

THE 2011 CDW-G 21st CENTURY CLASSROOM REPORT

K-12 schools are expanding their tech offerings, but there's still room for improvement.

Executive Summary

A 21st century classroom can empower instructors and students to make the teaching and learning process more interactive, collaborative and hands-on. If properly deployed, technology fosters a more effective learning environment that helps students develop the necessary 21st century skills to succeed in their current environment, at the college level and in their future careers.

For the second straight year, CDW-G has surveyed 1,000 students, faculty and district IT professionals nationwide to examine the role of technology in high school education. The survey, called the *21st Century Classroom Report*, examines how teachers and students want to use technology, measures how technology in education is evolving and identifies opportunities for improving classroom technology integration.

This white paper explains the report's key findings and provides recommendations and calls to action on how to create and sustain an educational experience that fully leverages classroom technology.

Table of Contents

-
- 2 Key Findings

 - 3 Recommendations

 - 4 Calls to Action

Key Findings

1. Faculty are envisioning a broader spectrum of technologies for use in the classroom.

High school teachers' expectations for technology are evolving. They now believe that essential classroom technologies should include wireless network access, a computer for teachers, an interactive whiteboard and digital content. A year ago, their must-have classroom technologies were limited to an Internet connection, a computer and an LCD projector.

Faculty Must-have Technology

The faculty vision of the 21st century classroom has expanded in 2011, with large majorities including more technologies among their must-haves.

85% **Wireless network/Internet**

84% **Personal computer**

79% **Interactive whiteboards**

73% **Digital content**

The addition of interactive whiteboards and digital content as essential classroom technologies means faculty are recognizing the importance of engaging students with interactive, multimedia-rich lessons and activities.

"We have to address students' different learning styles," says Donita Hinckley, system instructional technology coordinator for Thomasville City Schools, Thomasville, Ga. "They have all these different gadgets, so we have to use technology to make sure we are engaging them."

2. Students are studying with technology at home, even when their homework doesn't require it.

The survey found that 86 percent of students are using technology more outside of school than in class. In fact, nearly every student (94 percent) says they use technology to study or work on class assignments at home, while only 46 percent of faculty say they regularly assign homework that requires the use of technology.

This is an area that teachers can improve on. Recognizing that students use technology at home, Hornell City School District, located in Hornell, N.Y., provides students with 24x7 access to all of their school applications and files over any computing device, including tablets and smartphones.

Through the ClassLink LaunchPad cloud-based application, students and teachers can log in from home and access Microsoft Office, Adobe software, their homework assignments and other instructional materials, according to

Peter Baccile, the district's technology director. Students can also turn in their homework by dragging their documents to a teacher's online "dropbox."

"It gives students and teachers the same resources, whether they are in or out of school," Baccile explains. "It allows them to use their computer at home to access everything they need."

3. The use of digital content is growing.

Digital content, which includes electronic textbooks and other class materials online, is beginning to gain traction. Today, 11 percent of high schools are using digital content, another 15 percent are considering it and 47 percent are considering a combined print and e-textbook environment, according to IT staffers surveyed. Combined, that is 73 percent of school districts that are either currently using or considering the use of digital content.

According to IT staffers, faculty and students, digital content offers three main benefits: it gives students access to more current information than print textbooks; students can access multiple sources of content from one device; and it provides quick access to content.

The top challenges to adoption are the cost of computing devices, such as e-readers, to access digital content and the fact that some faculty prefer to use print materials instead, according to those surveyed.

Thomasville City Schools is an early adopter of digital content. During the past two years, the district has begun replacing print textbooks at the high school level with e-textbooks and other digital content, including Discovery Education, which provides educational videos and interactive exercises. To access the content, the IT department has equipped each high school student and some eighth-graders with netbooks.

The goal is to use digital content to enhance instruction and increase technology literacy. "Electronic resources are interactive and keep students engaged," Hinckley says. "The educational content is also up-to-date, which is important, particularly when new discoveries happen in science or astronomy. This gives students current information that you can't get from a 10-year-old print textbook."

4. While schools are investing in new tech tools, most students say their schools are not meeting their technology needs.

Most IT administrators say their technology is up-to-date. The percentage of IT administrators who rate their district's technology as cutting edge or current grew from 41 percent in 2010 to 64 percent in 2011. Those who say their technology could or needs to be refreshed dropped from 59 percent to 36 percent.

However, their efforts to integrate technology into classrooms are falling short. While 94 percent of students say that tech skills will improve their educational and career opportunities, just 39 percent say their high school is meeting their technology expectations.

To expand further on those key findings, here are three more important conclusions from the survey.

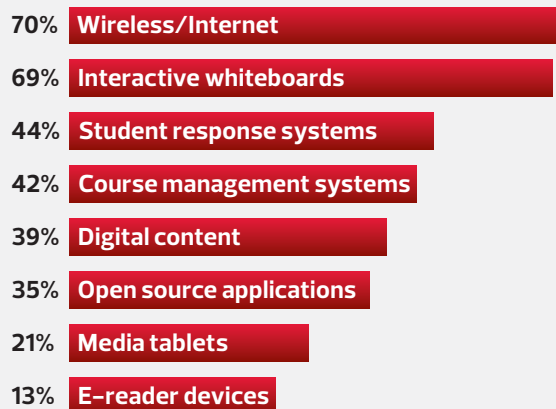
IT administrators are supporting a wider variety of classroom technologies. For example, the percentage of districts that are supporting digital content has risen from 29 percent last year to 39 percent this year.

Support for course management systems has grown from 30 percent to 42 percent, and support for student response systems has jumped from 35 percent to 44 percent.

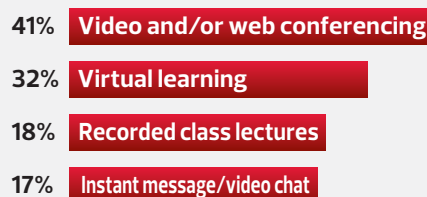
Technology Support Increasing

IT professionals are supporting a growing number of technologies at their schools in 2011.

Tech Tools



Tech Capabilities



Budget for educational technology is a challenge. IT staff, faculty and students say lack of budget is the biggest challenge to increasing classroom technology in high schools. According to the report, 47 percent of IT staffers say they will see a decrease in their IT budget during the 2011–2012 school year.

Students see value in in-classroom mobile device use. They feel there is a greater potential for smartphones and MP3 players as learning tools in the classroom compared to faculty or IT staffers. When students were asked about mobile devices, 30 percent said smartphones and 36 percent said MP3 players were essential to a 21st century classroom.

In contrast, only 17 percent of faculty and 19 percent of IT administrators believed smartphones were essential, and only 19 percent of faculty and 15 percent of IT staffers said MP3 players are essential.

Recommendations

Plan to invest more in technology. Even though most IT managers surveyed said they expect lower IT budgets this school year, an increasing number say their district plans to increase its investment in classroom technology over the next two years. In 2011, 65 percent of IT administrators said their district plans to upgrade or improve classroom technology in the next two years, up from 51 percent in 2010.

To combat tight budgets, districts can apply for state and federal grants, Hinckley says. For example, in 2010, the Georgia Department of Education awarded a \$1.3 million grant to Thomasville City Schools, allowing it to purchase netbooks and electronic textbooks for high school students and teachers. The grant also paid for interactive whiteboards, projectors, document cameras and audio systems for each high school classroom, as well as wireless networking equipment.

"While grant applications are time-consuming to prepare, the payoff in the educational opportunities afforded by the grants is well worth the time," Hinckley says.

Districts can also be creative and shift funds from one budget to another for technology purchases. For example, some states such as Texas are allowing traditional textbook funds to pay for technology, including e-readers and tablets, and for electronic textbooks and other instructional materials, says Billie McConnell, assistant professor of teacher education and director of the K-12 Digital Learning Institute at Abilene Christian University in Texas.

Use technology more for instructor-to-student and student-to-student communication and collaboration. Students and faculty use technology for peer communication and research, but not for collaboration.

More specifically, when asked about their daily technology usage, 59 percent of students said they are using technology to communicate with other students, and 68 percent of faculty say they use it to communicate with other teachers. But just 14 percent of students use it to communicate with their teachers.

So while both students and faculty are online, they are not connecting with each other, which is a missed opportunity. In addition, just 23 percent of students say they use technology to collaborate with other students.

Communication and collaboration – along with critical thinking and creativity – are among the key 21st century skills that students need to learn to compete effectively in the global workforce. By taking advantage of communication and collaboration tools, students can work on projects together and teachers can assist students if they have questions about homework after school.

At Hornell City School District, for example, the ClassLink application allows students to communicate with teachers and their classmates over instant messaging or web-based video.

They can also share and edit documents together.

"Faculty can see when students are online and pull them into chat sessions," he says. "ClassLink also promotes student collaboration. They can work together online, share resources and work collectively on a project."

Seek greater student input on technology. Seventy-four percent of faculty and 70 percent of IT staffers say they understand how students want to use technology as a learning tool. But they may be overconfident because only 49 percent of students agree and only 30 percent of students say their high schools seek their opinions on classroom technology. By seeking student input, school districts can better meet students' technology expectations.

Calls to Action

1. Find ways to use technology to engage students more.

While 75 percent of faculty say they regularly use technology to teach, only 41 percent of students say they are encouraged to use technology throughout the school day. To correct that, it's important to give students a hands-on technology experience.

One common mistake teachers make when they first incorporate technology into their classrooms is they ask, "How do I use technology to teach?" They often end up lecturing with a PowerPoint presentation or standing in front of an interactive whiteboard, says Tom Daccord, co-director of EdTechTeacher, which provides professional development to teachers.

"That's simply reinforcing the teacher-centric classroom of disseminating information to a passive audience," he says.

Instead, teachers should ask themselves, "How can students learn with technology?" This question can be followed up by assigning activities where students use technology, such as creating videos, podcasts or blogs. "It can empower students to take ownership of learning, where they work individually or with others to create knowledge and create content," Daccord says.

2. Experiment with new approaches to using technology in the classroom.

For example, Hornell City School District is taking a new approach to education by blending online learning with project-based classroom learning. Students will learn core content material through online instruction with a live, certified instructor, while in-district teachers collaborate across curricula to develop project-based lessons that teach students 21st century skills.

The district, which has equipped every classroom with 21st century teaching tools, including interactive whiteboards, is designing new classrooms to support its new approach. It includes a flexible space with moveable tables and mobile technologies, where students can participate in virtual learning or project-based learning activities. High-end video conferencing units will allow guest lecturers to speak to students, while web-based video conferencing systems will allow students to interact with other students worldwide.

So far, the district has built one of these classrooms and will build more as budget allows, Baccile says. Last year, the district implemented its blend of online and project-based learning at its Alternative Placement Academy, a school for seventh- to ninth-graders. This year, it is expanding this approach to seventh-graders in the junior high school, and if it succeeds, the district will bring it to the high school in future years.

"It is about engaging students. It's got to be a balanced, multisensory approach, where we are engaging them through an auditory, visual and kinesthetic approach, and having them directly involved in learning," Baccile says. "That way, students will retain information longer and it will help them develop their critical thinking skills."

3. Understand the wider-reaching effects of using technology in the classroom and plan accordingly.

Teachers need additional planning time to integrate technology into their daily lessons. Providing faculty with professional development can help them increase the efficiency and effectiveness of their lesson planning.

4. Seek student input in technology decision-making.

Consider using the CDW-G 21st Century Classroom Report survey tool to get an accurate picture of student, faculty and IT staff needs on campus. Use the results to discuss 21st century skills with students to determine what technology they find the most beneficial and seek guidance from them on how to effectively incorporate technology into the curriculum.

A link for the survey tool and access to the full report can be found at: CDWG.com/21stCenturyClassroomReport



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