

## The Future of Educational Technology in Higher Education

The last two decades in higher ed have moved the focus of the teaching-learning process from instructor input to learner outcomes, and from relatively inert content knowledge to the learners' ability to do something with that knowledge. The classroom is no longer the only learning environment, and no effective teacher can ignore technology's capacity for putting the learner into the educational driver's seat. We will outline in this and the next issue of the *CTL Bulletin* four developments in educational technology that will likely effect significant changes in the next decades of higher education. We start with a brief overview of these developments, and then address the first two here and the remaining two in the next *Bulletin*.

1. Web 2.0 Knowledge Organization Tools

New knowledge organization and production tools, such as Wikis, Social Bookmarking, Blogs, and Podcasting provide the potential for collaborative knowledge construction that is targeted at real audiences. Students can take an active role in this process.

2. Virtual Realities for Case-Based Learning

Virtual Reality Programs offer students authentic performance tasks that resemble real-world challenges and engage them in realistic problem-solving activities.

3. Blended Learning

Instruction can no longer use a "one size fits all" approach. The merging of computer-mediated and live instruction now allows us to optimize every student's personal learning processes and accommodate diverse preferences for pacing and learning style.

4. Electronic Learning Portfolios

Learning happens across the whole curriculum and requires ongoing reflection and synthesis across classes and semesters to accomplish personal growth. E-portfolios can support this in new ways.

### Web 2.0: Collaborative Knowledge Organization Tools

In previous *CTL Bulletins* (#55-57, 61) we have described the educational capabilities of the new Web 2.0 tools. These innovations not only have great potential for improved education for everybody, they also make new demands on helping our students become information-literate. In his recent book, Will Richardson (2009) observes some of the trends and literacy demands that innovations such as Wikis, Blogs, Social Bookmarking, Podcasting, etc. are creating:

Trend #1: To quote Thomas Friedman (*The World is Flat*): "We are now in the process of connecting all of the knowledge pools in the world together." The Internet has become the most comprehensive source of knowledge in history and the go-to-place for anybody seeking information on any topic imaginable.

Trend #2: More and more, the creation of that knowledge is collaborative. Students need to develop the ability to work closely with others in *virtual* environments. Employers have been telling higher education for years that our

graduates need to be able to function in teams. That bar has now been raised: face-to-face collaboration remains important, but students must also be able to collaborate online and around the globe.

Trend #3: Consumers of Web content need to be editors as well as readers. That means that we must teach students to become more *active* consumers of information instead of just passively accepting it as legitimate.

Trend #4: We must be literate in the ways of publishing. Since everyone now can have a voice, instructors must increasingly teach and model the ways in which ideas and products can be brought online.

Trend #5: We need to know how to manage the information that we consume. The good news is: these new virtual tools help us manage information more effectively and efficiently. The bad news: they are also the main culprits for creating the information explosion that needs to be managed.

This new technological potential and these new literacies that technology requires, make learning more learner-centered, more collaborative and much more oriented beyond the classroom.

## Virtual Realities for Case-Based Learning: Authentic Performance Tasks

For decades educators have searched for richer and more realistic (less text-bookish) learning environments, in which students acquire complex skills that typically can only be acquired in real-life. New technologies are making this possible. We can now provide students with problem-solving tasks that closely resemble the real world with its messy complexity that presents too much information, much of which turns out to be irrelevant for the issue at hand. These new simulated environments become the proving ground for students to demonstrate what they have learned.

A variety of tools exist that challenge students to explore complex virtual realities: WebQuests, simulation games, online science labs, virtual field trips, etc (see Bonk & Zhang, 2008). Probably the biggest such environment is "Kelsey," a virtual town recently created by the University of Phoenix. Fictional companies were designed with great attention to detail in order to simulate the experience of working in a typical corporation, school, or government agency. Each fictional entity comes with detailed, simulated scenarios designed by professionals in the respective field.

This virtual town is used for Phoenix's business, information technology, education, and health-care courses, in other words: its usability cuts across a wide section of the curriculum.

- The virtual schools and businesses function like case studies that students use to diagnose and solve typical problems of organizations
- Teachers can have a hundred scenarios and randomly assign them to different students
- Students then have to hunt for data in multiple files, documents, and records, some of them confusing and incomplete, just like in real life
- For example, a student can track an imaginary child's progress from Kelsey's elementary school to community college through files of report cards and e-mail messages between teachers and parents

The advantage is that the software lets students examine an organization at a level of detail not accessible even to most employees. Students can work on cases that have no more disciplinary boundaries. For example, an educational issue can be connected to business decisions affecting the school, health care issues affecting the town, and problems with information technology affecting businesses and schools alike.

### References:

Bonk, C. & Zhang, K. (2008). *Empowering online learning: 100+ activities for reading, reflecting, displaying, and doing*. San Francisco: Jossey-Bass.

Richardson, W. (2009). *Blogs, Wikis, Podcasts, and other powerful web tools for classrooms. 2<sup>nd</sup> edition*. Thousand Oaks, CA: Corwin Press.

University of Phoenix. (2009). *Innovative Education Technology*. [http://www.phoenix.edu/students/how-it-works/innovative\\_education\\_technology.html](http://www.phoenix.edu/students/how-it-works/innovative_education_technology.html)