A Technology ENABLED Journey

A New Jersey school enhances student learning by integrating new and emerging technologies into the curriculum.

BY PAMELA ALBERT DEVINE

POINT ROAD SCHOOL'S technology story began in 1996 with a grant for a classroom modem so my students could email their university literacy buddies. More important than the funds awarded for this grant was the realization that someone believed in my vision that technology could change the face of education. Over the next two years, I slowly integrated computer and Internet use into my daily instruction. When I became the supervisor of curriculum and instruction in 1998, I began to align the use of technology with our curricula. However, I wasn't able to affect true sustained change in how technology was used until I became principal in 2005.

Point Road, a pre-K-4 school, has moved from a glimmer of a technological vision to a focused movement in which the staff work collaboratively toward a common goal of preparing students to be high performers in the 21st century. We are committed to

thoughtful and planned use of present and emerging technologies, believing that technology promotes creativity, provides opportunities for real-world learning experiences, stimulates life-long learning, and enhances students' overall competencies. Our vision focuses on enabling our students to become skilled, knowledgeable, independent, and self-directed learners who are comfortable with and proficient in using technology in all its forms.

Setting Goals

Extensive research in 2005 led us to the "Seven Dimensions for Gauging Progress of Technology in the Schools," developed by the Milken Exchange on Education Technology. This framework for integrating technology into learning outlines how schools can measure their progress in transforming classrooms into active, stimulating, and academically sound learning environments. We evaluated each of the seven

questions posed by the framework and shaped our own goals in response. We considered, for example:

■ **Learning environments:** Is the learning environment designed to achieve high academic performance by students?
Our goal: To establish a learning environment designed to achieve high academic performance by students through the alignment of standards, research-proven learning practices, and contemporary technologies.

■ **Accountability:** Is there agreement on what success with technology looks like? Are there measures in place to track progress and report results?
Our goal: To develop rubric assessments at every grade level to measure student progress toward achieving the state standards.

By the spring of 2006, the School Resource Team (representing the
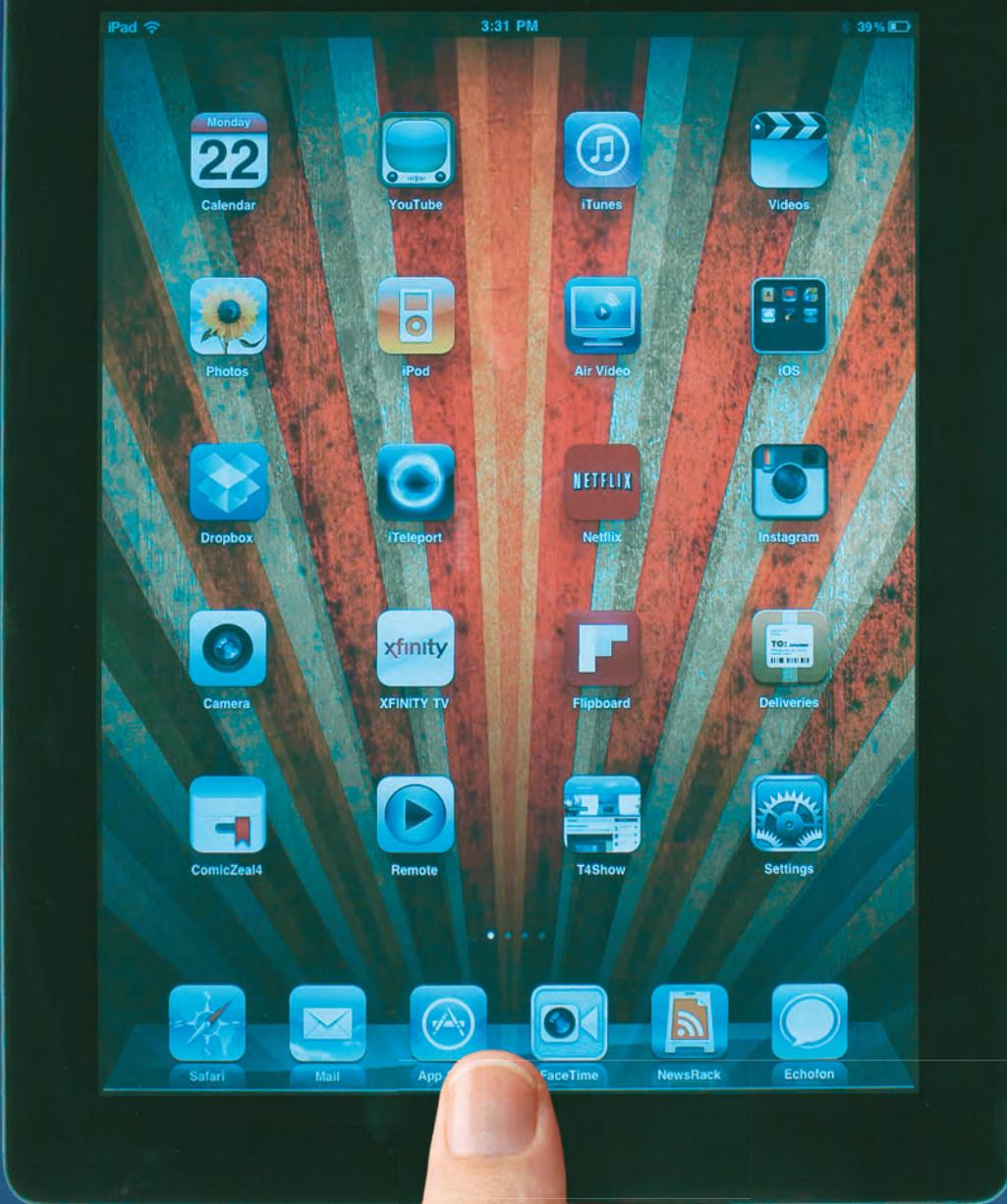
TECHNOLOGY INTEGRATION TIPS

⌄
LET STUDENTS DISCOVER THINGS ON THEIR OWN.
Always give them a teaser to get them started, but then let them go. Students are more creative and inquisitive than we sometimes give them credit for.

⌄
MAKE SURE TEACHERS ARE INVOLVED IN BRAINSTORMING.
They know what they are doing in the classroom, and the more that technology can support the curriculum, the more it will be used.

⌄
WORK AS A COLLABORATIVE TEAM.
The principal, teachers, students, and parents all need to be active participants. All stakeholders have to be committed to the thoughtful and planned use of present and emerging technologies.

⌄
BE A MODEL.
Embrace and use technology yourself. Be on the cutting edge, and share your enthusiasm.

Twenty-first century schools must engage students in addressing real-world problems, issues, and questions that **matter.**

administration, staff, and parents) had developed a technological Pupil Progress Objective (PPO). The PPO stated, "By June 2007 and 2008, 80 percent of the students will demonstrate increased technological literacy, including basic computer operations and ethical use of technology. They will utilize computer applications, via integrated problem-based learning opportunities, across all curriculum areas to gather information, to organize information, and to solve problems."

Getting Help
In the summer of 2006, Point Road School became the only pre-K-4 building among the 27 schools accepted for the New Jersey Department of Education's pilot New Jersey Technology Assessment of Proficiency (NJTAP) program. NJTAP gave us the opportunity to receive ongoing professional development, to collaborate with other schools, and to participate in the creation of assessment tools that were shared on the state website. The program continues to flourish under the name Technology Assessment for Proficiency and Integration, or NJTAP-IN.

Another driving force supporting technology at Point Road is the Education Foundation of Little Silver, a nonprofit parent organization. It supplements school budget funding by awarding numerous grants and

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ONLINE

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↗ Examine the "Seven Dimensions for Gauging Progress of Technology in the Schools," at the **Milken Exchange on Education Technology** website.

↗ Learn more about the **New Jersey Technology Assessment for Proficiency and Integration**'s tools and implementation strategies for assessing proficiency in computer and information literacy.

contributions in the area of educational technology. We feel fortunate that we have the technology infrastructure and equipment to support our vision.

Taking Action
Meanwhile, we began translating Point Road School's vision into practice. The first step, starting in 2006, required classroom teachers to stay with their class during the technology period, which allowed teachers to learn as their students were learning. This was one of the most important steps along our journey.

In addition, students were now pre-assessed and post-assessed at the beginning and end of every year from kindergarten through grade four. Assessments included a teacher-developed checklist of technology skills that we felt were developmentally appropriate. We created rubrics to assess all projects for word processing, spreadsheets and graphs, graphic organizers, and multimedia presentations. The technology teacher and the classroom teachers implemented these instruments, aligned with the New Jersey Core Curriculum Content Standards, in a co-teaching environment. Students learned to use the rubrics to evaluate their work. Results were reported and projects were saved in the students' electronic portfolios.

Staff learned about new technologies, resources, and strategies at technology workshops conducted each month at the principal's meeting. The district also provided time for professional development in technology through an in-house Technology Academy that gave staff

the opportunity to attend workshops.

Classroom teachers and the technology teacher collaborated on project-based learning that integrated technology within the content areas. The technology teacher helped the students be active learners, while at the same time assisting classroom teachers in becoming familiar with technology they could then use in the classroom. This co-teaching model encouraged teachers to coordinate technology instruction with curriculum standards and to create suitable activities.

Hardware and Software
With a common vision, we have been able to move from a random infrastructure with isolated software to a seamless integration of technology that supports student learning. All of our technologies are used on a daily basis by students and staff. For example:

- **SMART Boards,** computer-connected interactive whiteboards, enable students to interact with their learning environment. They keep students involved, engage those students who have attention difficulties, enable better viewing of material, and provide kinesthetic learning opportunities.
- **Senteo,** an interactive system in which students use handheld wireless remotes to respond to teacher questions, is available to teachers on a sign-out basis for classroom use. The system offers instant feedback to students and teachers, allows for assessments, and enables students to have fun while learning. Students

are more relaxed when using the Senteo devices for both pre- and post-assessments.

- *Digital videocameras* enable students to create videos. Students go through the entire movie creation process: They research their topic, write storyboards, and use Google Docs for writing scripts. They either direct, act, or film, and then they edit their movies for presentation. The process allows students both to learn what is required to make a movie and also to engage in cross-curricular projects.
- *Educational websites* provides students with learning opportunities across the curriculum and supports what they are learning in the classroom. Sites include Raz-Kids for reading, SpellingCity for spelling, Eggheads for science, and IXL for math. Students apply what they learn to create cohesive presentations and reports.
- *Web-based applications* available through such sites as SpellingCity, Prezi, Raz-Kids, Google Docs, ToonDoo, Starfall, KerPoof, Storybird, Glogster, and Sense-Lang enable students and teachers to create products that support the curriculum, engage students in learning, and provide students with creative outlets.

Thanks to these uses of technology, students are interactively involved in their learning. They are excited to create projects, learn new information, and stretch the limits of their imagination by exploring what can be done. They are eager to show peers and parents what they are learning. Often, students tell us they showed a project to their parent, and now their parent uses the web-based application for their own business needs!

Achievements
Point Road's efforts in the technology area have contributed in multiple ways to a higher level of improved teaching, student engagement, and subsequent learning and achievement.

NINE ESSENTIAL COMPONENTS

1 **High expectations.** We focus on what we can do to help students be technologically prepared citizens. We ask: "In what ways is technology utilized that directly or indirectly communicates high expectations for all students?"

2 **Administrative and budgetary support.** In these difficult economic times, technology has remained a high priority for our district. We also rely on grant and corporate support, donations from our educational foundation, and free resources.

3 **Ongoing, sustained professional development for teachers.** Unless a district is committed to embedded professional development, teachers will not have high expectations for their students in the area of technology because their own skill set and confidence will be lacking.

4 **Collaboration and co-teaching.** The classroom teacher is responsible for determining how technology can support curricular work, and then through collaboration the technology teacher and the classroom teacher design projects.

5 **Problem-based learning.** Our problem-based learning encourages students to explore real-world problems and challenges, developing cross-curricular skills in a collaborative setting.

6 **Student-directed learning.** This type of learning requires students to be "active, engaged" learners. Students' interests, needs, and abilities determine what and how curriculum is taught in the classroom.

7 **Teachers as facilitators.** In order for technology integration to be successful, the teacher-centered environment of "transmitting knowledge" needs to shift to a student-centered learning environment where discovery and inquiry are key strategies for learning. Facilitators create an environment where students acquire knowledge by doing activities themselves.

8 **Integration of technology, embedded in the curriculum at all grade levels and in all content areas.** Technology integration requires students to access, evaluate, interpret, and apply information from print and non-print materials. Technology has become an effective tool in all aspects of student learning and in all content areas.

9 **Alignment of instruction and authentic assessments.** Authentic assessments are those in which students are asked to perform real-world tasks that demonstrate meaningful application of essential knowledge and skills. In order for assessment to be "authentic," it must be aligned to the curriculum.

Assessment has moved from regurgitation of memorized facts and disconnected processes to demonstration of understanding through application in a variety of contexts. Real-world audiences are now an important part of the assessment process.

Technology standards continue to be integrated into the curriculum so that students can apply their technology knowledge and skills within the context of each subject. Our students use technology tools to analyze and synthesize data, and to collaborate on projects to meet the National Technology Standards, the New Jersey Core Curriculum Content Standards, the curriculum of the Little Silver School District, and soon the Common Core State Standards.

Twenty-first century schools must engage students in addressing real-world problems, issues, and questions that matter. For our school, the seamless integration of technology not only enabled us to use technology as a means to better deliver the curriculum, but also became a powerful catalyst for advancing our continual quest for educational excellence. **P**

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