

Mobility Emerges as the Next Wave of K-12 Education Innovation

Mobile Technology Moves to the Top of the IT Agenda

Wireless computers—whether in the form of laptops, tablets, netbooks or other handheld devices—are everywhere. Even if IT doesn't provide mobile devices, students, faculty and administrative staff are bringing their own tools into the school environment, and they want to know how to use them in an educational environment just like they do at home.

According to researchers from Gartner, "As technology consumerization and mobility has captured the user community—and an economic slowdown has crimped IT budgets—IT leaders in education have become increasingly open to leveraging personally owned devices and to delivering information and services beyond the firewall of their data centers and far afield from their physical campuses."

Consumer demand is but one reason why K-12 education leaders and IT decision makers in schools and districts around the country are now actively evaluating their investments in mobile technology. Just as the Internet represented the last infrastructural challenge for IT leaders in K-12 education, mobility represents the next wave of learning and administrative technology. Mobile devices enable learning anytime, anywhere, and have been shown to enhance the productivity of both teachers and administrators.

Research Points to Educational Gains

The most exciting aspect of mobility tools in K-12 is the opportunity for schools to liberate young learners from the limitations of the classroom. Students no longer need to be tethered to wired desktops or computer labs. In a wireless environment, every site on a campus lends itself to the computing and communication capabilities that can enable, enrich and personalize the learning experience. Mobility is also tied to the goal of 1-to-1 computing, where students have their own computers.

Increasingly, the boundaries of technology-supported learning will no longer even be confined to the campus. Rather, the school, home and other locations will be seen as part of a boundary-less and interconnected learning environment—one that supports both individual and collaborative learning endeavors in powerful new ways.

A recent report produced by the Sesame Workshop urges school IT leaders to embrace the power and value of mobile technology as a force for enhanced learning. "Mobile devices are part of the fabric of children's lives today: They are here to stay," states Michael H. Levine, the executive director of the New York City-based organization. "It is no longer a question of whether we should use these devices to support learning, but how and when to use them."

A growing body of research underscores the power of mobile technology to enhance the learning environment. In classroom studies over the last five years, the Research Center for Educational Technology at Kent State University found that hand-held devices enhance student motivations, engagement and problem-solving abilities. It's thus no surprise that Gartner predicts that education organizations will purchase twice as many slate-like computing devices by 2014 than even laptops or notebooks.

Carly Shuler, author of the Sesame Workshop report, found clear evidence of mobile technology as a supporting tool in the learning process. "While these devices are undoubtedly a source of fun and entertainment, proponents of mobile learning believe they have significant potential to be a key ally in supporting learning experiences," she writes.

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There's also evidence suggesting that students learn more effectively if their learning experiences are not confined to classroom-bound activities. By giving students and teachers 24/7 access to learning resources, they can work at the time and place that best suits them. In addition, cognitive research suggests that students who engage in a single project across a variety of settings improve learning effectiveness. Following are just two examples.

The Fullerton School District, in California, began a 1-to-1 laptop program when the city installed a wireless network in the downtown area, which encompassed the main city library. By providing laptops and wireless access to students, the district helped students extend their learning beyond the school day and provided parity for students who did not have Internet access at home. The program was so successful with middle school students that the district expanded the laptop initiative into certain elementary school classrooms the following year.

The Texas Technology Immersion Pilot (TIP) showed similar results with middle school students who had access to laptops in the classroom. Researchers found that the laptop-enabled students had higher test scores, and that "the effects of technology immersion on reading and mathematics achievement generally become stronger over time as teachers and students become more accomplished technology users."

"The studies are all pointing in the right direction," says Elliot Soloway, a University of Michigan education and computer science professor who studies mobile learning. "We just need more of them."

Mobility Deemed Essential in the Knowledge Economy

Beyond the classroom, administrative and operational staff members can gain enormous productivity benefits from using mobile technology. Not only can they check emails and requests without being tethered to a desktop, they can collaborate with fellow team members in an increasingly unhindered and productive fashion. A principal can walk around school, tablet in hand, and keep track of everything he or she needs.

In addition to equipping students, teachers, and administrators with the right mobile devices, IT departments are focused on supporting these tools with an infrastructure of wireless routers, local area networks and secure access points for access to web-based applications and data. Schools are further developing mobile device policies that protect students and their computers from harm.

"This is the knowledge-worker age, and every knowledge worker has mobile learning, mobile computing; the mobile device is their hub around which all work takes place," Soloway says. "If we're going to prepare kids for the knowledge-work marketplace, then mobile learning's got to be what we prepare kids to use."

Conclusion

Mobility looks to be a pervasive and unstoppable force in the world of K-12 education. But why resist? Research increasingly suggests that mobility can enable personalized learning and enhance educational outcomes. And as the adoption of mobile technology in other industries suggests, mobility is now essential to success in the knowledge economy.

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