Technology Trends In Schools

Where Teachers and Students Are and Where They Want to Be

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Let's look at a snapshot of where schools, teachers and students are regarding their technology usage.

District-Level Focus and Initiatives

QED's 2005-2006 National Technology Assessment provided results from a survey of more than 8,000 school districts regarding future hardware and software needs. Of the respondents, when asked to assess the overall technology use in their districts, 61% considered their districts to be "mainstream"; 26% described their districts as "early adopters of technology"; and 13% rated themselves as "behind the curve" in technology use.

Nearly half (47%) of the districts plan a major technology initiative or upgrade effort focused on desktops, laptops and handhelds in the coming year. Almost 40% of them expect to launch an infrastructure/networking initiative, and 18% plan to focus on storage or warehousing efforts. These kinds of initiatives are in line with districts' efforts to respond to the No Child Left Behind (NCLB) act requirements. Eight-two percent of school districts either own or lease student information systems.

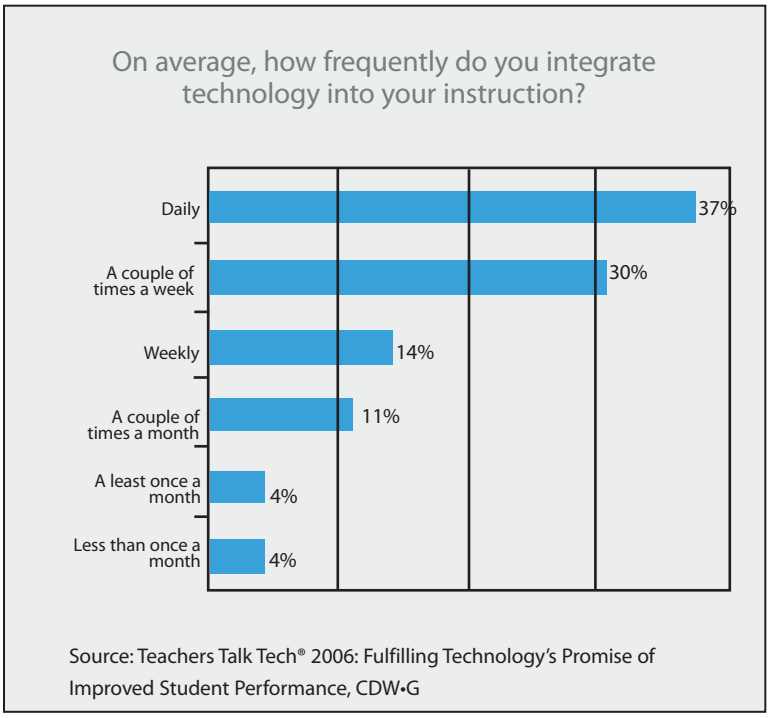
According to the survey, districts that had all of their schools meeting adequate yearly progress (AYP) requirements under NCLB spent significantly more per student on technology than those districts in which at least one school did not meet AYP. Districts that met the AYP requirements spent an average of $147 per student on technology during the 2004-2005 school year as compared with $120 per student in districts where at least one school did not meet the AYP requirements.

Online Learning and Content

Schools are showing increased interest in online learning and in offering online courses for students as well as for teachers for professional development. Communities in rural areas or those with limited resources have often been the first to recognize the promise of online learning for students of all ages.

Project Tomorrow-NetDay focuses on promoting science, math and technology to help students develop necessary 21st century skills. The organization conducts annual Speak Up Events, online surveys that provide students and teachers a voice into national and local policies that impact education. Its report, "Our Voices, Our Future: Student and Teacher Views on Science, Technology & Education," summarized the 2005 national data collected from 185,000 student surveys and 15,000 teacher surveys representing all 50 states, DC, Puerto Rico, Guam and Department of Defense schools worldwide. Of the middle and high school students, 17% of 6th graders, 28% of 9th graders and 46% of 12th graders indicated that they or someone they knew had taken an online class. There was no apparent difference in responses among schools classified by the National Center for Education Statistics (NCES) as urban, suburban or rural, nor by Title I eligibility. Seventy-five percent of teachers indicated they or another adult they knew had participated in an online course.

The February 2007 issue of eSchool News included as front-page news an article about Curriki, a new online community promoting free and open collaboration among educators to support the development and free worldwide distribution of quality educational materials. The name Curriki is a play on the combination of "curriculum" and "wiki", making it what its creators have labeled "the Wikipedia of curriculum." It has features similar to Wikipedia, such as user-friendly tools for downloading materials, communication tools to allow for easy sharing of content, form-based tools for contributing content and an extensive peer-review



Source: Teachers Talk Tech® 2006: Fulfilling Technology's Promise of Improved Student Performance, CDW•G

process.

The open source curricula Website, www.curriki.org, is the result of work done for the Global Education and Learning Community (GELC), an online project started by Sun Microsystems to develop works for education in a collaborative effort.

What this means to the educational community is a source of free, open platform learning materials and access for teachers and their students to resources from around the world that can be reviewed and integrated into local classroom teaching and learning. Questions of quality control, state and local standards, scientifically-based research around content and others are obvious. What it means for traditional educational products remains unclear. Certainly traditional publishing will not die. But with this work in progress, new business models will necessarily evolve in the business community, and new types of partnerships will likely be forged.

Tech-Savvy Students

On average, 66% of K-12 students are taught technology literacy and technology integration using software, according to QED's 2005-2006 National Technology Assessment.

Communication is a key student motivator for students and a driver of their use of technology for learning and for personal use, according to "Our Voices, Our Future: Student and Teacher Views on Science, Technology & Education." This report clearly shows that our nation's students have moved well beyond their teachers in using technology for communication. And the trend continues. Almost all (95%) of teachers reported being comfortable with email, which is good. But report findings add that of the 65% of students who indicate they use email and instant messaging (IM) on daily basis, they overwhelmingly prefer IM to email. In a column I wrote about a year ago, I voiced my surprise to hear comments from a NetDay student who remarked that email is for grandparents! It was interesting to find that sixth grade seems to be the point at which students begin to be strongly attracted to the use of technology to communicate. The survey indicated that by sixth grade, 50% of students use email or instant messaging on a daily basis.

SEVENTY-FOUR PERCENT OF TEACHERS INDICATED THAT, AS A RESULT OF TECHNOLOGY, THEIR JOBS ARE EASIER. FORTY-SEVEN PERCENT SAY THEY COMMUNICATE MORE FREQUENTLY WITH PARENTS ABOUT THEIR CHILDREN'S PROGRESS. THEY FURTHER INDICATE THEIR LESSONS AND THE INSTRUCTIONAL EXPERIENCES ARE RICHER DUE TO THE INTERNET AND MULTIMEDIA-SUPPORTED TEACHING (47%).

We know that, typically, students have more access to technology outside of the classroom than in. What are they doing outside of class? The "Our Voices, Our Future" report indicates that the top three activities in which students engage at home are listening to music (79%), playing games (79%) and talking or emailing with friends or family (75%). It could be a column of its own, but the report affirms other research findings and current articles on trends in schools: students are big game players, and are using these interactive technology tools socially, communicating with each other and problem solving in virtual worlds.

Results that were somewhat surprising in the report included that students are:

- getting information about events, activities or hobbies (64%)
- going online for news, sports, weather and entertainment updates (54%)
- using graphics, design, photo, video editing or music editing software (51%)
- conducting personal research (47%)
- shopping (43%)

Technology is fairly well integrated into and embedded in the everyday activities of students.

Profiles of Teachers Comfort With Technology

Teachers are becoming increasingly comfortable with the use of technology, for personal use and for teaching and learning, but they are having a rough time keeping up with their students. It is disconcerting to learn in the "Our Voices, Our Future" report that the data does not show significant differences between how younger teachers and older teachers are approaching their technology use. There are still critical needs in our pre-service preparation of teachers to appropriately use technology-based tools for teaching and learning and for personal productivity.

Which of these technology products do you use on a weekly basis?

		K – 3	3 – 6	6 – 12	Teacher
Desktop computer	63%	60%	82%	93%	
Laptop computer	21%	28%	35%	39%	
Cell phone		39%	49%	75%	60%
Hand-held device (PDA)		n/a	14%	16%	11%
Digital camera		21%	25%	43%	36%
Video camera		14%	16%	22%	9%
Scanner		8%	8%	21%	20%
DVD or CD burner	24%	31%	59%	32%	
MP3 player or iPod	12%	22%	46%	6%	
Video game player	53%	55%	61%	3%	
Smart Board		n/a	n/a	n/a	10%
None of the above	n/a	5%	1%	1%	

Source: Our Voices, Our Future: Student and Teacher Views on Science, Technology & Education, Project Tomorrow-NetDay

Still, 74% of teachers indicated that, as a result of technology, their jobs are easier. Forty-seven percent say they communicate more frequently with parents about their children's progress. They further indicate their lessons and the instructional experiences are richer due to the Internet and multimedia-supported teaching (47%) and that, with technology, students take a more active role in learning (also 47%).

The report further states that "[i]n general, technology is helping teachers do their jobs well. 61% of teachers believe that technology is an asset in helping them meet No Child Left Behind requirements. Only 4% say it's a distraction."

The CDW Government, Inc. (CDW-G) survey of more than 1,000 K-12 teachers across the country and the resulting report, "Teachers Talk Tech® 2006: Fulfilling Technology's Promise of Improved Student Performance," revealed that the teaching process is fundamentally changing with professional development that moves beyond merely learning about computers to understanding how it impacts teaching and learning. This, of course, makes sense!

Teachers Talk Tech found that in 2006, 48% of teachers reported receiving eight or more hours of professional development in the last 12 months, yet nearly one-fifth of teachers reported receiving no technology training at all. Four of every five teachers indicated that they believed technology was critical for their job. And the survey revealed an increase in teachers' use of technology for lesson preparation (81%) and as a tool to teach students (79%).

Also from the report…two thirds of teachers (67%) integrate technology into their classroom instruction at least a couple of times each week; 37%, on a daily basis. Both students and teachers want ready access to current technology tools in their schools. According to the "Our Voices, Our Future" report, if teachers were designing a new school, they would provide fast, wireless Internet access throughout the school (19%), schedule professional development time for learning with technology (17%) and provide a laptop for every student (12%). The report noted that these same top three priorities were consistent across years of experience as teachers.

Favorite Tech Tools

The technology products of most interest to both students and teachers in the Our Voices, Our Future report were desktop computers, cell phones and the DVD or CD burner. Game playing too was popular, with the personal game player ranked third for students in each grade level.

Internet and communication tools frequently used by students and teachers included email, bookmarked websites, search engines and research sites.

Technology is delivering on the promise to positively impact student learning and teacher productivity, and with Web 2.0, content and instructional materials will predictably evolve, but challenges remain in providing the professional development experiences needed by teachers and access critical to effective use by students and teachers alike.

For more information:

- 2005-2006 National Technology Assessment, Quality Education Data, www.qeddata.com/MarketKno/ResearchReports/NTA.aspx
- "Curriki Opens Content," eSchool News, Volume 10, No.2, February 2007, www.eschoolnews.com/news/showStory.cfm?ArticleID=6821
- Our Voices, Our Future: Student and Teacher Views on Science, Technology & Education, Project Tomorrow-NetDay, www.netday.org/SPEAKUP/pdfs/SpeakUpReport_05.pdf
- Teachers Talk Tech® 2006: Fulfilling Technology's Promise of Improved Student Performance, CDW•G, newsroom.cdwg.com/features/feature-06-26-06.html

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