Next Generation Teaching and Learning – Technologies and Trends

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ABSTRACT

The landscape of teaching and learning has been radically shifted in the last 15 years by the advent of web technologies, which enabled the emergence of Learning Management Systems (LMS). These systems changed the educational paradigm by extending the classroom borders, capturing and persisting course content and giving instructors more flexibility and access to students and other resources. However, they also constrained and limited the evolution of teaching and learning by imposing a traditional, instructional framework. With the advent of Web 2.0 technologies, participation and collaboration have become predominant experiences on the Web. The teaching and learning community, as a whole, has been late to capitalize on these technologies in the classroom. Part of this trend is due to constraints in the technology (LMS), and part is due to the fact that participatory media tools require an additional shift in educational paradigms, from instructional, on-the-pulpit type of teaching, to a student-centered, adaptive environment where students can contribute to the course material and learn from one another. This panel will discuss the next generation of teaching and learning, involving more lightweight, modular systems to empower instructors to be flexible, explore new student-centered paradigms, and plug and play tools as needed. We will also discuss how the iSchools are and should be increasingly involved in studying these new forms, formulating best practices and supporting the needs of teachers as they move toward more collaborative learning environments.

Categories and Subject Descriptors

K.3.1 [**Computers and Education**] : Computer Uses in Education - *Collaborative learning*

General Terms

Management, Measurement, Design, Human Factors, Standardization, Theory

Keywords

Teaching and learning, education technology, social media, participatory media

INTRODUCTION

The landscape of teaching and learning has been radically shifted in the last 15 years by the advent of web technologies, which enabled the emergence of the Learning Management System (LMS). LMS providers such as Blackboard, WebCT, Sakai and Moodle provide platforms for managing course content and creating anytime, anywhere access to that content through the network. These systems changed the educational paradigm by extending the classroom borders, capturing and persisting course content and giving instructors more flexibility and access to students and other resources. However, they also constrained and limited the evolution of teaching and learning by imposing a traditional, instructional framework. Each LMS simply enabled, and guided instructors to provide ("upload") all the course materials. Students were still seen as the end-users or consumers of the information.

With the advent of Web 2.0 technologies, participation and collaboration have become predominant experiences on the Web. The teaching and learning community, as a whole, has been late to capitalize on these technologies in the classroom, perhaps because of uncertainty around how to incorporate them, or due to constraints imposed by the LMS. But lately, there has been more and more buzz around the potential of these Web 2.0 tools technologies to improve education. More people are exploring how the embedded ideas of user-generated content, network effects of mass participation, openness and low barriers to entry can be applied to traditional education axioms like student engagement, interaction in learning, and student ownership and management of learning. (Mason & Rennie, 2008)

In response to the buzz, most of the LMS providers have begun to incorporate tools such as wikis and blogs, but they are one of many, potentially buried or even disabled tools. Even when the tools are available, the majority of faculty rarely uses them. One study demonstrated that 95% of LMS usage involved a set of five core content management and broadcast communication tools, which fit the instructional paradigm, whereas tools that encourage participation, collaboration and a more student-centered paradigm (Wiki, Discussion Boards/Forums) were not used much. (Hanson & Robson, 2004). Use of participatory tools occurs in the "long-tail" of teaching and learning and is often unsupported and isolated. (Severance, 2009)

Part of this trend stems from the fact that participatory media tools require a shift in educational paradigms, from instructional, on-the-pulpit type of teaching, to a student-centered, adaptive environment where students can contribute to the course material and learn from one another. With this shift, learning is viewed as the building of connections within communities and the active creation of meaning and understanding through participation. Coined "connectivism" by Siemens (2004), this model contrasts the tradition student-as-empty-vessel models. With roots in Papert's (1980) constructionism and Vygotsky's "Zone of proximal development" and apprenticeship models of learning (Rogoff, 1990), social and collaborative learning can enable students to construct a deeper understanding of material and lead to outcomes not possible in a strictly top-down learning environment.

This panel will discuss the next generation of teaching and learning, involving more lightweight, modular systems to empower instructors to be flexible, explore new student-centered paradigms, and plug and play tools as needed. We will also discuss how the iSchools are and should be increasingly involved in studying these new forms, formulating best practices and supporting the needs of teachers as they move toward more collaborative learning environments.

PANEL

Charles Severance (*Clinical Assistant Professor, University of Michigan iSchool and former Executive Director of the Sakai Foundation*)

EXPERTISE: Preparing for the long tail of teaching tools, samples of next generation tools and the standards that will make them a successful option for instructors.

BIO: Charles is currently the IMS GLC Affiliates Coordinator and Clinical Assistant Professor in the School of Information at the University of Michigan. Previously he was the Executive Director of the Sakai Foundation and the Chief Architect of the Sakai Project. Additionally, Charles is the Author of the book High Performance Computing, Second Edition, published by O'Reilly and Associates. He has a background in standards including serving as the vice-chair for the IEEE Posix P1003 standards effort and edited the Standards Column in IEEE Computer Magazine from 1995-1999.

Christine Borgman (*Professor & Presidential Chair, Department of Information Studies, UCLA*)

EXPERTISE: Learning and cyberlearning trends, digital scholarship

BIO: Christine L. Borgman is Professor and Presidential Chair in Information Studies at UCLA. She is the author of more than 180 publications in the fields of information studies, computer science, and communication. Both of her sole-authored monographs, Scholarship in the Digital Age: Information, Infrastructure, and the Internet (MIT Press, 2007) and From Gutenberg to the Global Information Infrastructure: Access to Information in a Networked World (MIT Press, 2000), have won the Best Information Science Book of the Year award from the American Society for Information Science and Technology. She is a lead investigator for the Center for Embedded Networked Systems (CENS), a National Science Foundation Science and Technology Center, where she conducts data practices research. She chaired the Task Force on Cyberlearning for the NSF, whose report, Fostering Learning in the Networked World, was released in July, 2008.

George Kroner (*Developer Relations Engineer, Blackboard; Penn State iSchool undergraduate alumni*)

EXPERTISE: Experience from inside the largest commercial LMS platform provider, what next generation Blackboard will look like, open source education tools being developed by Blackboard's developer community, commercial educational tools that plug into Blackboard products.

BIO: A member of Penn State's 3rd class of iSchool students, George joined Blackboard following graduation to pursue his career interest in educational technology. At first a technical consultant, he now oversees a community of almost 2,000 developers who create add-ons, plugins, integrations, and customizations for Blackboard's learning platform that extend its base functionality. His efforts ensure that third party developers, be they clients themselves or partners, receive the support they need to develop meaningful tools that can scale successfully to thousands of users. An avid educational tool developer himself, he continues to contribute code to open source Blackboard plugins as well as manage a global yearly professional development program for Blackboard developers featuring conferences in the North American, European, and Asia Pacific regions.

Note: We are also exploring the option of a fourth panel representative, so we may have an additional perspective to add to the already rich set of expertise and viewpoints.

MODERATOR

Erin Knight (*Masters Candidate at the School of Information, UC - Berkeley*)

BIO: Erin is a Masters candidate at the UC Berkeley School of Information after 8+ years working in the education technology realm. Most of that time was spent at Blackboard, the largest LMS provider in the United States, providing a first-hand view into the inner workings of educational technology development, adoption and limitations. Her last stint there was on the Blackboard Beyond team, developing modular (free) social media plug-ins for the Blackboard Learning System, an experience which sparked a passion and dedication to open, social learning solutions. As a final thesis project at the School of Information, she and her colleague, Nathan Gandomi, are exploring participatory media for education to better understand effectiveness, learning outcomes and pedagogical practices involved.

SUBMISSION AUTHORS

Erin Knight (*Masters Candidate at the School of Information, UC - Berkeley*)

Nathan Gandomi (*Masters Candidate at the School of Information, UC - Berkeley*)

FORMAT

The moderator will guide the discussion by providing a question, topic or trend and the panelists will then share their thoughts and experiences around the topic/trend. The panel will be conducted in this manner through several topics, and then we will open it up to the audience for an in-depth Q&A. The goals are to get different perspectives on each topic, as well as identify areas for the iSchools to explore further and take leadership on.

REFERENCES AND CITATIONS

Hanson, P., & Robson, R. (2004). Evaluating course management technology: A pilot study. *Educause Center for Applied Research, Research Bulletin*, (24), Boulder, CO: EDUCAUSE. http://www.educause.edu/library/ERB0424

Kvavik, R., & Caruso, J. (2005). Study of students and information technology: Convenience, connection, control and learning (Vol. 6). Boulder, CO.: *Educause Center for Applied Research*, Research Study. http://www.educause.edu/apps/er/erm08/erm0740.asp

Mason, R., & Rennie, F. (2008). *E-learning and Social Networking Handbook*. New York: Routledge.

Papert, S. (1980). *Mindstorms: Children, Computers, and Powerful Ideas*. New York, NY: Basic Books.

Rogoff, B. (1990). *Apprenticeship in Thinking*. New York, NY: Oxford University Press.

Severance, C. (2009). Preparing for the Long Tail of Teaching and Learning Tools. *Submitted to International Conference of the Learning Sciences 2010.*

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International journal of instructional technology and distance learning*, 2(1).