THE LABORATORY FOR EDUCATIONAL TECHNOLOGY

A research and development group investigating new technologies and developing focused solutions to medical education problems

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PURPOSE

As medical educators, we are challenged to improve physician training in an environment requiring more efficient use of scarce resources while covering an exponentially-increasing body of medical knowledge. Many medical schools look to technology for scalable, cost-effective solutions to this challenge.

The Laboratory for Educational Technology (Lab) is a research and development lab founded in 2001. As a University of Pittsburgh School of Medicine (UPSOM) initiative, its purpose is to investigate new technologies and develop focused solutions for medical education problems.

METHODS

The Lab consists of nine developers, education specialists, and faculty who collaborate with students and educators at UPSOM to conceive, design, develop and maintain web-based applications tailored to medical education needs. The Lab drives medical education technology advances through collaboration internationally with groups like eVip (a European Union virtual patient initiative), nationally with the AAMC and MedBiquitous (an education standards organization), and locally with UPSOM's Curriculum Committee and the Office of Medical Education.

The Lab is supported by internal UPSOM funds and federal, foundation, and industry grants and contracts.

RESULTS

In addition to developing UPSOM's online learning management system, clinical encounter learning log, lecture capture and recording, and online continuing medical education solutions, the Lab has pioneered the following innovations:

Virtual Patient Case Authoring and Playback. Virtual patients are computer-based clinical simulations used for education and assessment where the learner plays the part of a health care provider by interacting with an on-screen patient. Since 2002 the Lab has developed case simulation for learners at all training levels. Recently we developed an easy-to-use, web-based virtual patient authoring and playback system allowing educators to create complex branched-narrative simulations. vpSim is compatible with the virtual patient data standard from MedBiquitous and won the 2009 award for best implementation of a technology standard. It is currently piloted internationally in over 25 institutions by over 100 educators who have created 125 cases.

Collaborative Learning Portfolios. Learning Portfolios are course-, project-, or learner-centered websites allowing faculty and students to collaborate using documents, discussion posts, email alerts, and progress tracking and reporting tools (see screen shot at left). The portfolios are used broadly across the UPSOM curriculum for learning and assessment, including the longitudinal student Scholarly Project, Methods and Logic in Medicine course for developing critical thinking, medical scientist training program (MD/PhD), and various fellowships. The portfolios have helped enhance education and research collaboration at the undergraduate and graduate medical level.

"Just-in-Time" Clinical Learning. As part of a NIH-funded research project to assess and improve under-graduate medical education in palliative care, we created a web-based system that delivers to students and their clinical preceptors "Just-in-Time" learning modules whenever a student logs an encounter with a patient likely to have palliative care issues.

AAMC CurrMIT Export Tool. UPSOM has taken the lead in systematically exporting highly granular data directly from our local online learning management system into the AAMC's CurrMIT (Curriculum Management and Information Tool) database.

CONCLUSIONS

The Laboratory for Educational Technology fosters the discovery, development, and validation of innovative technologies for training excellent physicians through direct collaboration with teaching faculty, professional educators and, most importantly, students.