning UEB will be important if they want to compete in the job market, succeed in higher education, apply for a passport, or cast a vote in an election. UEB literacy will also be critical for professionals and service providers like pre- and in-service teachers, and family members of the visually impaired, all of whom play essential support roles in increasing the use of braille. With the transition date just over the horizon, researchers at PSU are building infrastructure to support efforts to make adult readers and educators proficient in UEB.

Professor Holly Lawson, Coordinator of the Visually Impaired Learner Program in the Department of Special Education, leads the team developing a web-based platform that will aid adult braille users, parents of children who are visually impaired, as well as the professionals who serve them. To accomplish these tasks, Lawson and co-investigators Assistant Professor Samuel Sennott (Special Education) and Associate Professor Christof Teuscher (**Electrical and Computer Engineering**) have partnered with community members, local and national



Dr. Holly Lawson



organizations, and experts in the field on a five-year “Unified English Braille through a Powerful and Responsive eLearning Platform” project, or UEB PREP.

UEB PREP will go beyond current braille instructional tools and infrastructure such as transcription manuals, webcasts, and textbooks. While Lawson acknowledges the important role these standard materials continue to play in instruction, she and the rest of the team are eager to explore new approaches. These include interactive, responsive eLearning, gamification, and social networking, all of which are accessible in classrooms, at home, or anywhere, anytime using mobile devices. At the center of UEB PREP is an online platform where users from Oregon and beyond will be able learn at their own pace through study and play and share their progress with others, while a community of educators create, assess and share content and researchers gather data to continually improve the user experience.

“This is going to be a big transition and it’s going to affect a lot of people,” Dr. Lawson said. “Our goal is to help adult learners make that transition and increase braille literacy. To do that we want to create something engaging, a place where users can learn interactively in an adaptive environment, reinforce and develop skills through play, get immediate feedback on their progress, support one another in an online community, and gain the ability to succeed in education and employment.”

Statistics show that less than ten percent of persons considered legally blind are braille readers (Jernigan Institute, 2009). Meanwhile, a mere 38 percent of visually impaired adults aged 21-64 are employed, 19 percent have attained a Bachelor’s degree or higher, and 32 percent live below the poverty line (National Federation of the Blind, 2014). Research has connected braille literacy to higher employment rates, income and education (Ryles, 1996). There is thus an urgent need for evidence-based, 21st century educational materials, tools, and support systems to increase braille literacy among adults and extend the reach and capacity of

educators and service providers now and after the implementation of UEB in the U.S. Lawson and her UEB PREP collaborators are working to fill that gap.

The project, supported by a five-year grant from the U.S. Department of Education, aims to initially serve 500 blind and visually impaired adults, current and future educators, and service providers by the end of 2015. This will ramp up to 10,000 users by the end of year five, Lawson noted. The hope is that it will eventually become a thriving, self-sustaining platform capable of meeting the needs of English-speaking UEB teachers and learners wherever an Internet connection exists.

The ultimate goals of the program are to increase the usage of UEB and promote the development of skills that will help visually impaired adults succeed in education and employment. If successful, UEB PREP has the potential to improve the overall quality of life for millions in the U.S. and abroad, while expanding PSU’s portfolio of online learning tools already reaching people throughout the world.

National Federation of the Blind, (2014, August 6). *Blindness Statistics*. Retrieved from: <https://nfb.org/blindness-statistics>
Jernigan Institute. (2009). *The Braille Literacy Crisis in America*. Baltimore: National Federation of the Blind. Retrieved January 7, 2015.
Ryles, R. (1996). The impact of braille reading skills on employment, income, education, and reading habits. *Journal of Visual Impairment and Blindness*, 219-226.