



Buffalo PLS 3

Academic standards portal technology to support K-12 education

University at Buffalo

Portal Infuses Technology Into K-12 Classrooms

If Don Jacobs gets his wish, K-12 classrooms soon will be transformed by disruptive and innovative new teaching methods. He also hopes to be part of that change, through his own innovation: web-based systems that offer teachers a searchable curriculum database, resources and professional development — and certainly through the company he helped establish to commercialize the systems, [PLS 3rd Learning](#).

“I hope schools look completely different in 10 years, blending old-fashioned learning with technology,” says Jacobs, who serves as CEO.

Becoming an Early Adopter

Jacobs is himself a blend of teacher and techie. When he graduated with a degree in art education from Buffalo State College in 1981, teaching jobs were scarce; the market for personal computers, however, was just emerging. Out of sheer necessity, Jacobs taught himself to use the new technology, which helped him land a position “automating” a New York education service agency.

“That position allowed me to dabble in all areas of the organization, including designing instructional technologies projects,” says Jacobs, who simultaneously completed a doctorate in 1992 at the [University at Buffalo \(UB\) Graduate School of Education](#) of The State University of New York (SUNY) system. “And that led me to want to create a research center at SUNY that focused on using technology to advance K-12 education.”

He went on to establish and direct the Center for Applied Technologies in Education first at Buffalo State College and then at the [UB SUNY](#), from 1995 through 2007.

“We did projects all over the world to advance K-12 education with technologies,” he says.

As the center began focusing on the World Wide Web in the mid 2000s, Jacobs and managing director Paulette Gandel built a web portal to organize New York’s academic learning standards for K-12 with funding from the New York State Department of Education/U.S. Department of Education.

The database, called [NYLearns](#), was first offered for free, and then for a fee to New York school districts, which in turn gave their teachers free access to the web portal.

“We found good resources available through nonprofit organizations and wrote agreements to use those and put them on the web,” says Jacobs. “We were able to put thousands of resources aligned to standards on the site.”

Providing Curriculum Resources

Using NYLearns, a fourth grade math teacher in the Bronx can log on to the web portal and find not only a listing of mathematic concepts students are expected to know by the end of the year, but also sample curricula tied to those academic learning standards.

“There are companies that provide curriculum mapping to inform teachers what has to happen between September



and June at every grade level,” says Jacobs. “We also do that, but we add the search feature that makes those standards searchable by grade level, course and subject.”

Over time, the center expanded NYLearns with additional teacher resources, including best practices and online tools. Using the web portal, English teachers can find time-tested ways to teach the concept of foreshadowing, and math instructors have access to an online whiteboard to show students how moving the parentheses in an order of operations problem changes the calculation.

Arming Teachers With High-Tech Tools

The center staff, which eventually grew to 25 people, equally split between teachers and programmers, also added a point-and-click website builder for teachers to communicate weekly assignments to students and parents and an electronic portfolio tool where instructors can collect ideas and information gleaned from the web.

NYLearns also helps teachers assess how well their teaching methods are working. When the state of New York released 13 years worth of test questions used to assess students — some 30,000 questions — the center attached each question to its academic standard and compiled it all into a searchable database.

“[Using this feature], a teacher can search and find the handful of questions associated with foreshadowing or order of operations and create a practice assessment unit with psychometrically developed questions,” says Jacobs.

Time to Spin Out

After a decade of success with NYLearns — and growing interest in the curriculum and academic standards management system from other states — UB SUNY encouraged Jacobs to consider commercializing the software.

“That launched a conversation with Jeff Dunbar, and then three of us jumped out,” says Jacobs, who was joined in the commercial venture by Michael Horning, Jr., and Robert Daunce.

“It doesn’t happen very often that a faculty member leaves to start an enterprise,” says Jeff Dunbar, director of technology transfer for the [UB Office of Science, Technology Transfer and Economic Outreach \(STOR\)](#). “But Dr. Jacobs was willing because he saw such a great opportunity. He was already running a business within the university; he just had to move it out operationally.”

UB STOR assisted Jacobs’ center with obtaining copyrights and trademarks for its intellectual property, including the database design, portal design and web tools. In 2007 the technology transfer office also negotiated and executed the license to the new company, which was funded by and became a subsidiary of a private company called Performance Learning Systems (PLS).

“We encouraged Don to work with an attorney but explained the licensing process and milestones and structuring of royalty rates,” says Dunbar.

Initial projects in the company’s pipeline included building a web portal modeled after NYLearns for the state of Pennsylvania called the Standards Aligned System (SAS) and a similar system for the state of Texas now being used by 850 school districts.

Enhancing the Teaching Profession

By accepting sample curricula from teachers, PLS 3rd Learning is able to continually build content for its portals, while supporting and sharing the work of teachers. Contributions are reviewed by three or more instructors who teach at the same grade level and subject. Submitters receive anonymous feedback and after any necessary tweaking, the sample curriculum goes live.

Although the PLS 3rd Learning databases contain more than 40,000 teaching items, Jacobs is quick to point out that the real value of each system lies in the teacher’s ability to contextualize the data.

“Google how to measure the circumference of a circle and you’ll get 8 billion hits, the value of which is 0,” says Jacobs. “We contextualize [that information], so that if you’re teaching fourth grade math in the Bronx to bilingual students, you will find methods for teaching circumference that meet your state’s standards. That puts value through the roof.”

A Boost for Buffalo

In just seven years, PLS 3rd Learning is posting sales of \$10.5 million and has grown to a staff of 70, which recently required an expansion of the company’s headquarters in downtown Buffalo.

“Seeing the number of jobs created has been fantastic for Buffalo and its efforts to revitalize,” says Dunbar. “Our licensing fee revenue is just icing on the cake compared to the company’s contribution to the Buffalo economy.”

The company has also been receiving accolades from teachers and administrators using its web portals.

“We have all kinds of really positive feedback, it’s one of the very gratifying things about what we do,” says Jacobs. “After seeing the Pennsylvania web portal, one of the state’s top education policymakers said it made her want to go back into the classroom and teach again.”

In 2012, Jacob’s company merged with PLS and took over management of the parent company, which specialized in professional development.

“Online professional development is a big growth area for us,” says Jacobs.

In addition to providing online courses to educators in Turkey, Switzerland and Portugal, PLS 3rd Learning has recently partnered with the European Council of International Schools to provide professional development to schoolteachers across Europe. The company is also working with the New York State Council of Superintendents to help NY schools prepare to implement novel teaching methods such as the “flipped classroom,” in which students work independently with online materials and then work with the teacher on interactive exercises during class time.

Jacobs is excited to be playing a role in the evolution from classroom-based learning to anywhere, anytime learning.

“Part of it is providing the websites to help teachers and part is the professional development that provides a conceptual framework to prepare teachers for the shift,” he says. “Having the skills and expertise on a systemic level will determine how fast [school systems] get there.”

The Goal: Blended Learning

When Jacobs started his career, the technologies we all take for granted today had not yet transformed the business world.

“Schools are struggling to catch up,” he says. “The transition is now happening in education, and it’s what we call blended learning — the infusion of technology in the classroom.”

It’s just a matter of time, says Jacobs, before technology is ubiquitous in teaching and learning.

“Eventually, calling it blended learning will be redundant. It will just be learning,” he says.

— Mary Henderson

Photo caption: Don Jacobs

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