Collaborative and Open Technologies and their Impact on Information Systems Instruction

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Collaborative and Open Technologies and their Impact on Information Systems Instruction

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ABSTRACT

The advent of the Internet and subsequent proliferation of collaborative technologies are changing the nature of communication and learning. In response, we will stimulate a debate about the role and desired use of collaborative technologies in the context of education in the IS discipline. In particular, we explore the potential contribution of specific technologies based on our practical experience with them. Furthermore, we propose several design principles of using such technologies and illustrate those using working prototypes that we have developed. Finally, we call for participation and further action in realizing the benefits of collaborative technologies in IS education.

Keywords (Required)
Web 2.0, Open Educational Resources, Collaborative Technologies, IS Education, Open Technologies

PANEL OBJECTIVE

The panel aims to stimulate new thinking about the role of collaborative technology, the potential of its application in the form of technology enhanced learning in the classroom, its anticipated repercussions on our pedagogical practices, and its long-term implication for the impact of IS teaching and the benefits to our community at large.

BACKGROUND AND ASPIRATIONS

Academics have the privilege of instructing the next generation of leaders that will face great issues in an increasingly networked and globalized world. The advent of the internet and subsequent proliferation of social networks are changing the nature of communication in the classroom. Committed teachers should be constantly searching for new tools and technologies that improve their art, and increase student learning. Nonetheless, much of the use of technology in the university classroom has focused on streamlining processes and creating efficiencies. We would like to steer the conversation in another direction following (Kane and Fichman 2009), who enthusiastically envision the boon of learning networks for students.

THE APPLICATION OF WEB 2.0 TECHNOLOGIES IN THE CLASSROOM

Web 2.0 technologies in the classroom have great potential to impact traditional pedagogical models. Web 2.0 is the coined term used to describe the evolving vision of the Web as a place characterized as dynamic, interactive and collaborative. Ideologically, this environment encompasses greater user participation in the development and management of content, which inherently changes the nature and value of that information as more people interact with it (Ullrich et al., 2008).
Several Web 2.0 technologies and applications such as blogs, wikis, social bookmarking, media-sharing services, RSS feeds and mashups, exist to facilitate the interactive vision of the Web.

Given the vast amount of information available on the World Wide Web, it is becoming increasingly important for students to be able to assess and evaluate the validity of this information and assimilate what is useful in their quest for deeper understanding and knowledge. In the spirit of Web 2.0, they also need to become active and thoughtful participants in content creation. This requires a different way of engagement from that supported by traditional means of classroom instruction. We know that students are increasingly using Web 2.0 technologies for social purposes (Salaway, Caruso & Nelson, 2008); what we do not know is how this type of interaction translates into the teaching/learning process.

The application of Web 2.0 technologies in the classroom is just beginning to emerge. Studies show that students widely use the Internet for educational purposes but there is only limited reported use of Web 2.0 technologies to support learning (Crook and Harrison, 2008). Faculty are experimenting with the use of Web 2.0 technologies but that experimentation is typically done by an individual faculty member implementing one or two isolated technologies. No set of standards, listing of best practices or even mapping of the various available Web 2.0 technologies to different types of teaching/learning processes has been defined. To further explore the use of these technologies, we are undertaking an investigation of various Web 2.0 technologies and how they might map to use within the higher education classroom. The focal point of this work is to identify a collection of technologies that will teach students to discriminate among information, allow them to cover subject matter in depth and help them develop skills of self-monitoring and reflection by incorporating current ways in which students acquire information and use Web based communication technologies. To achieve this, the technologies examined must support investigation, analysis, collaboration and dissemination of student work. In the area of investigation, searching technologies, folksonomy and tagging, and shared bookmarking solutions will be examined. Wiki and blogs solutions will be considered to address analysis; Google docs, multi-media sharing or other shared resource options will be explored to address collaboration; and simple mash-up development environments will be explored to meet the needs of dissemination. Specifically the project engages students in the computing disciplines to identify and implement a set of Web 2.0 technology tools that will be incorporated into an upper level biology course. Findings will be reported for review, discussion and critique.

USING A WIKI IN THE CLASSROOM

Collaboration is an objective added to many introductory information systems classes. It helps meet the needs of the workplace, the requirements of the accreditation bodies, and the needs of our students. To effectively teach collaboration, we must teach our students what collaboration is, how the process of collaboration is done, and what tools can support collaboration.

Researchers such as Harris and Rea (2009) have called for the effective use of Web 2.0 tools such as wikis and blogs to increase learning and promote active learning techniques. The effective use of a wiki helps move the responsibility for learning from the professor to the student. With the right assignments, we can help students move from skeptical users who do an assignment because it is one more hurdle to jump in the class, to students who learn to appreciate the concept of collaboration and how technology can promote collaboration. A suggested assignment that meets these criteria is a study guide wiki (Lending, 2010). Students, working in groups, create a study guide that they can use for the final exam. This provides a task where students are truly motivated to collaborate because of the importance they put on the task. They see the value of collaboration as the study guide grows to a useful tool.

SHAREPOINT AS A COLLABORATIVE PLATFORM

Lending and Mathieu (2010) report that 39% of recent graduates from an IS program used SharePoint in the workplace. This is similar to the number reported by McKellar (2008.) Skills in SharePoint are highly marketable (Rowell, 2008). That means that teaching our students to use SharePoint will make them more attractive in the job market. In the introductory Management Information Systems class, textbooks are encouraging the use of SharePoint in collaborative work (e.g., Kroenke, 2011.) The CIS program at James Madison University has been experimenting with the use of SharePoint in that class since 2008.

One of the major downsides of using SharePoint is that it must be installed on a server and the costs to install and maintain are large. To get around that, Pearson Prentice Hall provides a hosted SharePoint site for adopters of various textbooks including Kroenke (2011). The tool must be accessed via Microsoft’s Internet Explorer browser; using Firefox or Safari causes problems.
SharePoint provides excellent collaboration tools such as wikis, surveys, content management, and discussion boards. Once students learn how they work, they can collaborate. SharePoint’s interface is not intuitive and students have problems learning it. For example, uploading a photo to the site to use for your profile, takes creating a picture library, loading the picture to the library and then attaching it to your profile; a fifteen step process. Each semester, numerous students give up before they manage to get their picture uploaded. A typical student finds SharePoint frustrating to learn. It is also not intuitive for the faculty member to set up.

However, given a task that matters to the students (such as the Wiki Study Guide in the prior section), students can appreciate the capabilities SharePoint provides. A very few students progressing to other classes have asked to have access to SharePoint for collaboration in those classes. The vast majority however use easier though less powerful tools such as GoogleDocs.

OPEN EDUCATIONAL RESOURCES FOR THE WORLD – THE “GLOBAL TEXT PROJECT” IN BOLIVIA

The goal of “The Global Text Project” is to create a free library of 1,000 electronic textbooks for students in the developing world. The library expects to cover the range of topics typically encountered in a comprehensive university’s undergraduate programs in four languages: Arabic, Chinese, English, and Spanish. The project is a multi-faceted educational endeavor. While the prime goal is to create a free library of electronic textbooks, there are two secondary goals. The first goal is to engage students in the continuous improvement and globalization of texts through Student Quality Circles (SQC). The second objective is to build a community of student volunteers to help with the production and marketing of books from all over the world.

The Global Text Project was founded by Don McCubbrey, professor at the University of Denver’s Daniels College of Business and Richard Watson, professor at University of Georgia’s Terry College and it seeks to promote the participation of the global academic community and global corporations in creating and sponsoring this library. In the process of building an international community, Dr. Watson visited Bolivia in November of 2009 and together with Dr. Guzman, they presented the project in four different Bolivian universities.

In Bolivia, like many Latin American countries, college students normally do not have access to original and updated textbooks because they are either unavailable or very expensive. The level of book piracy in Bolivia is one of the highest in Latin America. According to the International Intellectual Property Alliance (IIPA) special 301 report (2001), Bolivia represented estimated trade losses of $5.5 million due to book piracy in 2000. A major source of pirated books are those imported from countries like Peru and others are produced locally (IIPA, 2001). Most of the college students use photocopied handbooks from old textbooks from about 10 years ago. In addition, those imported textbooks do not use Bolivian or even Latin American cases or situations as practical examples that could illustrate the basic theoretical concepts. The idea of having books that can be translated, produced, or edited by Bolivian professors and students operating in SQCs and that would be available to the students without infringing copyright laws has been received positively at Bolivian Universities. The process needs to start by creating awareness of the project within the academic institutions and by developing some incentive mechanisms to encourage the participation of their faculty, librarians, and especially students. The panel will discuss some of the reactions, practices, and opportunities created during the diffusion of the project.

AN ALTERNATIVE TO THE COURSE MANAGEMENT SYSTEM: OPEN LEARNING NETWORKS

In the past few years, universities have adopted large course management systems (CMS). While these systems may have collaborative capabilities they have been adopted in a way that reinforces the dominant teaching paradigm, and limits further teaching and learning innovation. Current CMS-based systems fail students in two major ways. First, any content developed for the course is routinely deleted sometime after the semester ends. Often unless students backup all the course information and communication in the CMS a large part of their learning becomes inaccessible. Second, CMS based systems are typically implemented for their effects on organizational efficiency and not for their ability to promote interaction among learners (Mott and Wiley, 2009).

An Open Learning Network (OLN) has been proposed as an alternate to the widely adopted course management system. The OLN seeks to utilize the capabilities of Web 2.0 technologies by giving students and instructors options make content publicly accessible and incorporate their own personal social networking tools. Through such a system, it also becomes possible for students who may not be formally registered in the course to participate and contribute.
PANEL FORMAT

Aligned with the conference theme—“Sustainable IT Collaboration Around the Globe,” the panelists will offer different perspectives on practical considerations of using technology enhanced learning in the IS classroom and their benefits for the IS community. Building on a Town Hall Meeting format, we will invite short commentaries from the editors of the leading IS Education journals and related stakeholders.

Panelists will be limited to a nine-minute opening statement and invited commentators will be limited to a three-minute statement. The session is planned as follows:

Please change your specific topics as you like

• Tim Olsen – Panel overview, rationale, aspirations. Merits of an “open” course design.
• Meg Murray – Investigating the development of a template of Web 2.0 technologies to support classroom instruction.
• Diane Lending – Experience using wikis in the classroom. Experience using Sharepoint as a collaborative platform.
• Bas Smit – Differences between blogs and wikis on group interactions
• Indira R. Guzman – Global text project. Developing a project that develops open educational resources for the world. Reactions about the project in Bolivia.
• Editors of the leading IS Education journals and other related stakeholders - invited commentaries.
• Audience - Q&A, open discussion, comments and suggestions. We seek to engage the audience in the conversation and to allow as many exchanges as possible within the allotted time.
• Jerry Kane - summarizes the emerging themes and concludes the session with a discussion of its implications and potential for curriculum enhancement in the IS field.

We hope that the panel will stimulate new thinking about collaborative technologies in the IS classroom, its immediate application, and its long-term implication for the discipline. We hope to transform the discussion in the AMCIS panel into a sustainable action that will serve the community of information systems researchers at large.

PANEL PARTICIPANTS

Timothy Olsen is a Doctoral Candidate in the Center for Process Innovation at Georgia State University. His research interests focus on the servitization of information technology. In the classroom, he has extensive experience in Problem Based and Experiential Learning, and using “open” course designs.

Meg Murray is an Associate Professor in the Department of Computer Science and Information Systems at Kennesaw State University, part of the higher education system of the state of Georgia. She has extensive experience in both academe and industry in the areas of software design, development and architecture. She specializes in the area of emerging technologies and the development and implementation of those technologies to meet business and organizational needs. Her focus in teaching is to inspire students to create and devise new and innovative ways to implement information technologies to solve real-world problems.

Indira Guzman is an Associate Professor of the Colleges of Information Systems and Business Administration at TUI University, and Senior Research Associate of the NSF funded IT workforce project at Syracuse University. Currently, she is a visiting scholar in Bolivia. Her research work focuses on the impact and role of information technologies and its human resources in organizations and society, information security, and more specifically the cultural aspects of IT and its occupations. As a visiting scholar in Bolivia, she is currently conducting IS research in Latin America. Her corporate experience includes more than a decade of work as an IT professional and consultant. She received a B.S. and M.S. in Computer Science from Donetsk National Technical University, Ukraine, a M.S. in Information Management and Ph. D. in Information Science and Technology from Syracuse University. Her research has been published in journals such as The DATA BASE for Advances in Information Systems, Information Technology and People, Human Resource Management, Women’s Studies, and the Journal of Digital Information.

Diane Lending is an Associate Professor of Computer Information Systems at James Madison University in Harrisonburg, Virginia, USA. Her doctorate is in Management Information Systems from the University of Minnesota. Her research interests are in the adoption of information technology, medical information systems, and information systems education. She has a forthcoming paper on using wikis in the classroom in the Journal of Information Systems Education. Dr. Lending
has written papers published in several other journals including *Computers, Informatics, Nursing; Data Base*; and the *Journal of Computer Information Systems*. Prior to joining academia, she was a programmer, systems analyst, and manager of systems development projects.

Bas Smit is a researcher working at the Department of Business Studies of the University of Amsterdam Business School.

Gerald C. (Jerry) Kane is an Assistant Professor of Information Systems at the Carroll School of Management at Boston College. His published research has appeared in Information Systems Research, MIS Quarterly, Organization Science, Harvard Business Review, DATABASE, Journal of Database Management, and Information & Management. He has presented research at the International Conference of Information Systems (ICIS) and at the Academy of Management Annual Meeting.

**REFERENCES**