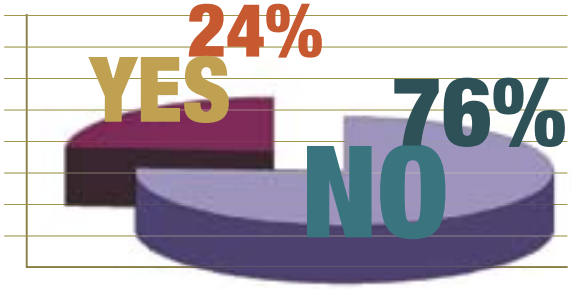
READERS respond

Ubiquitous Computing—Are We Crazy?



We might be crazy, but more than three-fourths of you do think the time has come for every student to have a computer.

It was refreshing to read Scott DeWitt's comments (May 2005, pp. 6–8). Ubiquitous computing is not on an independent trajectory; it is dangerous to promote the idea that as technology changes so society must follow. Technology is not neutral. Thus, it is essential that we understand the effects of ubiquitous computing on our lives, schools, and work cultures—for better and worse. Rather than focus on future technological innovations we need to widen the gaze by placing greater attention on future generations. Thinking about the type of world we want to create for our children, their children and their grandchildren, and so on—instead of the world new ubiquitous computing might create for us—is far more fruitful.

We need to go beyond the social relevance rationale for the infusion of technology in education—that is, teachers have a responsibility to prepare today's students with sufficient digital literacy for tomorrow's world—by bringing into question many basic assumptions about the nature and sustainability of the current world. Although there is no blueprint to creating a better more socially just future for all, new ubiquitous computing is both part of the solution and part of the problem. The real solution resides in listening to what teachers have to say and treating their resistance with respect.

After all, teaching is a moral and ethical profession and resistance is the source of insight. The critics are crucial if we are to establish a common vision of the type of education system and just world an educated citizenry might want to create. In my view, this is not a system that leads to wider gaps in achievement, invests more in ubiquitous computing than the environment, and has the goal of producing information literate workers for the knowledge economy.

Mark Brown, PhD
Senior Lecturer in Educational Technologies
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Ubiquitous computing, in the form of laptops/handhelds/tablets, are here to stay and expand. When Seymour Papert told Angus King the magic only happened when the numbers are 1-to-1, he realized that marching students to a computer lab or making them cycle through a few classroom computers does not provide the possibilities for learning that having your own affords.

Pamela Livingston
Head of Technology
The Peck School
Morristown, NJ

Until ubiquitous computing is the norm in schools, we will not see the transformation of schooling that technology can enable. What if a *New York Times* columnist could only use a computer on Thursdays? What if a biotech researcher could only run experiments for an hour a day?

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"Existing or being everywhere, or in all places, at the same time" I think we can say that technology is ubiquitous but computing may take a person to make that happen. What does ubiquitous computing look like? People using computers everywhere? Computers sitting everywhere, up high, down low, inside, outside, some old, some new, some turned on, some turned off, some used sometimes, some never, and still some doing phenomenal things for kids when we let them steer. If that's ubiquitous computing, we have achieved that in our U.S. schools.

Leslie Flanders
Director of Technology
Scott County (Kentucky) Schools

Living in the global society is not about yes or no/right or wrong. It is time that we begin to think in terms of complex questions with multiple answers and, in many cases, a need to agree to see things differently and/or even disagree. That said, ubiquitous computing is happening … whether or not we agree with it. Therefore, we need to both "educate to think about, deal with and predict consequences," as Scott DeWitt wrote, and "prepare to face challenges in a world we can only imagine … through ubiquitous computing for all students," as Patricia Horn stated. Ubiquitous computing can help us to empower lifelong learners to communicate, collaborate, and celebrate learning.

Suki Lechner
Oranim Educational Institute
Israel

From a social constructivist perspective, there are effective educational strategies that support small-group student learning with limited computing resources. If states provide portable computing for every student, they better support professional development on effective learning strategies and invest in appropriate thinking tools as well. I'd rather see two students collaborating on one computer to build a concept map than individual students browsing a page-turning tutorial on their personal laptops. Success lies in how we use the tools we have, not in having all the tools.

Kevin Oliver
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The question is not whether ubiquitous computing is a "good" or "bad" idea, but whether it is a feasible idea. Technologically, we are in the dogsled era of portable computing, with devices that are too expensive, too limited in capacity, and too lacking in battery life. Give me a sub-$500 machine with a decent 12" display, wireless connectivity, and a 12-hour battery life, and you'd see every child in my district having a computer within five years. I'll let the Cobb Counties try getting to the North Pole of one-to-one computing with dogsleds. I'll wait for the helicopters.

In one sense, student demand has already driven the ubiquitous computing movement. Kids already are wired through cell phones, handhelds, portable gaming machines, etc. It's just that schools have been outside this movement and have not yet figured out educationally sound ways to use these student-appropriated devices. I'd like the tools that would help us catch up!

Doug Johnson
Director of Media and Technology
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Students need to be ready to enter a high-tech workforce in a digital society. Schools should prepare them by providing ubiquitous access to technology (everybody, anytime, anywhere) and a curriculum that takes full advantage of ubiquitous computing. Ready or not, schools need to rethink teaching, learning, and technology integration within a ubiquitous computing framework now.

Mark van 't Hooft, PhD, and the staff of
Research Center for Educational Technology
Kent State University
Kent, OH

Please read *Failure to Connect: How Computers Affect Our Children's Minds—and What We Can Do About IT* by Jane Healy. Although critical, she is not against technology. But she makes the same point that Mr. DeWitt makes: "It is irresponsible to push forward with UC without a systematic effort to understand all of the effects of doing so." We simply do not know enough about how the brain is wired in early childhood to turn a major part of instruction over to computers. Young children may still need the kinesthetic mode of learning that computers do not allow.

Also, it is more important to see *what* people are doing on computers than the fact that people have computers. I had a teacher in my school who was very proud of using computers in the library. The project? Printing out a map of a country and coloring it. Not exactly a great computer project.

This article I think says loads: "Computers in Schools, but Not Always for Teaching" (*CNET*, 29 August 2005, http://news.com.com/2100-1032_3-5844057.html).

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