Computer Education Spring 2007

Editor Paul Heinrich

Contents

The future of the learning system? Redefining "system."

Dr Jason Ohler, President's Professor, Educational Technology
University of Alaska

Many years ago I was teaching at a secondary school for "socially maladjusted youth" – a code name for troublemakers – when the first learning system arrived. It consisted of twelve workstations with fuzzy screens and loud keyboards connected to a central computer that contained "drill and kill" courseware: a few paragraphs of text followed by multiple-choice questions. The system was very restrictive: students could not directly communicate with anyone, could not access materials outside the system, and were only allowed to choose answers from prescribed lists of choices, rather than compose answers in their own words. In 2007 systems like these seem as quaint and retro to today's students as swing music and cassette players.

The future of learning systems lies today, as it did then, in repurposing the concept of "system." Learning systems, once closed and self-contained packages, can no longer exist independent of the maelstrom of innovation that permeates all aspects of life. Students are already coming to school wondering how their cell phones, iPods, laptops and other PDAs "dock" with what technology already exists in their classrooms. Further, they come searching for tools and communication environments that typically don't exist within conventional schooling. Effective learning systems will need to address the following:

Information access beyond the learning system

Developers must embed learning systems within the larger information culture of the Internet and associated database systems. Ironically, a learning system's ability to act as information broker and liaison in this context will in large part determine its value as a "stand alone system."

Blending personal and institutional technologies

Students will need to be able to use whatever they are familiar with personally within the context of a school learning system. This allows them to continue "schooling" beyond the school day, and bridge the worlds of school, home and their personal lives.

Online and onsite convergence

More and more, courses are being taken by both online and onsite students, a trend that promises to continue. One hallmark of a learning system's utility will be its ability to work equally well for both populations while differentiating between them well enough to address their unique needs.

Mass customized pedagogy.

Learning systems need to be feature rich and highly adaptable in order to facilitate

the diversity of the learning and teaching styles that will need to be accommodated by evolving student population. "One size fits all" needs to yield to mass customization.

A wide range of social organization possibilities

Learning systems need to be developed as social systems that facilitate collaborative learning. They will need to be nimble enough to quickly adapt personal, small and large group communication processes to a wide variety of learning needs , often involving participants who are not physically present. MySpace and blogs describe the kind of social spaces that students will come to expect, and that their employers will expect them to be able to use.

Facilitating student work in new media format

Any approach to learning, whether utilizing learning systems or not, will need to allow if not require students to "speak multimedia" by creating and posting new media content in response to school assignments. Traditional reports and essays will be accompanied by websites, digital stories, video documentaries and other new media as they emerge.

Students as knowledge generators, not just consumers

Not only will students communicate using non-traditional media, they will do so with the intent of adding to the knowledge base of a learning system, rather than to simply creating material for teacher assessment purposes. Learning systems need to have Wikipedia-like potential, allowing students to generate and contribute resources as well as use them. Clearly, helping students become responsible consumers and producers of information is paramount.

Immersive, gaming environments

There is no question that games and other immersive environments engage students in ways that traditional media do not. We need to remind ourselves that today's game players will become tomorrow's business, education and community leaders. Immersive learning systems will grow, not just because of their commercial appeal, but because of their ability to take advantage of the multi-tasking and problem solving skills that students have developed in gaming environments. To facilitate mass customization, immersive learning environments will be more adaptable than typical gaming environments. Second Life, the web-based virtual community, which grew from 1 million to 3 million members between October 2006 and January 2007, is indicative of where learning environments will head. Rather than a game with a fixed goal, Second Life is a flexible, multi-purpose social environment with gaming features that feel familiar and useful to gamers.

Rapid upgrading and redeployment

How quickly a learning system can integrate new information and technological development may well determine its viability. In describing this challenge, MicroSoft's new chief software architect, Ray Ozzie, stated that the old model for upgrading information systems was pulling the plane into the hangar for an overhaul, while the new model demands fixing the plane midair.

In short, learning systems will have to look and behave as much like the student's native media environment as possible, while being able to adapt the entertainment propensities of new media for educational purposes.

The implications for teachers and teacher training are enormous. If we are to prepare

students for their futures, rather than a past that is familiar to us, then teachers will need the training, encouragement and compensation necessary to lead such a revolution in education. They will need to know how to form partnerships with students who are more much more adept with technology then they are. And they will need to imbue academics with ethics, media literacy, critical thinking, wisdom and other survival skills students will need to live responsibly in the Digital Age. But that is the subject of another article.

Dr Jason Ohler can be contacted at jason.ohler@uas.alaska.edu