Classroom Technology & Teacher-Student Interaction

With widespread investments in technology in school districts around the United States, a key challenge facing schools is how to best empower teachers to take advantage of the new technology available in their classrooms. Nationally, the ratio of public school students to instructional computers with Internet access shrunk to 3.8 to 1 in 2005 – a 14% improvement in availability over 2003. More than 90% of students in grades 6-12 currently use computers regularly during school hours. The increase in technology creates new challenges for teachers and raises new concerns for administrators about how to best maintain high levels of interactivity in the digital classroom.

"83% of teachers using Vision report increased interaction with their students"

Some educators and parents have reservations about the potential changes in teacher-student interaction that can stem from the utilization of technology in the classroom. These concerns often center on the perception that teaching across computers might decrease the frequency of one-on-one student-teacher communication or increase the amount of time that teachers spend at their workstation. Recent research, however, indicates that the adoption of technology in the classroom can lead to qualitative and quantitative improvements in teacher-student interaction.

In comparing task-based education conducted with computers to similar tasks taught without computers, researchers found an increase in experimental risk-taking and self-regulation by students as well as a higher level of conceptualization of the task in the computer-based environment. This study also found an increase in both factual information exchanges and task conceptualization interactions between teachers and students when teaching occurred across computers (Karasivvidis, 2004). Beyond the widely expected benefits of computer-based education - increased student-to-student collaboration, learning of computer-specific skills, expanded research avenues, and enhanced critical thinking opportunities – the utilization of technology can lead to improved interactivity and create more student-centered environments.

The central obstacle to optimizing the benefits of technology in the classroom appears to be empowering teachers with the tools and training they need. From investigating instructor attitudes toward technology and the utilization of computers in schools, researchers concluded that the use of technology for curricular purposes is almost exclusively a function of teachers' access to that technology (Norris, 2003). Although the use of computers in the classroom can facilitate knowledge-constructed, student-centered classrooms, the shift from a teacher-centered environment requires educators to revisit their methods. Technology brings about changes in classroom organization and the role the teacher plays; providing teachers with the tools they need to negotiate these changes is crucial to their success (Muir-Herzic, 2004).

Beyond the potential benefits of using technology in the classroom lie possible pitfalls – misuse of the Internet, gaming, and other distractions that can make it a challenge to keep students on-task. An effective tool is needed to balance the benefits and risks associated with bringing new technologies into schools. Such a solution would allow teachers to realize the pedagogical benefits of computers and the Internet while easily managing student computer activity and web surfing in their classrooms.

School districts around the United States have found that classroom management solutions are a much-needed tool in their efforts to create collaborative, student-centered learning environments. With Vision classroom management software from GenevaLogic, teachers are able to provide greater one-on-one attention while managing the computers in their classroom more effectively. In an October 2007 survey, 83% of teachers using Vision found that Vision increased their interaction with their students and gave them more time to focus on individual student needs.

Molly Brog, a teacher at Oregon's La Grande High School, has used Vision to build a student-centered and collaborative classroom. She takes advantage of the powerful management and monitoring features of Vision to provide one-on-one guidance. "Vision maximizes student achievement and gives me more time with students," says Brog. "I spend less time at the white board or overhead projector and more time with individuals. Vision has revolutionized instruction in a lab setting."

Brog is not alone. Christa Varacalli, a teacher at Hamilton West High School in New Jersey was among the teachers who said Vision gives them more time to personalize instruction. "Students seem much more excited about their work when they know it is being viewed without their knowledge," she said. "They try harder, knowing

I could see their work at any time. Students in the far reaches of the room can now get as much attention as those in the front areas."

Tamille Buckell, a computer lab instructional aide coordinator at Santa Fe Middle School in Monrovia, California, also said that teaching with Vision has transformed her computer lab. "The tone of this lab has changed from a place where students call out questions and get frustrated with my inability to help them all to a place where instructions, methods and techniques are modeled first. It's a lot more productive."

Administrators and district tech officers agree. Jayne Beale, Technology Director of the Graham Independent School District in Texas, has seen the benefits of Vision classroom management software both as a teacher and as an administrator. "Vision is a tool that adds so much to the education environment," Beale says. "Teachers can pull up one student's work and show it to the rest of the class. It is so much better than crowding around one computer, which is what we used to do. Vision really helps with student interaction and participation."

REFERENCES

Karasavvidis, I., J.M. Pieters & T. Plomp (2003). Exploring the mechanisms through which computers contribute to learning, Journal of Computer Assisted Learning, 19, 115-128.

Muir-Herzig, R.M. (2004). Technology and its impact in the classroom, Computers & Education, 42, 111-131.

National Center for Education Statistics (2006). Computer and Internet Use by Students in 2003.

NCES (2007). Digest of Educational Statistics: 2006.

NCES (2007). Internet Access in U.S. Public Schools and Classrooms: 1994-2005.

Norris, C., Sullivan, T., Poirot, J., Soloway, E. (2003). No access, no use, no impact: snapshot surveys of educational technology in K-12, Journal of Research on Technology in Education, 36 (1), 15-28.

US Census Bureau (2004). Current Population Survey: October 2003.