Educational Software Brings Nonusers Online One Step At A Time

Portland State University

Unlike everyday users of mobile devices and home computers, many adults don't see the Internet and computers as a positive in their lives — but rather as a digital dead-end. They don't understand how to use them, or how technology can add value to their lives and help them accomplish their goals.

"In areas with intense poverty, there are a lot of people who are not comfortable with technology," says Stephen M. Reder, Ph.D., a professor of applied linguistics at Portland State University(PSU).

In fact, in a world where Internet use seems ubiquitous, a gulf remains between populations using digital technologies. According to the Pew Research Center, 81 percent of American adults are Internet users. However, the percentage of online users is much lower among adults in households earning less than $30,000 a year and among those without a high school diploma — only 67 and 51 percent, respectively.

> To help overcome the digital divide, Reder developed Web-based customizable educational software called the Learner Web that helps adults learn how to use the Internet and accomplish

their educational goals simultaneously — from preparing for the G.E.D. to applying for citizenship to researching the job market.

Learner Web allows people who are uncomfortable with technology to accomplish goals requiring them to use technology without going through a steep learning curve on the technology alone.

The Learner Web has become an ideal tool for education centers, libraries and workforce centers to offer adult learners because it allows users to work independently while connecting online to local organizations. In addition to teaching basic computer skills and digital literacy, the Learner Web also offers a growing library of learning plans that provide users with life and job skills.

"I think the single most important thing Learner Web does for someone is to teach them how to be an independent Web learner," says Jenifer Vanek, Learner Web administrator for the Minnesota Literacy Council. "It's based on the idea that individuals need to become independent users of distributed knowledge in order to fully participate in a community."

Studying High School Dropouts

The idea for the Learner Web was borne out of Reder's adult literacy research, including a 10-year study of about 1,000 high school dropouts.

"My study broke one of the major stereotypes about dropouts: that these individuals don't have goals," says Reder. "Instead, we saw adults who lacked realistic plans and a structure to help them get to where they wanted to go."

Reder says even adults being supported by different agencies and institutions — such as job training and adult education programs — often lacked a coordinated, cohesive plan.

"Adults who are new to this country or our educational system are often behind in their use of technology," says Vanek. "The bar is high for immigrants, refugees and those who experience poverty. They don't have time to gradually learn how to use the Internet on their own; they need to use it immediately.

"Even getting food assistance requires completing an online application. They have to develop their own skills or have others do it for them, which can be demoralizing. Without the skills to accomplish tasks, they become the object of technology, rather than the operator of technology," she says.

In response — and with the help of a $1 million grant from the Institute of Museum and Library Services — Reder developed the Learner Web software and sought the help of PSU's technology transfer office to copyright it.

"Learner Web is the flagship nonpatent invention for Portland State," says Joseph Janda, director of Innovation and Intellectual Property at PSU. "PSU's technology transfer portfolio is primarily technology-based, with a heavy emphasis on engineering and physics."

Logging On

To use the Learner Web, users create a personal profile with the help of a tutor or teacher, complete a reading assessment and interest inventory, and then choose a learning plan, which they can follow independently or with assistance. For example, the learning plan for obtaining a G.E.D. diploma may include information on the required tests, an assessment of the user's skills that need work and recommended practice steps. Users can save their work in an e-

portfolio and return to it at any time.

"The Learner Web is like using the Internet with training wheels," explains Vanek, who supports Learner Web sites throughout Minnesota. "It provides a supportive sequence of steps that scaffold the learner experience as they visit the websites."

Learner Web users can also allow teachers, tutors or agency personnel to monitor their work and progress toward their goals.

"Because Learner Web connects various agencies together as they support one learner, that individual can reach their goal much more efficiently," says Vanek.

For example, the need for duplicate forms may be eliminated, and student assessment results can be shared amongst agencies or learning institutions.

Customization

Reder initially thought the Learner Web would offer universal learning plans for digital literacy, English language skills or specific job skills that could be used anywhere in the country. But customization turned out to be not only necessary, but also advantageous.

"We envisioned a one-size-fits-all software program," he says. "But based on feedback and interaction with our users, we came to realize that the Learner Web in Portland would need to look at lot different in Minnesota."

Reder's team reengineered the software, adding a customization feature that allows regional administrators to add links to community organizations, embedding general learning plans with local resources that can serve and assist the user.

"As an online environment, the Learner Web is very flexible," says Vanek. "It enables teachers or tutors to load content that is media-rich and interactive."

What's more, Learning Web partners gain access to all the learning plans created by PSU as well as all other partners licensing the software. Administrators using the Learner Web in New York City, for example, may use learning plans created by administrators in California, either as they are or after customizing the plan to fit their location.

Digital Literacy Plans in Minnesota

In 2010, the United States Department of Commerce awarded Reder a $3.3 million grant to deploy digital literacy learning plans through the Learner Web in six different areas of the country, including St. Paul, Minn.

"Our digital literacy plans are foundational," says Vanek. "They aren't, 'How do I build an Excel spreadsheet for my household budget?' but 'What is Google?' and 'How do I set up an email account?'"

To help adults who are about to get their G.E.D., the Minnesota Literacy Council in St. Paul also developed learning plans to support vocational preparation, includingprograms on career exploration and researching the local labor market.

"Our most popular plan is how to prepare to be a certified nursing assistant," she says.

When educators in other parts of Minnesota began asking to use the Learner Web in their cities, the Minnesota Literacy Council began supporting administrative users of the software across the state.

Today, eight other states in addition to Minnesota offer the Learner Web. An estimated 25,000 learners have used the software at adult education centers, public libraries and other organizations in 25 cities. An annual licensing fee provides each Learner Web with two portals capable of supporting hundreds of users.

"It's interesting to see what happens at the different sites," says Reder. "The way the Learner Web is used varies by community. Often a partner will seek out the software because the community is working on a particular educational issue."

A Bridge for Inmates

In Syracuse, N.Y., and New Orleans, for example, the Learner Web has been adopted by the criminal justice program, which is using the software to help inmates prepare to reenter society. So far nearly 800 inmates in New Orleans have used the Learner Web to complete a digital literacy program — an accomplishment that can be used to reduce the length of their sentence.

"Being incarcerated intensifies isolation," says Reder. "Learner Web can be a bridge. We want people who come out of prison to be able to reintegrate with the world. Very often ex-convicts have both hands tied behind their back with no money or job. Learner Web helps people digitally connect with a world they may view as strange."

Since the first iteration of Learner Web was introduced, revenue generated by annual fees — up to $100,000 per year — has been channeled back into further development of the software.

"Steve is great at writing grant proposals and at team- and community-building," says Janda. "This invention reflects the social mission of the university."

To see available technologies from research institutions, click here to visit the AUTM Innovation Marketplace.

Share your story at autm.net/betterworldproject   #betterworldproject