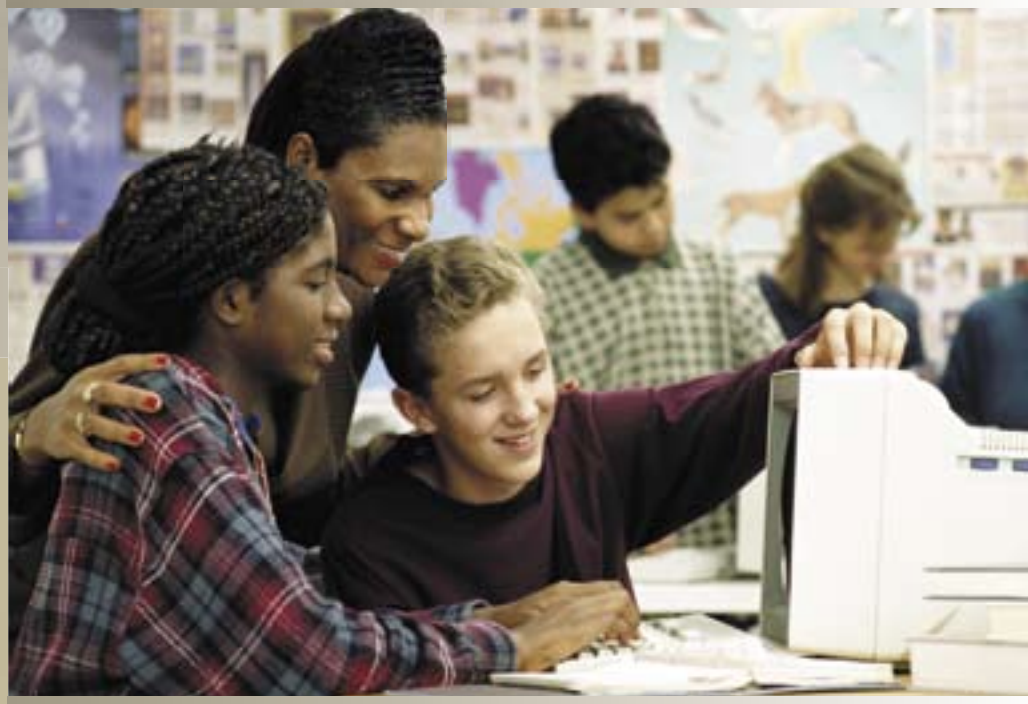
Teaching for Meaning with Technology in Texas



Two reporters walk toward the editor to share their article on Panamanian culture. Looking it over, the editor asks for a more detailed description and several pictures. Meanwhile, three other writers huddle around a computer, making decisions on the additional content they need for their article on Panamanian customs. Both articles will be included in a new Panamanian-American magazine illustrating similarities and differences between the two societies. As the deadline approaches, teams collaborate with each other, investigate, write, and read information from various Web sites. It is a busy day in the newsroom—at least, it feels like a newsroom: the reporters and editors are actually sixth graders at Sun Ridge Middle School in El Paso, Texas.

The magazine is one piece of a Panamanian-American Internet WebQuest addressing more than 40 standards from the Texas Essential Knowledge and Skills (TEKS) in social studies, writing, and reading. Find the WebQuest through March 2006 at http://www.rmcdenver.com/iste/Panama/. The project was created by the Sun Ridge Middle School campus technology coordinator Edith Carrillo-Flores and a teacher she is mentoring. Students create, synthesize, and evaluate what they find and make decisions about what is important and relevant. Rather than incorporate static facts from a textbook, thoughtful engagement with Internet resources allows students to critically question the authority of their sources as they weave together strands of meaning. "We found out that how we live here isn't the way all Americans live," offers a student reporter.

Carrillo-Flores created the WebQuest as part of her work with Challenge 98: The El Paso Partnership for Technology Integration, a K–16 collaborative funded by the U.S. Department of Education and focused on helping educators in the region to use technology as a meaningful and integrated part of their classroom instruction. (***Editor's note:*** For more information on this professional development initiative, read "What Was Challenge 98?" on p. 34.) The thread that holds these activities together, deliberately emphasized in Challenge 98 professional development, is project-based learning.

Meaningful Learning for Teachers

A group of teachers gathers at a round table, their laptops connected to the wireless network. They are busy discussing water supply issues the city is facing in its desert environment. Together they are creating a project for third and fourth graders that will cover various TEKS in science, social studies, and language arts. They divide the work in sections and two teachers search the Internet for Web sites on water conservation, while the other three discuss the process, activities, and assessment for the project, which takes several professional de-

By Bruce Havelock and Laura Reza-Hernandez

Subject: Social studies, language arts, art, science

Grades: K–12 (Ages 5–18)

Standards: *NETS•S* 3–6; *NETS•T* II, III (http://www.iste.org/nets/). *TEKS* (http://www.tea.state.tx.us/teks/).

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velopment sessions to complete. The water conservation WebQuest is available through March 2006 at http://www.rmcdenver.com/iste/water/ for their students as well as other teachers in their own school and beyond. Their goal is to create meaningful content using the TEKS, to facilitate students in making better informed decisions about their environment and resources.

Student Ownership of Learning

Edith Wharton's 1911 novel *Ethan Frome* is a classic of 20th century literature, yet many teachers struggle to make it engaging and relevant for their students. In the hands of students at America's High School, meaningful technology-enhanced instruction transformed *Ethan Frome* into a deep learning experience for students. Using digital video cameras and a variety of software programs, a team of students planned, scripted, casted, filmed, edited, and presented their own interpretation of *Ethan Frome.* They worked with minimal guidance from their teacher, Madeline Haddox, a Challenge 98 graduate who has become much more comfortable with allowing students to make instructional decisions. The group portrayed the novel as a soap opera set in a trailer park, replete with all the classically dysfunctional stereotypes one might expect: the whining housewife, hair in curlers; the brazen hussy with comically excessive hairspray and lipstick; and the bedraggled, unshaven, white-tank-top wearing Ethan Frome himself. To students, these characters were much more realistic and compelling after their transformation on film then they had been in Wharton's pages: the entire class was transfixed by the movie produced by their peers. They laughed, heckled, and commented on the colorful production, yet their discussion showed clear comprehension of the relevant themes. The student producers had put forth tremendous effort to create the film, and the pride they took in their finished work was undeniable.

The challenge of using technology to accomplish a goal is inherently motivating to many students. A key issue for supporting meaningful instruction is to make that goal relevant and personal to learners, amplifying rather than squandering that inherent motivation. A powerful way to accomplish this lies in technology's ability to inspire students' ownership of their creative and intellectual works. Here, students were expressing their individuality and exercising personal ownership and control, presenting a somewhat archaic work of fiction in terms that were both personal and relevant to their own life perspectives. By contextualizing *Ethan Frome* in the language of their own experience, these students created meaning.

Connections to the World Outside of School

Canutillo High School is located in a rural, high-poverty area. Although the computer labs are well equipped and maintained, the building itself shows signs of age and disrepair. Challenge 98 graduate Heather Cawley specializes in mathematics at Canutillo, but this year she is also teaching art class. In one class session, students quickly resumed work on their ongoing project: in teams of four, they gathered digital evidence of their

What Was Challenge 98?

Over five years, Challenge 98 provided ongoing professional development to more than 700 teachers across 12 school districts in El Paso, enabling 200 of them to earn master's degrees in educational technology. The grant's architects envisioned a combination of sustained professional development, technology, and an infrastructure for mentoring and ongoing professional learning. As a result, Challenge 98 has contributed to a reduction of the achievement gap while energizing the professional lives of nearly a thousand teachers and bringing creative, engaging, and meaningful uses of technology to El Paso's student populations.

Through the Challenge 98 experience, the El Paso Partnership for Technology Integration learned valuable lessons about how the advantages of technology can be maximized to support meaningful classroom learning for students as well as meaningful professional development for educators. Whether working with adults or children, deeper meaning and long-term understanding are fostered by:

- promoting learner ownership, self-direction, and voice in personally relevant contexts
- engaging with authentic problems rooted in the issues facing our local and global communities
- providing opportunities for collaboration and peer role sharing
- requiring goal-oriented final products that aim to persuade, inform, entertain, or stimulate a targeted audience

Constructing Meaning with Technology

In the projects described in this article and many others developed by Challenge 98 teachers across the El Paso region, students are asked to build understanding about a topic using the tools and supports of technology-supported structured inquiry. Hoping that teachers would engage deeply with the possibilities of technology to support and enhance learning, Challenge 98 focused on learning through long-term inquiry-process projects, using multidisciplinary activities, and integrating issues from beyond the classroom. Thoughtfully designed and executed, technology-supported project based learning offers students the opportunity to construct meaning on several levels: by taking ownership and integrating their personal voice into their learning, by connecting to authentic contexts and real-world problems, and by collaborating to reach a shared and valued outcome.

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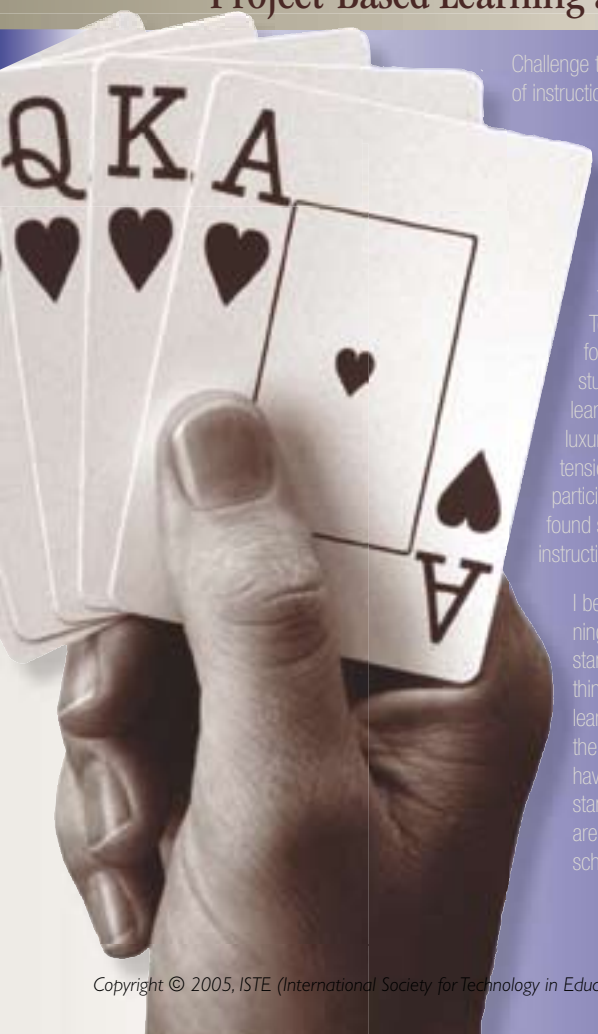
deteriorating school building for presentation to the community, hoping to influence the outcome of a pending school bond issue. Using charts, graphs, diagrams, and photos, students created electronic presentations highlighting the problems facing the school's roof, patios, mechanical, electrical, and heating systems. Using the Internet and their own creativity, they also proposed a range of solutions. Their presentations were later videotaped and broadcast to the entire school, raising students' awareness of the bond election and urging them to inform their parents of the school's needs. The bond issue eventually passed.

These students harnessed technology not only to learn about an authentic community issue, but also to play an instrumental role in bringing change to their community. They learned to dissect and represent data sets by using actual data from their school district about enrollment, capacity, and growth. Through the Internet, they learned about alternative energy systems while thinking about how to warm their school given real financial and infrastructure constraints. Finally, by discovering firsthand that diligent research and persuasive rhetoric could actually help to bring about change in their community, they learned a meaningful lesson about the value of civic engagement. They improved their skills at using technology, and, by conducting inquiry into this authentic problem, learned factual and conceptual knowledge in a way that is much more likely to be retained.

Conclusion

In many ways, the "real story" of Challenge 98 is still being told as hundreds of educators across the El Paso region share their rekindled passion for learning with their colleagues through mentorship, collaboration, and leadership for meaningful technology integration. We feared that after their training ended, teachers might return to traditional practices and engage in minimal or lower-level uses of technology, especially given the recently amplified importance of high-stakes testing and accountability. (***Editor's note:*** See "Project-Based Learning and High Stakes Testing" below for more on this issue.) In reality, the instructional practices of these teachers evolved even further. Many Challenge 98 teachers took the initiative to work at a larger scale as technology leaders at their campuses and districts, bringing meaningful, technology-rich project-based learning to many more students and teachers. They found creative ways to create planning time necessary to support this instruction because they have seen the power of the results. Their students are motivated, their test scores continue to climb, and when other teachers see this work in action, they want it for their own students. Meaning generates excitement; in El Paso, with the help of the El Paso Partnership for Technology Integration, technology helped the spark catch fire.

Project-Based Learning and High-Stakes Testing



Challenge teachers are clearly motivated by this kind of instruction, but how does it affect test scores? Texas educators are no strangers to accountability testing; a statewide standardized test has been used to rank Texas schools for more than 10 years. Texas recently implemented a new test, one that de-emphasizes testing basic skills (the focus of the earlier test) in favor of measuring the state standards. Thus, Texas educators are now accountable not only for simple skills practice but also for providing students with authentic tasks and meaningful learning. Project-based activities are no longer a luxury or choice, but a tool that can help alleviate tensions between practice and testing. Challenge participant Rebecca Pennies agrees, though she has found some challenges in the process of aligning her instruction to the assessment:

> I believe if you teach project-based, the planning has to be part of it. It has to have the standards as your basis for your planning. I think a lot of our problems with project-based learning have been that we go off with that theme before we look at the standards. We still have to tie that to our standards because the standards are what dictate to me what my kids are going to be tested on at the end of this school year.

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Dr. Laura Reza-Hernandez is the former technology program coordinator for the El Paso Partnership for Technology Integration. She facilitated various activities with area teachers, principals, and district leaders focusing on the use of technology to support high quality curriculum and accelerate learning. She now serves as the academic technology director for Northside ISD in San Antonio, Texas.

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