

Implications for Future Computer Gaming Technology in K-12

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Educational institutions (Clift, Mulle et al. 2001), with support from the corporate and private sector, have invested billions of dollars to establish technological foundations for future development and its use by a broader audience. At the same time, computer technology is becoming pervasive, precipitating a constant need for improvement through upgrades or replacement of existing equipment in order to compete or stay current with digital information. Many public schools have found themselves investing a substantial amount of their budget into both maintaining and staying current with rapidly advancing methods of instruction.

According to NCES (1999), "In both public and private schools with Internet access, teachers were more likely to have access to e-mail, news groups, resource location services, and the World Wide Web than were students in these schools (p. 46)." With many new available forms of instructional technology, greater diversity in teaching methods and style will materialize. Bimber, Almeroth et al. (2002) contend that no matter what kind of technology will be available, some teachers will use more sophisticated technology than others; some may not use it at all and prefer the old blackboard or overhead. Professionals in our field should see the potential in all available technology, not just the latest hardware and software. Careful examination of the instruction that needs to be delivered can help schools maximize the potential of the equipment they have available.

With the increased emphasis on collaboration and educational equity, the curriculum calls for more computers, faster connections, more software, and new tools to engage students into diverse learning environments. Today's teachers have to meet many individual learning needs, and it is our field's responsibility to help them do so. These changes in the typical school environment are happening in many distinct ways: (a) transitioning from paper and pencil classrooms to computer supported environments which provide students with more activities, (b) replacement of bulky transparencies or overhead projectors for computer screens that allow the potential for seamless modification of instruction, (c) decreased dependence on teacher for access to information, (d) access to asynchronous and synchronous discussions that afford students an alternative to in-class instruction where they can share ideas or dialogue with communities who share their particular interests, and (e) ready access to home-schooling resources.

The application of technology in K-16 is a prelude for students to a more sophisticated instructional infusion of technology as students enter colleges and universities. With the addition of technology standards at the federal and state level (NETS 2005) schools find it crucial to prepare students at the elementary level to complete complex projects. In an effort to support schools, the Massachusetts Institute of Technology (MIT) created a website called Cyber Tutor whose mission is to provide students with assistance for their math and physics homework. According to Newman and Scurry (2001), Cyber Tutor provides students with immediate, and detailed analysis of their performance. The interactive website supplies students with necessary hints where most needed. While at the same time professors have access to the student's profile, and can compare it with the rest of the class in order to provide one-on-one counseling or adjust the lecture based on student needs. As innovative as this technology might seem from the present perspective, many schools have already implemented some sort of internet capacities and applications. In short, the use of the internet for student support is feasible both technologically and pedagogically.

Corporate training and development

The globalization of the economy has brought major changes to business organizations. According to research on e-learning in the corporate sector (Gunasekaran, McNeil et al. 2002), the "US Department of Labor estimates that corporate e-learning revenues are expected to increase from \$550 million to \$11.4 billion, an 83% compound annual growth rate between 1998 and 2003. (p. 44)" Business organizations like educational institutions world wide continue to experiment with changing learner expectations stimulated by technological innovation and increased possibilities for individualized learning. With the advent of the internet as a viable source of learning, and self-paced instruction, there is a greater opportunity for both business organizations to provide learners with more and flexible alternatives. Many institutions continue to converge traditional educational models by using innovative technology to deliver instruction. According to Bichelmeyer and Molenda (2006), the corporate spending for training declined for businesses from 2004 to 2005, possibly due in part to an increase in the use of Web-based or DVD-based delivery. This form of communication can be in a form of simulations and games, online multiplayer, digital satellite radio, pod casting, and internet blogs, which influence our communications and activities to the point where anything is possible. In a similar effort of instructional delivery, web-based music distribution provided Napster® with a large number of loyal users.

Several businesses took advantage of this model to develop other resources such Apple iTunes to legally sell music to a large number of customers world wide. The failure of one organization allowed another to improve their business model approach, and find alternative and an innovative means of promoting their products. Considering the basic principle of Napster®, web retrieval of information can be used for self directed navigation in a well designed learning environment which provides a learner with the ability to construct the resources for their individual needs.

Refer

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