A USER-DRIVEN, SELF-SERVE WEB-BASED CURRICULUM SUPPORT AND CONTENT DEVELOPMENT TOOL

James B. McGee, MD, Andrew Doben, Jonathan Bickel, James R. Johnston, MD
Laboratory for Educational Technology
University of Pittsburgh School of Medicine, Pittsburgh, PA
(412) 648-9679 E-mail: jbmcgee@medschool.pitt.edu

Background: Medical schools, faculty and students have embraced the World Wide Web as an efficient and convenient method of communication. Most medical schools have utilized this technology to enhance existing curricular materials. However, the demand for online content is typically more than the available technical resources can prepare and distribute in a timely fashion. Commercially available “courseware,” developed for undergraduate education, is limited in its flexibility and adaptability to a medical education environment.

The human resources available to support online content development can limit creation of new content and course resources. Desirable features of a medical school curricular information system include: 1) anywhere, any time, searchable access to all core curricular materials, 2) the ability to add, modify and update online curricular materials without having to rely on technical personnel, 3) a consistent, user-friendly, structured navigation which is both efficient and flexible to meet the needs of basic science and clinical education.

Objective: Create a scalable and distributed online tool to support development of curricular materials by faculty and students independent of centralized technical support.

Methods: The Laboratory for Educational Technology (Lab) developed a suite of interconnected web-based applications to both create online content and manage online course materials. The development team consisted of two medical students, a course director, an informatics fellow and the Lab’s director. Agile programming methods were employed with frequent team meetings, rapid prototyping and continuous testing of applications. Validation of both user functionality and technical requirements was performed at every step. These server-based applications were created using Active Server Pages (programming language) and SQL Server 2000 (database).

Results: The applications and content for the initial course, second year renal pathophysiology, were developed and tested over a six-month period. Two additional courses are under development. Postgraduate training programs and continuing medical education at the School also use these tools. Current applications include:

1. **CourseTool** – create and organize online courses; view either by date or by topic
2. **CaseTool** – create online multimedia teaching cases
3. **ImageTool** – create online image-based learning modules with flashcard, slideshows and interactive laboratories
4. **QuizTool** – create online quizzes for self-assessment; directed remediation; anonymously compare performance to other users

Discussion: This approach to development of web-based education has met the objective of a scaleable, distributed online platform. While participation and utilization by the course directors in the three current courses is high, these so-called “early adopters” may not reflect the level of utilization by other faculty. Formal evaluation and user support will be used to refine the application and facilitate participation.