An Official Publication of the United States Distance Learning Association



In this
issue the
spotlight is on

Course
Management Systems
in Higher Education

ARTICLES

- ▲ Introduction to Special Section: Course Management Systems in Higher Education
- **▲** Accidental Pedagogy Redux
- ▲ Exploring LiveText as a Technological and Accountability Innovation in a College of Education
- ▲ Integrating an Open-Source Learning Management System (Moodle) in an English Language Program: A Case Study
- ▲ Using the Project Management Body of Knowledge (PMBoK) Framework When Selecting a Learning Management System
- ▲ Using Facebook as a Learning Management System
- ▲ Online Learning Is Not Flat: An Analysis of Online Learning That Promotes Interactivity
- ▲ Training for Teaching Online
- ▲ Yào! iSí! Yes! International Perceptions of Online Education
- ▲ The Shift of Online Learning Into Secondary Schools

COLUMNS

- ▲ Ends and Means
- ▲ Try This
- ▲ Ask Errol!
- ▲ And Finally ...









DISTANCE LEARNING

C-			6	
SP	OTL	IGHT	SECT	IION

ANGELA BENSON, GUEST EDITOR

1	Introduction to Special Section:
	COURSE MANAGEMENT SYSTEMS IN
	HIGHER EDUCATION

Angela D. Benson

5 ACCIDENTAL PEDAGOGY REDUX
Patricia McGee and Colleen Carmean

17 EXPLORING LIVETEXT AS A
TECHNOLOGICAL AND ACCOUNTABILITY
INNOVATION IN A COLLEGE OF
EDUCATION

Peggy Lumpkin

25 INTEGRATING AN OPEN-SOURCE
LEARNING MANAGEMENT SYSTEM
(MOODLE) IN AN ENGLISH LANGUAGE
PROGRAM: A CASE STUDY

Xin Chen, Christa Guilbaud, Hongxia Yang, and Congwu Tao

- 35 USING THE PROJECT MANAGEMENT BODY OF KNOWLEDGE (PMBOK)
 FRAMEWORK WHEN SELECTING A
 LEARNING MANAGEMENT SYSTEM
 Robert Gibson
- 47 USING FACEBOOK AS A LEARNING MANAGEMENT SYSTEM

Preston Parker

ONLINE LEARNING IS NOT FLAT:
AN ANALYSIS OF ONLINE LEARNING
THAT PROMOTES INTERACTIVITY

Cynthia Sistek-Chandler, Denise Tolbert, and Valerie K. Amber

TRAINING FOR TEACHING ONLINE *Robert Davis and Angela D. Benson*

FEATURED ARTICLES

73 YÀO! iSí! YES! INTERNATIONAL PERCEPTIONS OF ONLINE EDUCATION

 ${\it Jennifer A. Linder-Van Berschot \ and \ Elena \ Barbera}$

87 THE SHIFT OF ONLINE LEARNING INTO SECONDARY SCHOOLS

Joseph A. Rapposelli

COLUMNS

ENDS AND MEANS MOOCs: What Are They? Plus 20 Questions We Should Be Asking About Them —by Natalie B. Milman	91
TRY THIS Creating and Using an Online Rubric for Maximum	0.5
Effectiveness —by Errol Craig Sull	95
ASK ERROL! —by Errol Craig Sull	99
AND FINALLY MOOC Madness —by Michael Simonson	104

EDITOR

Michael Simonson simsmich@nsu.nova.edu

MANAGING EDITOR

Charles Schlosser cschloss@nsu.nova.edu

ASSISTANT EDITOR

Anymir Orellana orellana@nsu.nova.edu

EDITORIAL ASSISTANT

Khitam Azaiza azaiza@nova.edu

COPY EDITOR

Margaret Crawford mec@netins.net

ASSOCIATION EDITOR

John G. Flores iflores@usdla.org

PUBLISHER

Information Age Publishing 1600 North Community House Road, Ste. 250 Charlotte, NC 28277 (704) 752-9125 (704) 752-9113 Fax www.infoagepub.com

ADVERTISING

United States Distance Learning Association 76 Canal Street, Suite 400 Boston MA 02114 800-275-5162 x11

EDITORIAL OFFICES

Fischler School of Education and Human Services Nova Southeastern University 1750 NE 167th St. North Miami Beach, FL 33162 954-262-8563 FAX 954-262-3905 simsmich@nova.edu

PURPOSE

Distance Learning, an official publication of the United States Distance Learning Association (USDLA), is sponsored by the USDLA, by the Fischler School of **Education and Human Services** at Nova Southeastern University, and by Information Age Publishing. Distance Learning is published four times a year for leaders, practitioners, and decision makers in the fields of distance learning, e-learning, telecommunications, and related areas. It is a professional magazine with information for those who provide instruction to all types of learners, of all ages, using telecommunications technologies of all types. Articles are written by practitioners for practitioners with the intent of providing usable information and ideas for readers. Articles are accepted from authors with interesting and important information about the effective practice of distance teaching and learning.

SPONSORS

The United States Distance Learning (USDLA) is the professional organization for those involved in distance teaching and learning. USDLA is committed to being the leading distance learning association in the United States. USDLA serves the needs of the distance learning community by providing advocacy, information, networking and opportunity. www.usdla.org

The Fischler School of Education and Human

Services (FSEHS) of Nova Southeastern University is dedicated to the enhancement and continuing support of teachers, administrators, trainers and others working in related helping professions throughout the world. The school fulfills its commitment to the advancement of education by serving as a resource for practitioners and by supporting them in their professional self development. The school offers alternative delivery systems that are adaptable to practitioners' work schedules and locations. School programs anticipate and reflect the needs of practitioners to become more effective in their current positions, to fill emerging roles in the education and related fields, and to be prepared to accept changing responsibilities within their own organizations.

FSEHS—NSU 1750 NE 167th St. North Miami Beach, FL 33162 800-986-3223 www.schoolofed.nova.edu

Information Age Publishing

11600 North Community House Road, Ste. 250 Charlotte, NC 28277 (704) 752-9125 (704) 752-9113 Fax www.infoagepub.com

SUBSCRIPTIONS

Members of the United States
Distance Learning Association
receive Distance Learning as
part of their membership.
Others may subscribe to
Distance Learning.
Individual Subscription: \$60
Institutional Subscription:
\$150
Student Subscription: \$40

DISTANCE LEARNING RESOURCE INFORMATION:

Visit http://www.usdla.org/ html/resources/dlmag/ index.htm Advertising Rates and Information: 800-275-5162, x11 Subscription Information: Contact USDLA at 800-275-5162 info@usdla.org

DISTANCE LEARNING

is indexed by the DE Hub Database of Distance Education.

DISTANCE LEARNING MAGAZINE SPONSORED BY THE U.S. DISTANCE LEARNING ASSOCIATION FISCHLER SCHOOL OF EDUCATION, NOVA SOUTHEASTERN UNIVERSITY AND INFORMATION AGE PUBLISHING

MANUSCRIPT PREPARATION GUIDELINES

Distance Learning is for leaders, practitioners, and decision makers in the fields of distance learning, e-learning, telecommunications, and related areas. It is a professional journal with applicable information for those involved in providing instruction of all kinds to learners of all ages using telecommunications technologies of all types. Articles are written by practitioners for practitioners with the intent of providing usable information and ideas. Articles are accepted from authors with interesting and important information about the effective practice of distance teaching and learning. No page costs are charged authors, nor are stipends paid. Two copies of the issue with the author's article will be provided. Reprints will also be available.

- 1. Your manuscript should be written in Microsoft Word. Save it as a .doc file and also as a .rtf file. Send both versions on a CD.
- 2. Single space the entire manuscript. Use 12 point Times New Roman (TNR) font.
- 3. Laser print your paper.
- 4. Margins: 1" on all sides.
- 5. Do not use any page numbers, or embedded commands. Documents that have embedded commands, including headers and footers, will be returned to the author.
- Include a cover sheet with the paper's title and with the names, affiliations and addresses, telephone, and e-mail for all authors.
- 7. Submit the paper on a CD that is clearly marked. The name of the manuscript file should reference the author. In addition, submit two paper copies. A high resolution .jpg photograph of each author is required. Send the CD and paper copies to: Michael R. Simonson

Editor
Distance Learning
Instructional Technology and
Distance Education
Nova Southeastern University

Fischler School of Education and Human Services 1750 NE 167th Street North Miami Beach, FL 33162 simsmich@nova.edu (954) 262-8563

The Manuscript

To ensure uniformity of the printed proceedings, authors should follow these guidelines when preparing manuscripts for submission. DO NOT EMBED INFORMATION. YOUR PAPER WILL BE RETURNED IF IT CONTAINS EMBEDDED COMMANDS OR UNUSUAL FORMATTING INFORMATION.

Word Processor Format

Manuscripts should be written in Microsoft
Word.

Length

The maximum length of the body of the paper should be about 3000 words.

Layout

Top and bottom margins: 1.0" Left and right margins: 1.0"

Text

Regular text: 12 point TNR, left justified Paper title: 14 point TNR, centered Author listing: 12 point TNR, centered Section headings: 12 point TNR, centered Section sub-heading: 12 point TNR, left justified

Do not type section headings or titles in allcaps, only capitalize the first letter in each word. All type should be single-spaced. Allow one line of space before and after each heading. Indent, 0.5", the first sentence of each paragraph.

Figures and Tables

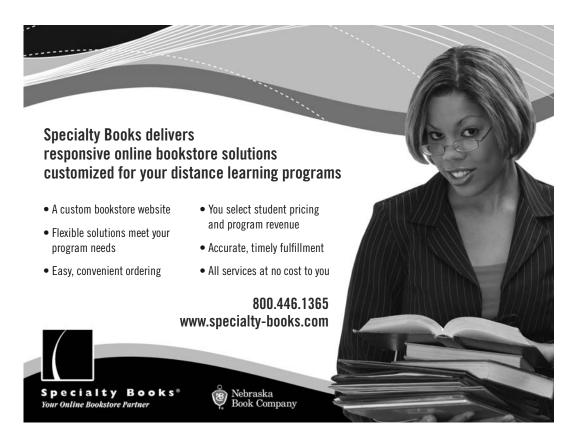
Figures and tables should fit width 6½" and be incorporated into the document.

Page Numbering

Do not include or refer to any page numbers in your manuscript.

Graphics

We encourage you to use visuals—pictures, graphics, and charts—to help explain your article. Graphics images (.jpg) should be included at the end of your paper.



IN UPCOMING ISSUES

How Expensive to Get In? Distance Learning Willie Broussard **Out-of-State Approval Costs**

Georgia Schools: Virtually Here Lynn M. Hawkins

Student Autonomy and Satisfaction Marina Kostina in a Web-Based Foreign Language **Distance Learning Classroom**

Instructional Technology and Distance Education Titilola Obilade in Nigeria: Historical Background and a Critical

Appraisal

Ensuring Challenging Intellectual Programs

Broward Virtual School Nova Lishon-Savarino

Encouraging Critical Thinking Frederick A. Ricci in Distance Learning:

Global Collaboration to Ensure Patient Safety

Sheila Y. Grangeiro Rachel M. Vital

Introduction to Special Section on Course Management Systems in Higher Education

Angela D. Benson

ourse management systems are common on today's college campuses. Blackboard, Desire2Learn, Sakai, and Moodle are among the highly recognizable course management systems being used in higher education institutions. Course management systems are characterized by Jarrahi (2010) as having two primary functions: "(1) content distribution, including management and

Angela D. Benson, Associate Professor,
Department of Educational Leadership, Policy,
and Technology Studies, The University of
Alabama, 328F Graves Hall, Box 870302,
Tuscaloosa, AL 35487-0302.
Telephone: (205) 348-7824.
E-mail: abenson@bamaed.ua.edu

retrieval of materials, and (2) facilitating interaction between academic staff and students" (p. 257).

These systems have become integral to the teaching and learning function of higher education institutions. While course management systems are the primary vehicle for the delivery of the growing number of fully online higher education courses and programs, they also play a large role in the delivery of on-campus face-to-face courses and programs. Faceto-face courses are often supplemented with some teaching and learning conducted via a course management system. These face-to-face courses may use the course management system to house primary and supplementary course content, deliver tests and assessments, or provide space for student collaboration and interaction.

A recent exploratory study by Brown, Hale, and Guo (2012) found that more than 600 articles addressing course management systems in higher education were published across 300+ peer-reviewed journals during the 2008-2012 time frame. They found that more than 75% of this research dealt with teaching and learning (pedagogy), while less than 15% dealt with planning and managing (administration) and the remaining 10% covered the other topics, including the future of course manage-

ment systems. Note that these counts do not include the many articles on the topic that appear in non-peer-reviewed publications. This special section adds to the growing body of literature by providing seven articles on the topic in a single journal issue. The articles showcase the different uses of course management systems in higher education and highlight the support needs of the students and faculty who use them.

In "Accidental Pedagogy Redux," Patricia McGee (The University of Texas at San Antonio) and Colleen Carmean (The University of Washington, Tacoma) provide a historical view of the changing landscape of course management systems in higher education and provide some insight into their future. This article builds on earlier work by Jafari, McGee, and Carmean (2006).

In "Exploring LiveText as a Technological and Accountability Innovation in a College of Education," Peggy Lumpkin (Georgia State University) presents the findings of an exploratory case study that examined faculty members' experiences with the introduction of LiveText, a webbased learning, assessment, and accreditation system. Though LiveText is broadly considered a content management system, Lumpkin describes its use as a course management system by faculty in one college of education.

In "Integrating an Open-source Learning Management System (Moodle) in an English Language Program: A Case Study," Xin Chen, Christa Guilbaud, Hongxia Yang, and Congwu Tao (Virginia Polytechnic Institute and State University), present the results of an evaluation that assessed the effectiveness of Moodle as the learning management system for an English language program. The article includes a learning management system selection survey that may be helpful to institutions and programs choosing a learning management system.

In "Using the Project Management Body of Knowledge (PMBoK) Framework When Selecting a Learning Management System," Robert Gibson (Emporia State University) describes how faculty, staff, and students at Emporia State University are using the PMBoK (Project Management Body of Knowledge) framework to guide their selection of a new campus learning management system. The selection process outlined in the article could assist other institutions in their learning management system selection process.

In "Using Facebook as a Learning Management System," Preston Parker (Utah State University) provides a case description of his experience using Facebook to deliver online college-level courses. Parker posits that students' familiarity with Facebook make it a natural choice for online course delivery.

In "Online Learning is Not Flat: An Analysis of Online Learning That Promotes Interactivity," Cynthia Sistek-Chandler, Denise Tolbert, and Valerie K. Amber (National University) use Steinaker and Leavitt's (2008) Interactive Learning Taxonomy (ILT) to scaffold student learning in a graduate-level technology integration course delivered online via the eCollege learning management system. Interestingly, the capstone project in this online course is the development of an interactive online lesson.

In "Training for Teaching Online," Robert Davis (Missile Defense Agency) and Angela D. Benson (The University of Alabama) present the results of interviews conducted with faculty at a rural community college as they reflect on their journey with online teaching and their institution's role in that journey. The article specifically addresses the dual training that participants received, on using the course management system and in online pedagogy, and how that training was reflected in their subsequent online teaching.

Note: The articles in this special section use the terms *course management system* and

learning management system interchangeably. In cases where the terms have different meanings, the distinction is made within the article.

REFERENCES

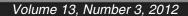
Brown, T., Hale, M., & Guo, Z. (2012, October). Research on course management systems in

- higher education. Lexington, KY: Mid-South Educational Research Association.
- McGee, P., Carmean, C., & Jafari, A. (Eds.). (2005). Course management systems for learning: Beyond accidental pedagogy. Hershey, PA: IDEA Group.

Jarrahi, M. H. (2010). A structurational analysis of how course management systems are used in practice. *Behavior and Information Technology*, 29(3), 257-275.

COURSE MANAGEMENT SYSTEMS ARE CHARACTERIZED ... AS HAVING TWO PRIMARY FUNCTIONS:

- 1. CONTENT DISTRIBUTIONS, INCLUDING MANAGEMENT AND RETRIEVAL OF MATERIALS, AND
- 2. FACILITATING INTERACTION BETWEEN ACADEMIC STAFF AND STUDENTS.



Quarterly Review OF Distance Education

RESEARCH THAT GUIDES PRACTICE Michael Simonson Charles Schlosser An Official Journal of the Association for Educational Communications and Technology

QUARTERLY REVIEW OF DISTANCE EDUCATION,
SUBSCRIBE TODAY!
WWW.INFOAGEPUB.COM

Accidental Pedagogy Redux

Patricia McGee and Colleen Carmean

INTRODUCTION

everal shifts have occurred in the 21st century that have resulted in changes to the design of technology brought into the classroom and course by way of the course management system (CMS). The nature of how courses are delivered is accelerating at a pace reflective of societal changes, technology innovation, and the changing composition of learners now coming to higher education. While late 20th century delivery models were mainly restricted to campus-based classroom approaches, and reflected a digital version of the classroom experience, we now see a broader continuum of course offerings and online pedagogy that have become a mainstay in how higher education offers courses. In response, the CMS that has served as an anchor for these efforts offers a diversity of approach and possibility and is transforming into a *learning* management system.

In 2005, McGee, Carmean, and Jafari published an edited book examining how course management systems can support deeper learning through learner-centered experiences for the higher education community (Course Management Systems for Learning: Beyond Accidental Pedagogy). This work elaborated on Carmean and Haefner's (2002) work that addressed the use of technology embedded within the standard CMS to support learning. From this work, Jafari, McGee, and Carmean (2006) studied applications of the CMS in beliefs and



Patricia McGee,
Associate Professor and Program Coordinator
of Digital Learning Design,
University of Texas at San Antonio.
E-mail: patricia.mcgee@utsa.edu



Colleen Carmean,
Assistant Chancellor for Instructional
Technology, University of Washington Tacoma.
E-mail: carmean@uw.edu

practices across institutions in the United States. This was done by identifying the needs, practices, and preferences of campus and information technology administrators, faculty, support staff, and students. Over the past 10 years much has changed in the landscape of technology used to support postsecondary course delivery. Not only have alternatives to delivering courses with and through technology proliferated, but also so have available, affordable, and accessible technologies. Course management systems now comprise smart machine learner awareness and diverse third-party technologies that sit under the CMS umbrella.

Systems names vary by sector and function; while "course management system" and "learning management system" are used interchangeably, there is a significant distinction between the two terms. Course management system (CMS) generally refers to the constraint of the immediate semester-based class where students are enrolled into a system, content is disseminated and managed, and students participate in activities, as they turn in assignments and take assessments. Learning management system (LMS) is a broader concept that subsumes the CMS to include integration with human resources and other institutional systems, data tracking at learner, course, and program levels, content development, tracking learners across systems/courses, reporting data to other systems, as well as CMS functions (Carliner, 2005; Watson & Watson, 2007). McGee and Green (2008) found that the most popular L/CMS in higher education in the first decade of the 21st century (i.e., Angel, Blackboard, Moodle, Educator, and WebCT) were conceived at a time when mass markets drove how systems worked in an attempt to provide a one-size fits all service that could take the place of instructor-developed web pages with hyperlinks. As markets shifted from broadcasting to narrowcasting with an emphasis on individuals rather than markets, so did systems become more malleable and customizable with plug-ins and add-ons. The CMS of the turn of the century is slowly becoming the LMS of the 21st century as proprietary systems continue to merge and technologies are increasingly integrated in an attempt to be all things to all people.

This article takes a look at the rapidly changing history of technology use shaped by the adoption of the CMS \rightarrow LMS \rightarrow learning platform. It explores design for deeper learning and engagement via the many variations of new environments that are redefining when, where, and the ways we now learn. It traces how the LMS has defined and been defined by new technology-infused practices that liberate learning from the lecture, from the campus, and from the digital boundaries of the course management system.

THE LMS BOX AND LEARNER-CENTERED LEARNING

Twentieth-century CMS models were based on the metaphor of a brick and mortar classroom. Only admitted students could enter, and the door was closed to everyone else. The instructor controlled just about everything: announcements, assignments, assessment, interactions, and discussions. From this familiar structure, the learner responded to well-worn cues and was only allowed to participate in instructor-determined ways. Yet when students were working inside such a system, they were alone and autonomous, at least to the extent that they had no direct supervision, came and went as desired, and made decisions based on their own judgment. It is this dynamic that proved confounding to instructors and learners. Over time, learners recognized the extent of resources and interactions available to them via the Internet at large as they became accidental learners in their quest for information and knowledge, outside of the CMS box. Free, yet confined, alone

(Maeroff, 2004) but with everyone (Shirky, 2008). The shift in access to information, people, and resources truly placed learners in control over what and how they learn.

LEARNER-CENTEREDNESS

Of all of the impacts claimed to be a result of technology use in education, one is definitive: technology puts the learner in the center of learning. Learner-centeredness is indicated by the focus on purposeful interactions, active learning, and teamwork. Much of the pedagogical crafting of twenty-first century instruction has been informed by the American Psychological Association's (1995) 14 learner-centered principles. These principles include factors that are cognitive and metacognitive, motivational and affective, developmental and social, and individual in nature. Educators have often tied these factors to design for outcomes controlled by readings, discussion, and assessment replicating what occurs in the classroom rather than embracing technology enhancements that liberate the learner from traditional pedagogies.

Application within the community moving toward technology as lever were greatly influenced by Arthur Chickering, and with Ehrmann's (1996) thoughtful addition of technology use thereby expanding Chickering's principles so that they could be applied for more engaged and meaningful learning. The challenge lay in crossing deep disciplinary divides: most in higher education were not schooled in pedagogy nor its application in technology. Those in disciplines exploring pedagogy often were distant from technology. Forces aligned to create a CMS that looked and felt like a digital version of the lecture-centric "sage on the stage" (King, 1993) classroom, despite the growing awareness on the part of students that this was in conflict with how they were now seeking knowledge and was perhaps leaving them ill-prepared for the workplace awaiting them (Jafari et al., 2006).

RELEVANT TECHNOLOGY USE

During the late 20th century CMS boom across higher education, society saw equal change in practice across technology adoption in the workplace, in personal lives, and in how we interact with daily life. A rise in smartphones and mobile applications (apps) changed our access to information, making it available all the time (Zheng, 2006); the implementation of collaborative software tools changed the way information workers created workplace knowledge and created greater enterprise value in the practice of knowledge sharing (Cross, 2006); the rise of Facebook, Twitter, MySpace, and tens of social sites for unique interests changed the sense of connectedness and sharing for everyone from previously technophobic preteens to elders (Shirky, 2008). The world changed, and in that change, there was an acrossthe-board request that higher education begin to change with it. Technology that was social, collaborative, and easy to use had infused itself the fabric of American life. An expectation grew that this change would find its way into the practice of teaching and learning in higher education. An exploration and understanding of the shift from the industrial to the information age was demanded of the Academy if learners were to be adequately prepared for the world they would be facing (Rennie & Mason, 2004). Still, society would need to wait a number of years before they saw the transformation of top-down to participatory influence higher education. Despite the case for value, and research on application to deeper learning, the only technology specifically designed for learning—the LMS—was slow to change its inherent framework of teacher-centric design. Indeed, some claimed only the destruction of the CMS would create the needed shift (Madsen Brooks, 2008). Perhaps the new

generation of LMS products—created not by university faculty but by cognitive and learning researchers, instructional designers, and gamers—proved edupunks wrong.

DEEPER LEARNING

In 2002 Carmean and Haefner produced a meta-framework explaining the heart of deeper learning within technology support learning contexts. The work summarized research on engaged and lasting learning. Conditions described in the work are still reflected in current practices described later in this article. With the learner in the center, using technology as a pipeline and for connectivity, deeper learning is enabled through active practice, contextually relevant content and processes, social interaction, engaged particiownership of learning processes and outcomes. The authors further described these conditions:

Active learning involves real world problems through which learners practice and receive reinforcement for their efforts by peers and experts. Images, language, and scenarios should look and feel real and utilize processes in which learners interact. Learning that is contextual requires a learner-centric design as opposed to content-centric where the learner proceeds in a lock-step fashion through content with little or no adaptation or deviation from a content-driven script. Deeper learning requires that the learning design take into consideration the learner's context of practice, ways of learning, as well as experience in the world. What is learned or understood in one context may not be readily transferable to another; which holds implications for how CMS interface, tools, and content looks, acts, and operate. Learning that is social requires feedback and interaction between learners and instructor and, in the case of learning objects; feedback may be situated in the technology as well. For learning to be engaging, it must individualized to consider the learner's

preferences and styles in order to motivate and challenge. Individualized learning provides the learner multiple paths, multiple representations of content, multiple strategies, and multiple options for engagement and motivation to meet one objective. For students to have ownership over learning they must have some independence or a degree self-control that permits them to explore and evaluate new knowledge and this necessitates higher order thinking. Learning that gives the learner ownership allows the learners to make decisions, provides opportunities for independent thinking and reflection. The deeper learning principles indicate a higher degree of learner control, decision making, and organization than exists in current CMS. (McGee et al., 2005, pp. x-xi)

Ten years later, we begin to see a shift as the LMS emerges not as a classroom in a digital box, but as a smart, machine-aware portal into varied third party tools for learning. With systems like Instructure's Canvas LMS becoming an open source system and creating as well as allowing open API access to adding new third-party tools, institutions can leverage the power of social and collaborative media to create paths to more open media: Google, Tegrity, Scribblar, Twitter—whether built-in or added-on, the container is no longer closed.

How might this change the way faculty think about learning? What happens when the familiar box begins to look different and embedded in the framework is the ability and psychological suggestion that digital collaboration and consensus has value? That groups should have workspaces, that communication between participants could be 24/7? That designers have access to single-source authentication technology under the LMS umbrella? Could an LMS 2.0 design shift also shift educational practice and make for intentional pedagogy that reflects the needs and practices of the learner? Could access to these tools, and to smart machine analytics

under the LMS hood create new, learneraware modalities in how we see teaching and learning?

TECHNOLOGY OUTSIDE THE BOX

Established learning management systems, controlling much of the higher education market, have changed and stayed the same. They have added features, but retained the classroom control view of learning. New LMS systems often find it difficult to break from this framework, and on initial view, seem constructed with a transparency that allows instructors to offer old wine in new bottles. Most systems make an effort to be all things to all people, and to provide a one-stop shop for instruction. We have not yet rethought the announcement-assignment-grade book structure. However, limitations and controls that existed in 2005 have significantly disappeared and in reality, users have autonomy, flexibility, and seemingly endless choices about how, what, and where they learn. Information technology departments, in collaboration with vendors, have implemented central tools that are open and solicitous (e.g., wikis, blogs, RSS feeds, Google Docs) and have forced the institution to look at learning as a collaborative venture that occurs both inside and outside the LMS box.

Clearly the bulky and institutionalized LMS has been refined to virtual death, with little opportunity for users to shape or shift how learning, although technologyenhanced, is any different than it was 200 years ago (Jafari et al., 2006; McGee & Green, 2008). Cloud-based tools, on the other hand, have become more ubiquitous, more malleable and more collaborative. External resources allow users to own, create, share, hide, control, and massage both content and process. The role of external technologies (social media sites, visual media sites, Google Apps, mobile media, third party and cloud-based environments) continues to change this new, digital landscape. The very definition of a learning environment, and whether it can be "managed" by a system, is called into question by those advocating for the personal learning environment (PLE), and for institutional access to self-constructed, open, and individualized learning.

PERSONAL LEARNING ENVIRONMENTS

The framework for a new learning environment, explored in Brown and Duguid's (2002) work, depends on the myriad of tools available across technology applications and rests in their rich affordance in social and shared information. The concept of PLE was further explored in Siemens' (2004) writing on the theory of connectivism in which he describes "personal learning networks" to illustrate how learners are connected to each other and knowledge sources through various technologies and that these networks support learning through diversity of thought, currency of information, making connections across information sources, and collaborative decision-making. A PLE is often considered to be a mashup: combinations of different cloud-based tools that are combined to create a unique and personal experience for the engaged learner.

Attwell's (2006) work further defines aspects of design that create the ideal personal learning environment: support for informal exploration, for different learning styles, and for new means of assessing and recognizing what the learner may choose to learn. Each of the definitions depends on ensuring the learner has the digital literacy skills and confidence to seek information in new ways with new and individualized tool selection.

In an age where information is no longer scarce and no longer needs to be organized into containers, the challenge is to leverage the saturated digital world in which learners now live and to assist them in sense-making (Kurtz & Snowden, 2003). In a new knowledge environment, where

information is available when you need it, the authors claim it will be more important to learn how to participate in knowledge exchange, decision-making, strategies for understanding information, and policy-making. Learning theorists claim that knowledge is constructed, and this can only be done by the learner in making sense of his or her environment, finding pattern and meaning in information, and making understanding his or her own (Bransford, Stevens, Schwartz, Meltzoff, Pea, & Roschelle, 2006; Greeno, 2006; Schraw, 2006).

PLEs allow learners to bring together information at their disposal, from any place and with any tool at their access. In this environment, the learner can shape information into pattern and meaning. Learners can construct artifacts that demonstrate their understanding and share this understanding for feedback in new containers for social construction of meaning.

Unlike the structured, classroom-replicating tools of the early CMS environments, PLEs become shaped by their creator. Blogs, wikis, multimedia reflections and artifacts, bibliographic annotations, as well as self-reflections on work, peer critiques, and assignments all become possible reflections of the learner's understanding. Each PLE looks as different as the learners in a course. The PLE becomes the reflection of learners' understanding, interest, and experiences in constructing their path, wherever they are and wherever they do.

MOBILE LEARNING

The birth of the CMS reflected our dependence on centralized technology and the role of big machines hardwired to plugs and tethered by cables. Overnight, that tethering changed as the world went mobile. Students now carry their technology with them. Using technology for just about everything is iconic of the 21st cen-

tury student. Smith, Rainie, and Kickhur (2011) in a Pew Internet report tell us:

- Ninety-two percent of undergraduates and 88% of graduate students in fouryear colleges connect to the Internet through a wireless device.
- Of undergraduates, 89% own a mobile phone, 69% own portable MP3 players, and 64% own a laptop.
- For graduate students, 96% own cell phones, 88% own laptops, and 84% own portable MP3 players.

Mobile learning tears down the metaphorical course walls, enabling students to collect data, collaborate, practice, and clarify understanding wherever they are and not just necessarily with people they have in their directory. MLearning often involves learning apps that store, push, and help to analyze data over periods of time. It gives the learner the ability to redefine "smart" and to know not by memorizing, but by finding information they need when they need it. It destroys not just the framework of a course as fixed in time or in space, but moves the course to everywhere and all the time.

Conceptualizations of the affordance of mobility vary and are evolving. Pahcler, Cook, and Bachmair (2010) see a sophisticated form of mLearning emerging with a focus on the learner in mixed-reality modes in which students experience augmentation to data present in their real world. Frankfort, Salim, Carmean, and Haynie (2012) see mobility as an opportunity to expand mLearning outside the subject matter domain and into awareness for the whole learner—providing deeper understanding of performance, learning needs, and pacing. Such tools that allow deeply immersive and connected learning are available on some mobile devices now and as they continue to grow will offer expanded opportunities to see types of access that students desire. They expand

the LMS container and redefine its reach and form.

THE DESIGN-EMBEDDED LMS

A marked shift in system functionality are the design-embedded tools that allow designers and instructors to make paths for learning based on pedagogy rather than management. Systems such the learning activity management assistant offer smart linking of learning activities, and Blackboard's pedagogical templates support LMS-integrated learning organization that supports learners as they engage in course activities. With embedded design features comes less confusion about course organization, more clearly aligned activities, and, when intentionally used, a greater focus on learning. However, just because design tools exist within the container does not mean that better learning is occurring inside the box. Tools that help the learner understand the learning experience provide the greatest contribution to deeper learning.

Examples of smart design that make it easier for learners to think deeply include smart release of new material based on learner performance, notices and reminders based on submissions, ability for instructors to customize messages based on criteria at runtime (e.g., "send this email to all learners who received 70% or less on the last assignment"), and contextsensitive features that change user views. One interesting but simple change that reflects better pedagogical understanding of the potential of technology is a new feature in the Canvas LMS that hides all previous posts in a discussion thread until the learner has submitted their own. Hiding previous comments until a student has posted facilitates original thinking that is less influenced by what has already been stated, offering a new understanding of technology-supported learning and its place in defining new pedagogical prac-Context sensitive menus tice.

responses that result from individualized learning data are changing the "course in a box" design of the old CMS and moving realization of the individual pacing, needs, and psychology of the online learner.

THE SOCIAL LEARNING CONTAINER

Social technologies are perhaps the most apparent phenomenon to challenge the traditional LMS model of how, when, and where learners interact. Social tools, and our collective response via engagement and shared information and inquiry, have created great possibility and new practices in learner interaction offering just-in-time and -need learning supports. The challenge is to understand and capture these affordances well enough to respond to the demands for digital age outcomes with collective practices (see Table 1).

While the tools of social media will continue to tussle about in the war for dominance, the reliance on and fascination with real time communication is iconic for current college goers in much of their daily life and social interactions. Whether the academy chooses to examine, leverage, and promote sociodigital tools for learning remains the unanswered question.

EXPLORING ACCEPTANCE OF LMS INNOVATIVE PRACTICES

While institutions are coming to rely on the classroom approach to instruction in the cloud, innovation has emerged in spite of the limited progress towards providing a system that genuinely supports learning. In 2005 we stated that, "Most CMS courses are designed through 'accidental pedagogy' (Morgan, 2003) as traditional courses are transferred to the online environments" (McGee et al., 2005, p. xiv). Today LMS offer more sophisticated strategies to organize courses pedagogically, but in general, despite the technical advances, we still see instructor-driven, course manage-

 Table 1. Affordances That Address Contemporary Issues for Higher Education

Issue	Affordance of Social Media	Specific Cases
Sense of belonging (students are new to campus or not feeling connected)	Virtual interactions provide a venue to practice, observe, and engage in learning college culture. They can also provide the learner with a degree of anonymity and ease embarrassment or confusion of not knowing what is expected.	 Google Hangouts: Allows membership and belonging through identification and socialization and places to hang out. Facebook: Creates place for academic social networks within learner's daily connection and community space. Virtual Worlds: Allows students to experience new env ronments with more control of presence, movement, commitment. Twitter: Moment by moment connection and feedback allows for all-the-time participation and connection to others.
Sense of presence (students find attendance on campus difficult due to work schedule/ parking or distance/time constraints)	Anytime/anywhere access can alleviate barriers.	 Elluminate, MediaSite, Echo360, etc.: e-Presentation media allows synchronous or playback of the traditional lecture, enabling lecture moments in an alternative format. Virtual Worlds: Faculty office hours, advising, and mentoring can be offered by scheduled appointment or open drop-in sessions within a virtual environment. Virtual worlds also provide for the learner's social presence in a visual and synchronous format.
Sense of participation (students desire to participate in a community and find connection)	Given limited campus engagement and the lifestyle of our students, social media affords a crucial space and "place" for conversation, events, socializing, and extending campus interactions as well as a place to "walk" as a member of the institution.	 Discussion board: Low-risk tool for creating place for students to engage with class peers when they want. Extends academic conversations and creates contribution space for reflective and non-oral/aural learners. Chat space: Quiet students have opportunity to expres themselves, "meet" like-minded peers in a non-threatening way Virtual Worlds: Campus replication in virtual worlds like Second Life allows students to engage and participate through their avatar
Sense of self-efficacy (perception of proficiency)	Social media has proven to be successful in improving diverse academic skills (writing, critical thinking, collaborating, language skills, etc.) through public presentation of work, feelings of responsibility to others, safe practice of skills.	 Blogging: Students develop a sense of ownership in creating academic work and receiving diverse feedback GoogleDocs: Scholarship improves and students have stronger sense of accomplishment when working as a team. Virtual Worlds: afford culture-specific environments where learners can visit and interact with others. Example: first language learners learn while observing and experiencing culturally specific norms; language development using text and voice communications allows the novice speaker to informally practice—often with native speakers—as they develop proficiency.
Sense of scholarship (perception of skill related to research and academic success)	Leveraging the "we smarter than me" power of social media allows learner entry into a community of scholarship.	 Google Scholar: ranks academic literature by aggregating number of times cited, giving students expert entry and understanding regarding seminal literature and peer value. Wikis: Scholarship improves and students have stronger sense of deep scholarship when part of larger endeavor versus what can be accomplished alone.

ment-focused templates. So what has really changed? How are innovative educators and learners using technologies available within the new LMS or incorporated tools to make learning appealing, engaging, and lasting? For the authors, the shifts are significant: from teacher-directed to learner-directed instructional frameworks, as indicated in trends of blended/hybrid delivery models, the flipped classroom, the bring-your-own-technology (BYOT), and the Massive Open Online Course (MOOC). Perhaps the success of the last is the most surprising to traditionalists in higher education.

A MOOC "builds on the active engagement of several hundred to several thousand 'students' who self-organize their participation according to learning goals, prior knowledge and skills, and common interests" (McAuley, Stewart, Siemens, & Cormier, 2010, p. 10). MOOCs differ from traditional courses in that they are typically free, do not require expressed proof of prior knowledge or preparedness to learn, have little if no expectations of learner performance and do not confer institutional credits for completion. MOOCs may offer assignments, activities, and assessments that look and feel like those associated with traditional courses. MOOCs are offered by organizations that work with experts or notable faculty to provide no-course classes, such as Udemy, or by universities who share course content at no cost, such as Carnegie Mellon, MIT, Stanford, and Yale. While originally considered only for informal and noncredit learning, the University of Texas System is now envisioning MOOCs as a strategy to limit students' educational costs and to expedite 4-year graduation rates (Kolowich, 2012). Using the traditional LMS structure, this nontraditional, participantdriven experience demonstrates how learners can drive their experience without the omnipresent and authoritative instructor.

A second example of change to our understanding of container comes with the way in which pedagogical templates fixed in the LMS container have been discarded for loosely connected tools brought to the learning table by instructor and learner. "Free-range" designs encourage and facilitate student ownership of what they know as documented outside the locked-down walls of the LMS. We are shifting to knowledge construction rather than content delivery, and in this new model of use, students are afforded opportunities to organize resources, connections to people, and tools in ways that make sense and are usable to them (Chatti, Jarke, & Frosch-Wilke, 2007).

A third example of innovative practices within and outside of the LMS can be observed in the way that roles of the learner and instructor have shifted, by virtue of delivery models, the ubiquitous access to anything and almost everything, and emerging theories and practice that force everyone to be both learner and instructor. Most prominently is the focus on social interaction and connectivity that is reflected in multiple and enduring learning theories including brain-based learning theory (Jensen, 2008), constructivism (Perkins, 1991), and Connectivism (Siemens, 2004). Tools such as Wiggio allow students to form their own learning communities with all of the necessary tools that are locked down in the LMS. Indeed, when learning is liberated from grades, all kinds of surprising new opportunities arise. The Zite app allows students to create their own collection of resources around topics of relevance to them and to share with anyone, as do Pinterest, Evernote, and Glogster. Students have become the generators of knowledge, not just the recipient of the professor's expertise. Systems, tools, and practice for meaningful learning continue to evolve, forecasting and piloting the design of future systems, or tools that will allow the customization of integrated tools.

CONCLUSION

The 20th century CMS, now a 21st century LMS, while still a relatively young technology, has reached middle age in a world ruled by youth who prefer systems more portable and flexible. The conflict between generational perspectives about the priority and necessity of the LMS as an institutional fixture requires a negotiated agreement on value, or at least acceptance of use by individual design. This would precipitate a shift from authority by power to authority of consensus within the faculty structure, necessitating a priority on the needs of the learner (Bleed, Brown, Kreis, & McGee, 2004; Carmean & McGee, 2003).

Such a change may not be easy for higher education, but we may be reaching the point where it is a necessity. With learner-centeredness also comes technological relativism (Diaz & McGee, 2005) where previously prescribed ways of learning are not only not accepted they are rejected. Reusability has been core to the LMS, yet relativistic practices prevent scalable reuse as learners make, share, take and modify their representations and documentation of what they know. What can be known changes with each iteration, each learner, and each addition to the shared knowledge experience.

FURTHER THOUGHTS FOR THE DIGITAL FUTURE

So what happens next? Stepping away from narrow problems and entering the sticky, hard-to-solve ones within domains of culture and change resistance suggests multiple barriers. We know that the shift from an industrial economy to a successful information economy has resulted in a requirement that everyone must be literate in complex ways, and it demands institutional ability to embrace new learning outcomes and new ways of learning. Ito et al. (2008) make the case that a technology-driven information economy has created

the need for new, digital literacies. McGee and Green (2008) state that an overabundance of data is surely making an individual's ability to memorize and store data impossible and unfruitful. For these reasons, a learning environment that is balanced and includes experiential learning, guided mentoring, consensus, and collective reflection is highly desirable to the 21st century learner. The academy must change if it is to be responsible to learners and to society's demand for digital fluency and a new way of being in and of the world. Learner-aware, context-sensitive systems, larger in scope than the learning management system but inclusive of its new value as portal to the learner's discovery experience, now exist. They are being used, tested, and validated in personal learning experiences that define the new teaching and learning practices. An accidental pedagogy that grew haphazardly from the marriage of industrial age teaching and information age technology is giving way to the personal, information-rich, and omnipresent sociodigital learning experience. Whether this marriage survives as informed, responsible practice depends on the will and ability of public higher education to recognize its role in producing 21st century citizens and lifelong learners. Time will tell.

REFERENCES

American Psychological Association. (1995). *Learner-centered psychological principles: A framework for school redesign and reform.*Retrieved from http://www.apa.org/ed/governance/bea/learner-centered.pdf

Attwell, G. (2007). Personal learning environments—The future of eLearning? *eLearning Papers*. Retrieved from http://elearningeuropa.info/files/media/media11561.pdf

Bleed, R., Brown, M., Kreis, J., & McGee, P. (2004). *The authority of consensus: Next generation course management systems.* Featured session at the National Learning Infrastructure Initiative Annual Meeting, San Diego, CA.

- Bransford, J., Stevens, R., Schwartz, D., Meltzoff, A., Pea, R., & Roschelle, J. (2006). Learning theories and education: Toward a decade of synergy. In P. A. Alexander & P. H. Winne (Eds.), *Handbook of educational psychology* (2nd ed., pp. 209–244). Mahwah, NJ: Erlbaum.
- Brown, J. S., & Duguid, P. (2000). The social life of information. Boston, MA: Harvard Business School Press.
- Carliner, S. (2005, November). Course management systems versus learning management systems. *Learning Circuits*. Retrieved from http://www.learningcircuits.org/2005/nov2005/carliner.htm
- Carmean, C., & Haefner, J. (2002, November/ December). Mind over matter: Transforming course management systems into effective learning environments. *EDUCAUSE Review*, 27-33. Retrieved from http://net.educause .edu/ir/library/pdf/ERM0261.pdf
- Carmean, C., & McGee, P. (2003, November). Authority of consensus: Next-generation course management system features. Presentation at the 2004 EDUCAUSE Annual Conference. Anaheim, CA.
- Chatti, M. A., Jarke, M., & Frosch-Wilke, D. (2007). The future of e-learning: A shift to knowledge networking and social software. The International Journal of Knowledge Management, 3(4/5), 404-420.
- Chickering, A., & Ehrmann, S. C. (1996). Implementing the seven principles: Technology as lever. *AAHE Bulletin*, 49(2), 3-6.
- Cross, J. (2006). *Informal learning: Rediscovering* the natural pathways that inspire innovation and performance. San Francisco, CA: Pfeiffer.
- Diaz, V., & McGee, P. (2005). Managing knowledge: Learning objects and digital repositories in higher education. In A. Metcalfe (Ed.) *Knowledge management and higher education: A critical analysis* (pp. 147-181). Hershey, PA: IDEA Group.
- Frankfort, J., Salim, K., Carmean, C., & Haynie, T. (2012, November/December). Analytics, nudges and learning persistence. *EDU-CAUSE REVIEW*. Available from http://www.educause.edu
- Greeno, J. G. (2006). Learning in activity. In R. K. Sawyer (Ed.), *The Cambridge handbook of the learning sciences* (pp. 79-96). New York, NY: Cambridge University Press.
- Ito, M., Horst, H., Bittani, M., Boyd, D., Herr-Stephenson, B., Lange, P. G., ... Robinson, L.

- (2008). Living and learning with new media: Summary of findings from the Digital Youth Project. Chicago, IL: The John D. and Catherine T. MacArthur Foundation Reports on Digital Media and Learning.
- Jafari. A., McGee, P., & Carmean, C. (2006). Managing courses, defining learning: What faculty, students, and administrators want. *EDUCAUSE Review*, 41(4), 50-71. Retrieved from http://www.educause.edu/apps/er/erm06/erm0643.asp
- Jensen, E. (2008). *Brain-based learning: The new paradigm of teaching* (2nd ed.). Thousand Oaks, CA: Corwin.
- King, A. (1993). From sage on the stage to guide on the side. *College Teaching*, 41(1), 30-35.
- Kolowich, S. (2012). Texas MOOCs for credit? Inside Higher Ed. Retrieved from http://www.insidehighered.com/news/2012/10/16/u-texas-aims-use-moocs-reduce-costs-increase-completion#ixzz29SpLForE
- Kurtz, C. F., & Snowden, D. J. (2003). The new dynamics of strategy: Sense-making in a complex and complicated world. *IBM Systems Journal*, 42(3), 462-483.
- Maeroff, G. I. (2004). A classroom of one: How online learning is changing our schools and classrooms. New York, NY: Palgrave Macmillan.
- Madsen Brooks, L. (2008). *Introducing edupunks*. Retrieved from http://www.blogher.com/introducing-edupunk
- McAuley, A., Stewart, B., Siemens, G., & Cormier, D. (2010). The MOOC model of digital practice. Retrieved from http://www.edukwest.com/wp-content/uploads/2011/07/MOOC Final.pdf
- McGee, P., Carmean, C., & Jafari, A. (Eds.). (2005). Course management systems for learning: Beyond accidental pedagogy. Hershey, PA: IDEA Group.
- McGee, P., & Green, M. (2008). Lifelong learning and systems: A post-Fordist analysis. *Journal of Online Learning and Teaching*, 4(2). Retrieved from http://jolt.merlot.org/vol4no2/mcgee0608.htm
- Morgan, G. (2003). *Faculty use of course management systems*. Washington, DC: EDUCAUSE Centre for Applied Research.
- Pachler, N., Cook, J., & Bachmair, B. (2010). *Mobile learning: A topography*. New York, NY: Springer.

- Perkins, D. N. (1991). What constructivism demands of the learner. *Educational Technology*, *31*(9), 19-21.
- Rennie, F., & Mason, R. (2004). *The connection:* Learning for the connected generation. Greenwich, CT: Information Age.
- Schraw, G. (2006). Knowledge: Structures and processes. In P. A. Alexander & P. H. Winne (Eds.), *Handbook of educational psychology* (2nd ed., pp. 245–263). Mahwah, NJ: Erlbaum.
- Shirky, C. (2008). Here comes everybody: Organizing without organizations. New York, NY: Penguin.
- Siemens, G. (2004). Connectivism: A learning theory for the digital age. *International Jour-*

- nal of Instructional Technology and Distance Learning. Retrieved from http://www.itdl .org/Journal/Jan 05/article01.htm
- Smith, A., Rainie, L., & Sickuhr, K. (2011). *College students and technology*. Retrieved from http://www.pewinternet.org/Reports/2011/College-students-and-technology/Report.aspx
- Watson, W. R., & Watson, S. L. (2007). An argument for clarity: What are learning management systems, what are they not, and what should they become? *TechTrends*, 51(2), 28-34.
- Zheng, P. (2006). Spotlight: The rise of the smartphone. *Distributed Systems Online*, 7(3).

THE 20TH CENTURY CMS, NOW A 21ST CENTURY LMS, WHILE STILL A RELATIVELY YOUNG TECHNOLOGY, HAS REACHED MIDDLE AGE IN A WORLD RULED BY YOUTH WHO PREFER SYSTEMS MORE PORTABLE AND FLEXIBLE.

Exploring LiveText as a Technological and Accountability Innovation in a College of Education

Peggy A. Lumpkin

INTRODUCTION

ecent initiatives in education focus on reforms and improvements in teacher preparation. National educational initiatives like Race to the Top (2012) place attention on teacher account-

Peggy A. Lumpkin,
Part-Time Instructor, Learning Technologies,
Georgia State University, Middle-Secondary
Education and Instructional Technology,
College of Education, 6th Floor,
30 Pryor St., Atlanta, GA 30303

ability. Race to the Top's fact sheet indicates an intention to support:

Attracting and keeping great teachers and leaders in America's classrooms, by expanding effective support to teachers and principals; reforming and improving teacher preparation; revising teacher evaluation, compensation, and retention policies to encourage and reward effectiveness and increase the number of effective teachers in our schools; and ensuring that our most talented teachers are placed in the schools and subjects where they are needed the most. (White House Press, 2012)

An important element in accountability for reforming and improving teacher preparation is the accreditation of teacher education programs. An important component of teacher preparation is promoting appropriate methods to integrate classroom technology (Bai & Ertmer, 2008). NCATE determined in 1997 that the majority of teacher education programs were not effectively preparing teachers to use technology in the classroom (Shoffner, Dias, & Thomas, 2001). National Council for Accreditation Teacher of (NCATE) recommended that technology

17

education be central to the teacher preparation process (Shoffner et al., 2001). In 2000, the International Society for Technology in Education published National Educational Technology Standards for Teachers. This increased call for technology integration in teacher preparation programs was eventually translated to the state and university level. Standards set by the National Council for Accreditation of Teacher Education (NCATE, 2012) stress the importance of technology integration for teachers.

The purpose of this study was to explore faculty members' experiences with the introduction of LiveText as a technological innovation in a college of education. LiveText (2009) is a web-based learning, assessment, and accreditation system. The terms content management system (CMS) and learning management system (LMS) are often used interchangeably. The term content management system is used to discuss these applications in this article. A CMS is designed to support academic courses. LiveText is one of a class of applications (i.e., Taskstream, Folio Live, and others) that links students' artifacts (eportfolios, projects, and documents) to appropriate content and institutional standards. Simultaneously, these same artifacts allow faculty to access student work, provide online feedback, and allow a college of education to collect and aggregate data for program evaluation and improvement (Lombardi, 2008). LiveText is a CMS that allows faculty to configure a learning space for students. Within LiveText, faculty members create space for students to upload assignments, to add artifacts, and to provide opportunity for self-reflection. In attention, faculty can assess students' work using rubrics to evaluate students' work. Rubrics in LiveText also track students work based on standards for both content and NCATE standards. LiveText offered learning solutions for students, course management solutions for faculty, and a way for administrators to document

compliance with accreditation standards. Therefore, faculty members learned from both administrative and educational tools in LiveText.

With the increased use of online accreditation and e-portfolio systems, Wilhelm et al. (2006) compared the implementation of e-portfolio systems at three universities. The e-portfolios systems were Taskstream (2011). LiveText (2011), and an "in-house" locally created system. Both Taskstream and LiveText were described as customized systems that used a web-based database for the storage and retrieval of student artifacts, faculty accreditation, and evaluation data (Wilhelm et al., 2006). The third university used a general tools system of word processing software, multimedia authoring tools, and portable document format, to create artifacts. Artifacts were stored on CDs, disk drives, or online space provided by the university. The researchers discovered that no one solution fit all the needs of departments across the universities studied. Taskstream and LiveText had an advantage over the general tools system because of their archival capacity.

The ability to integrate teaching and learning with applicable standards made LiveText an appropriate option for this case study. E-portfolios are congruent with standards-based reforms in teacher education (Wilhelm et al., 2006). Standards define what students should learn and therefore what teachers should teach. For instance, a math standard would specify a grade level and age to teach the multiplication tables.

Using LiveText as a CMS provides evidence that students' work meets educational standards as outlined by accreditation agencies. Colleges of education use the same materials to document institutional and program accreditation processes. Exploring how faculty members processed learning about and implementing a system that possesses dual functions of both student assessment and institutional assessment.

METHOD

Six participants were selected from one department of All Star Research University's (ASRU) College of Education using purposive sampling. The selected department prepares teachers for positions as middle and high school teachers. Participants possessed 1 to 5 years of experience using LiveText at the time of the study. Participants taught mathematics, science, literand language arts. educators are responsible for the training of future teachers as role models for both preservice and in-service teachers (Ertmer, 1999; Groves & Zemel, 2000). A case study, as "an intensive, holistic description and analysis of a single instance, phenomenon, or social unit" (Merriam, 1998, p. 21) was chosen for this study as the most appropriate means of exploring faculty members' perceptions, beliefs, and experiences of technological innovation adoption. Therefore, this study adds to the research on teacher educators and technology integration. The study addressed the following questions:

- How do faculty members experience a technological innovation adoption process?
- 2. What are faculty experiences with LiveText as a technological innovation?

The primary method of data collection was individual in-depth interviews, which were used to explore faculty experiences with technology innovations. NVivo 8 (QSR International, 2008), a computer-based statistical analysis program, was used to assist in data analysis. These interviews uncovered individual faculty experiences, attitudes, and preferences with LiveText as a technological innovation.

The study used an inductive method to explore the data collected. As data were collected, the constant comparative method was used to analyze the data to discover how faculty understand and cope with the introduction of technology. In

addition, Hurt, Joseph, and Cook's (1977) Individual Innovativeness Scale was administered to determine the faculty adopter categories.

In-depth interviews covered both aspects of LiveText's features. For example, standards developed by NCATE for institutions involved in professional teacher education are a part of the LiveText application, as well as the ability for students to upload artifacts and create e-portfolios.

NVivo 8 was used to perform initial data analyses of transcripts with the partial use of word processing (Microsoft Word) and concept mapping (Inspiration) applications. Three levels of coding were used as described by Miles and Huberman (1994): data reduction, data display, and drawing conclusions. These levels allowed for the sorting of raw data that eventually resulted in emergent categories and themes.

Data reduction includes the process of selecting, focusing, abstracting, and transforming data from field notes or transcripts. Data reduction strategies used open coding, axial coding, and selective coding from grounded theory (Glaser & Strauss, 1967). Open coding served to identify, define, and code words, phrases, incidents, and events found in the interview transcripts. Ideas, words, or phrases were provided with a code that represented an underlying concept. Axial coding provided a way to make connections between incidents, ideas, and events identified through open coding. Grouping coded data based on shared characteristics formed categories. Next, selective coding allowed for the integration of categories into themes that were then used to provide a picture of the meanings that participants used to construct their experiences. NVivo 8 facilitated open coding and axial coding using NVivo's node and set functions respectively. Microsoft Word's table function and Inspiration's concept mapping function provided the means for data display that facilitated the creation of themes.

RESULTS

Six categories emerged from coding using inductive methods of pattern recognition and constant comparative method (Glaser, 1978; Glaser & Strauss, 1967) as detailed in the methodology section. These categories are (Lumpkin, 2012):

- 1. Triggers, crises, and challenges:
 - (a) Provided context for the introduction of an innovation.
 - (b) Described an incident or event that marks the beginning point at which people start to explain the beginning of a phenomenon. It can also be referred to as an initiating event.
- 2. Awareness-introduction to solution:
 - (a) Awareness refers to the revelation of a weakness or gap in the way processes were managed either during the event or an evaluation after the event.
 - (b) Solutions are explored to deal with the weakness or the gap.
- 3. Faculty development (formal and informal training):
 - (a) Solutions are introduced and personnel are trained to use the application.
- 4. Institutional accreditation and assessment:
 - (a) Some issues this product was implemented to solve were institutional concerns.
- 5. Facilitation of student learning:
 - (a) Some issues this product was implemented to solve were programmatic concerns.

- 6. Emergence of a departmental expert/advocate:
 - (a) Someone is appointed or emerges as an expert.

CATEGORY 1. INTRODUCTION, TRIGGERS, AND CHALLENGES

The circumstances surrounding the events during the NCATE audit highlighted deficiencies with workload, workflow, and document management (Lumpkin, 2012). At this preintroduction stage, there was no solution in place to handle the challenges of participating in the trigger event. Dr. Cranston remembered challenges in reviewing student artifacts developed for both student and institutional assessment done manually with hard copies of student portfolios:

It was a department decision because we were using—for student portfolios—three-ring binders. Our department decided we wanted to go to electronic portfolios. It sounded good at the time because we were all using portfolios. The department wanted to use it, to pull all the graduates in, and we decided to look at it. (p. 65)

Dr. Marlowe also provided a view of workload challenges:

We were still, as faculty, evaluating each portfolio. It would take me between two to four hours to evaluate a portfolio. Then you send it back to the student, and then they make revisions and send it back to you and you review it again. It is a very long, tedious process, and if you have a large program, and at the same time our programs were growing, and instead of having 10 students, you had 60 students in the program. So evaluating the students' portfolios had become an impossibly large task. (p. 65)

The NCATE review marked a turning point and served to uncover the need for

changes in workload and document management.

CATEGORY 2: AWARENESS— INTRODUCTION TO SOLUTION

This stage is distinguished from stage one because there is an application from a vendor that promises to address the problems identified in stage one. Before Live-Text, students collected paper-based artifacts illustrating their work in three-ring binders. After LiveText, students created electronic or e-portfolios. What follows are some representative memories from this transitional stage:

Dr. Marlowe recalled her introduction to LiveText:

The first time I learned about LiveText, Dr. Wilson (pseudo.) introduced it to the department. She was doing some checking around. I am not sure where she went, but she compared several different programs and was very excited about LiveText. She brought some representatives from the company here. They introduced it to us, showed us a PowerPoint presentation, and talked about what it could do for us. (p. 66)

Another step in the awareness-introduction categories involved the actual decision to use LiveText. None of the participants considered themselves agents in the decision to approve the application:

Dr. Cranston:

Our department decided we wanted to go to electronic portfolios. It sounded good at the time because we were all using portfolios. The department wanted to use it to pull all the graduates in, and now it is a mandate.

Faculty members demonstrated awareness about the importance of benchmarking standards and shared details about this function provided by LiveText.

Dr. Marlowe:

That is the main thing we use it for here, for portfolios and for course management. So we used it for portfolios for a few years, then they introduced course management.

Also, we found that students were just putting things in their portfolio that they had already done for their classes. So when LiveText came out with their course management system, it has a way to assess students' work and generating reports on their work as they go. So we try to streamline the portfolio process and make it a more meaningful process, so the students aren't just taking the things they've done before and regurgitating it into the portfolio. Because they have already done that, faculty members have already evaluated it. So it was an important and necessary step to cut down on the busywork for faculty.

That's the most important thing from an administrative standpoint. That's what we use LiveText for, to generate reports for NCATE. (pp. 71-72)

CATEGORY 3. FACULTY DEVELOPMENT: FORMAL AND INFORMAL TRAINING

Formal training refers to training that is organized and presented by the college or department. Often training involves vendor trainers. Dr. Andrews shared her experiences:

When I first came to ASRU that September, we had our first training with Live-Text in a face-to-face workshop. The second training was online. I think Live-Text is user friendly enough once you get used to it and have basic training. (p. 68)

Informal training involves peer-to-peer training among faculty members. At other times, students in the program may show faculty members how to use an application. Dr. Andrews relates, "He was a PhD student who graduated last year. I watched him in a one-to-one session, and once I got the hang of it, I was set" (p. 68).

CATEGORY 4. INSTITUTIONAL ACCREDITATION AND ASSESSMENT

An NCATE accreditation and assessment audit facilitated LiveText's introduction. Faculty members reported their understanding of how that process facilitated introduction of LiveText.

Dr. Cranston:

That is the main reason we are using it: because it has a means to capture data about the student, so we can benchmark them in our program. Therefore, for every program we have standards. You are asking a question we are all grappling with right now so you are ahead of us in even asking these questions. We have program standards. We benchmark and make sure the students are meeting the standards. We look at an alignment of the program and we look at whether the students are meeting those standards.

In LiveText, they can upload artifacts and they can upload where they can talk about a narrative and how that responds to their growth across a standard, or maybe several standards and their artifact, shows evidence of that growth. These are collected in LiveText. That is how it is benchmarked because that is how the program is divided up. We are going through changes now in trying to work with the different conceptual frameworks and alignment. (p. 71)

CATEGORY 5. FACILITATING STUDENT LEARNING AND ASSESSMENT

The category of student learning and assessments encompasses the other gap shown by the NCATE review: a need to find an easier way for students to create artifacts that demonstrated that they met program standards. The faculty members use LiveText to teach and create artifacts that verify that meet standards. The following are some examples of faculty members' facilitation of student learning:

Dr. Andrews:

One class I teach is a hybrid and other courses are completely online.

I will use LiveText for working on classes where students are working on pieces that are going to be in their e-portfolios. I pretty much set up the course with an overview, objectives for the course, and the expectations. Then I try to divide the course into modules. I make it a part of the course assignments for LiveText, and once they finished with that and I evaluated it, they go into the template for the exit portfolio.

Most of my classes, they are full semester courses. They may have anywhere from 10 to 14 modules to complete, and within those 10 to 14 modules they are developing and constructing artifacts for the exit portfolio.

I just did a session for the online degree program on LiveText on Tuesday. I went to the MSIT website and just went to the area that said LiveText and used those documents and talked the students through the process, and then I opened up my desktop in Elluminate and actually built a portfolio using LiveText.

Therefore, I think we do an excellent job of orienting our students to LiveText. We graduated some students who did not have a problem using software. They had some other issues. The use of the software was not an issue.

That is one of the things I pride myself on is when you come onto the class I have everything built so you know what the entire course is about. Therefore, it is like a construction process where they are continuously building until they have finished everything and they are ready for graduation. (p. 70)

Faculty members from this study are familiar with the importance of benchmarking standards and shared details about this function provided by LiveText.

Dr. Marlowe mentioned the importance of LiveText for both benchmarking standards and as an online course management system. The course management system represented a recent addition to the functions available from this product: That is the main thing we use is for here, portfolios, and for course management. Also, we found that students were just putting things in their portfolio that they had already done for their classes. Therefore, when LiveText came out with their course management system, it has a way to assess students' work and generating reports on their work as they go. Therefore, we try to streamline the portfolio process and make it a more meaningful process, so the students are not just taking the things they have done before and regurgitating it into the portfolio. Because they have already done that, faculty members have already evaluated it.

Therefore, it was an important and necessary step to cut down on the busywork for faculty. That is the most important thing from an administrative standpoint. That is what we use LiveText for is to generate reports for NCATE. (p. 72)

CATEGORY 6: DEPARTMENTAL EXPERT-ADVOCATE

A departmental expert-advocate emerged as a category based on participant's observations. The emergence of a departmental expert or advocate occurred after initial training sessions were completed for LiveText. Dr. Marlowe, by her own admission and in the eyes of others, emerged as a leader and advocate for LiveText (Lumpkin, 2012). She described her conflicts and triumphs as she learned this application:

It's kind of learn as you go, so the more frustrated I got, the more I would dig in and try to find the answers. At some point, people were coming to me for the answers. Somehow, I got the nickname of the LiveText guru, long before I deserved it. (p. 72)

Dr. Marlowe's facility with using Live-Text added to her desire to share her enthusiasm for the program. It has led her to develop her own training online and offline: The more I use it the more I like it. I really do. I think it does much more than faculty and students are aware. It is just a matter of time. I would love to do a lot more training sessions, create more videos, and, of course, there is a mess of new people coming in. I would like to get more efficient about training faculty and students.

At the end of each assessment period, I run a report and I send those reports back to the faculty so they can see the results of the assessments for their program and they can use those for a number of things—most practically for PAR reports and gathering data for NCATE. (p. 73)

SUMMARY

CMSs serve to facilitate teaching and learning of content in higher education. A subset of CMSs are dedicated to facilitating institutional accreditation requirements, although faculty implemented LiveText based on a necessity to meet NCATE requirements and by extension to fulfill pressures for greater accountability in teacher education. In addition, this research outlined a process of adoption/ implementation that also acknowledges the feeling, attitudes and beliefs that faculty members hold throughout these events. Consultation with faculty members concerning an adoption of any technological innovation is important for the success of the innovation. Acknowledging and supporting faculty members as originators or discoverers of technological innovations is important to the success of technology adoption.

REFERENCES

Bai, H., & Ertmer, P. A. (2008). Teacher educator's beliefs and technology uses as predictors of preservice teachers' beliefs and technology attitudes. *Journal of Technology and Teacher Education*, 16(1), 93-112.

Ertmer, P. A. (1999). Addressing first- and second-order barriers to change: Strategies for

- technology integration. Educational Technology Research and Development, 47(4), 46-61.
- Groves, M. M., & Zemel, P. C. (2000). Instructional technology adoption in higher education: An action research case study. *International Journal of Instructional Media*, 27(1), 57-63.
- Glaser, B. G. (1978). Theoretical sensitivity: advances in the methodology of grounded theory. Mill Valley, CA: Sociology Press.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory*. New York, NY: Aldine.
- Hurt, H., Joseph, K., & Cook, C. (1977). Scales for the measurement of innovativeness. *Human Communication Research*, 4(1), 58-65.
- LiveText Inc. (2009). LiveText Accreditation Management System. Retrieved from https:// www.livetext.com/
- LiveText Inc. (2011). LiveText Accreditation Management System. Retrieved from https:// www.livetext.com/
- Lombardi, J. (2008). To portfolio or not to portfolio: Helpful or hyped? *College Teaching*, *56*(1), 7-10.
- Lumpkin, P. (2012). College faculty experiences with technological innovation: An exploratory

- case study (Doctoral dissertation). Retrieved from http://digitalarchive.gsu.edu/msit diss/
- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.
- Miles, M., & Huberman, A. (1994). *Qualitative* data analysis: An expanded sourcebook (2nd ed.). Thousand Oaks, CA: SAGE.
- QSR International. (2008). *NVivo 8 Getting Started*: Burlington, MA: QSR.
- Shoffner, M. B., Dias, L., & Thomas, C. (2001). A model for collaborative relationships between instructional technology and teacher education programs. *Contemporary Issues in Technology and Teacher Education*, 1(3), 395-411.
- Taskstream. (2011). Taskstream. Retrieved from https://www.taskstream.com/pub/
- White House Press. (2012). The race to the top [fact sheet]. Retrieved from http://www.whitehouse.gov/the-press-office/fact-sheet-race-top
- Wilhelm, L., Puckett, K., Beisser, S., Wishart, W., Merideth, E., & Sivakumaran, T. (2006). Lessons learned from the implementation of electronic portfolios at three universities. *Techtrends*, 50(4), 62-71.

Integrating an Open-Source Learning Management System (Moodle) in an English Language Program

A Case Study

Xin Chen, Christa Guilbaud, Hongxia Yang, and Congwu Tao

INTRODUCTION

n east coast institute will open a new English language program (ELP). It will have two campuses located in the same state. An effective learning management system is urgently needed to meet their instructional needs.

At present, they are not using a learning management system (LMS). Instead, they are using various other technologies



Xin Chen,
PhD candidate,
Virginia Polytechnic Institute
and State University.
E-mail: chenxin@vt.edu



Christa Guilbaud, Technology Integration Specialist, International School of Dakar. E-mail: christa@isd.sn

offered by the university to generate grade reports and track class attendance. Their current process is time consuming, repetitive, cost-ineffective, and at various times inconsistent. Another complaint is that students are not able to assess their school performance with real-time teacher feedback. Additionally, in order to comply with immigration laws, international students must adhere to a strict attendance policy. There have been reports of students being counted as absent for a whole day when they may have been only late. This can be very problematic. With increasing enrollment, these issues are becoming more complicated. They desire a system that offers greater grading flexibility, allows for ease of communication and collaboration administration. among teachers and reports and tracks student progress efficiently, and offers methods for course control.

Although many commercial LMSs are available, such as "Blackboard," they are very costly. More and more institutions chose to use open-source systems to take

the advantages of cost efficiency and functionality (Wheeler, 2004). Similarly, Moodle was adopted by ELP to solve the problems mentioned above as well as meet the requirements. The word "Moodle" is the short form of modular object-oriented dynamic learning environment. It is a free, open source, online LMS. There are no associated license fees and the content, design, and tools provided are driven by the needs of Moodle user community (Moodle, 2010).

DESCRIPTION OF THE STUDY

The primary goal of the ELP is to prepare international students for university admission through a rigorous and progressive series of intensive English courses. They desire a system that enhances communication, collaboration and across the board consistency of processes.

In this mixed-method study, the researchers intended to evaluate the use of Moodle in ELP. Many studies have been conducted to explore students' opinions of



Hongxia Yang, PhD candidate, Virginia Polytechnic Institute and State University. E-mail: hyang08@vt.edu



Congwu Tao,
PhD candidate,
Virginia Polytechnic Institute
and State University.
E-mail: tcongwu@vt.edu

using Moodle (e.g., Carvalho, Areal, & Silva, 2010; Wood, 2010). We addressed the use of Moodle from a different perspective; that is, from opinions of faculty and administrative staff.

RESEARCH QUESTIONS

The purpose of this study was to find out what were the perceptions and experiences of teachers and administrators in their use of Moodle and to assess the technological affordances of Moodle. The results were used as part of the decision to determine whether Moodle would be implemented as their learning management system. More specifically, this study answered the following questions:

- 1. What are the ELP instructors' needs in terms of a learning management system?
- What are the technological affordances of Moodle, particularly in light of ELP instructors' needs?
- 3. To what extent does Moodle meet the identified learning management system needs of ELP instructors?

METHODOLOGY

SAMPLE

The ELP consisted of the director, two associate directors (one for each ELP location), one ELP administrator and seven instructors. To obtain a sample that is representative of the entire group, all of them were given the survey and encouraged to fill it out. All key stakeholders (director and associate director of the ELP) were invited to participate in the focus group interview. The formative interview was conducted with the site contact and one of the instructors at the ELP.

DATA COLLECTION

Data collection methods used in this study were the formative interview with two ELP representatives, an e-mail interview with a current Moodle user, a survey, a focus group interview with ELP administers and instructors, and a Moodle assessment rubric.

DATA ANALYSIS

Qualitative data were coded and integrated by three of four researchers in two rounds. The first round was individual coding, and the second round was collaboratively reviewing the codes of each other to reach a consensus. Quantitative data were statistically analyzed by calculating means, frequencies, and standard deviation.

RESULTS

RESULTS OF THE FORMATIVE INTERVIEW

Two representatives from the ELP program described their current process of administrating students as time-consuming, repetitive, cost-ineffective, and at times inconsistent, since they were not using any LMS. Another complaint was that students were not able to assess their school performance with real-time teacher feedback. They expressed that they needed a tool that offered flexibility in grading, allowed for ease of communication and among instructors collaboration administration, reported and tracked student attendance and progress efficiently, and offered methods for course control.

RESULTS OF E-MAIL INTERVIEW WITH A CURRENT MOODLE USER

The participant had approximately a year of experience with using Moodle. She referred to Moodle as a user-friendly learning management system, capable of addressing a variety of instructional needs. She preferred the feature of private grades checking, the capacity to handle large files, and collaborative learning. She also raised

some minor concerns. First, the Moodle user must create their own database of students' IDs. Second, the instructor needs special training to use it proficiently.

RESULTS OF THE ELP LMS SELECTION SURVEY

The survey (Appendix A) included five parts: basic demographics, basic LMS functionality, advanced LMS functionality, system usability and technical support, and open-ended questions. For Parts 2 to 4, a Likert scale was used. The Likert scale had five levels; with 1 being *not important*, while 5 is *extremely important*. The index of mean was used to analyze data.

PART 1: BASIC DEMOGRAPHICS

Eight of 11 participants filled out the survey and the response rate was 73%. Two of the respondents were administrators, and the remaining six were instructors. All of the instructors had at least a graduate education. They all had at least 3-5 years' experience with computing/web. Forty-four percent of the respondents had more than 10 years' experience with computing/web. In addition, they all had some

LMS experience. Half of the respondents felt comfortable with LMS.

PART 2: BASIC LMS FUNCTIONALITY

Of the 10 survey questions in this part, two questions received the mean score of 4.5 or higher. The mean score for monitoring course progress and effectiveness (Question V) was 4.5. The mean response for providing feedback on assignments (Question VII) was 4.5. The ability to track facilitate individual participation (Question IX) received a mean response of 4. The results of this part indicated that, in stakeholders' minds, monitoring course progress, providing feedback on assignment, and tracking individual participants were the most important functionalities that an LMS should possess.

PART 3: ADVANCED LMS FUNCTIONALITY

A mean of 4.5 was the response given for requiring the LMS to have contents that are protected with a password and other security protocols (Question VII), and for allowing the user to update and redesign assessment rubrics received a mean response of 4 (Question V). The results indicated that security protocol was a major concern of using an LMS. Allowing

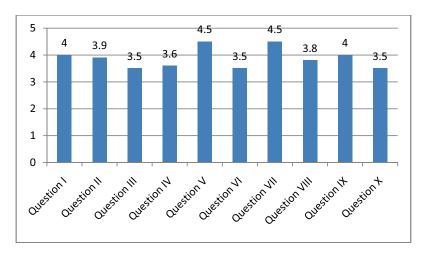
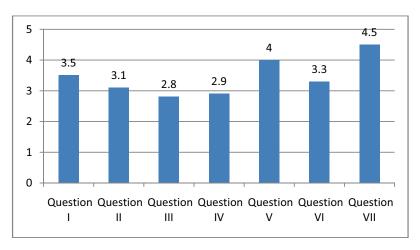
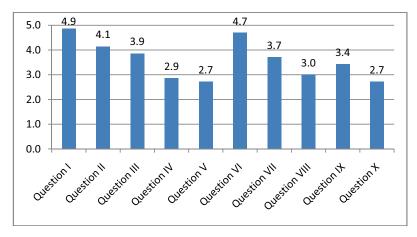


Figure 1. Basic LMS functionality.



Note: One participant missed Question VI and the results were calculated based on 7 responses.

Figure 2. Advanced LMS functionality.



Note: One participant missed this section and the results were calculated based on 7 responses.

Figure 3. System usability and technical support.

the users to update and redesign assessment rubric was also an important factor of choosing an LMS.

PART 4: SYSTEM USABILITY AND TECHNICAL SUPPORT

Having an LMS that has a simple layout that is relatively easy to navigate (Question

I) received a mean response from the participants of 4.9, while providing users with basic online support (Question VI) received the mean score of 4.7. The use of icons and other graphics to provide cues regarding usage (Question II) received a mean response of 4.1, and the mean response for requiring screen contents and

labels that can be modified (Question III) was 3.9. The results indicated that a simple layout was an important feature of an LMS, and basic online support was important to the client.

PART 5: OPEN-ENDED QUESTIONS

The participants expressed their needs for an LMS in aspects of document storage capacity, student progress monitor, automatic weighting of grades, students' access to their own grades, low instructor's workload in administration, and ease of instructor/faculty collaboration. Most of them perceived that an LMS would be highly valuable in fulfill their needs mentioned above.

RESULTS OF ELP LMS FOCUS GROUP INTERVIEW

Based on the survey results, the researchers designed the focus group interview protocol. Ten people participated in the interview, yielding a participation rate of 91%. The purpose of the interview was to have the participants agree on the group's most important needs, as well as to get more in-depth information beyond the data collected through survey.

Regarding the Question 1, participants were asked to name three most important learning management issues they were struggling as a group. First, they stated that they needed a flexible grading system; currently they gave many tests that require a flexible system. The system should work accurately and could calculate averages, weight grades, keep running calculation of grades, and allow for real-time reporting. Second, they indicated that in order to monitor their progresses, students should be able to access to their grades. Third, they needed a way to allow students to submit assignments by specific due dates.

Regarding Question 2, participants were asked to list top three most important instructional needs that they would like Moodle to address. They mentioned that

Moodle should be able to back up everything; the evaluators thought this was not a Moodle issue but a server issue. They wanted Moodle to handle large audio and video files, generate student proficiency reports, and allow instructors to track attendance and student to access to their attendance.

Regarding Question 3, the group was asked to what extent must Moodle meet their priority needs to be the desired LMS option. They said Moodle should meet 98% of their instructional needs.

RESULTS OF MOODLE ASSESSMENT RUBRIC

Based on the results of formative review, e-mail review, survey results, and the focus group interview, the evaluators created a Moodle assessment rubric (Table 1). For the purpose of this research, Moodle version 1.9 was assessed.

Sufficient File Capacity. Moodle has a basic storage file capacity of 5MB. This can be adjusted to the maximum file upload size capacity of 50 MB. It also accommodates video files.

Allow Flexibility of Grading. In Moodle, grades can be calculated, aggregated, and displayed in a variety of ways. Many settings have been designed to suit the needs of a great variety of organizations.

Electronic Communication/Collaboration. Moodle has a variety of communication affordances. It has an internal e-mail application as well as a forum for posting messages. It also has a Chat feature which allows for synchronous text interaction and collaboration.

Student Attendance Tracking. Moodle allows attendance to be added as an activity to each course the instructor desires. There are four status features the instructor can select: present, absent, late, and excused. The instructor may prefer to change the descriptions (e.g. change the word "late" to "tardy"), change the order, or change the way points are counted so as

Table 1. Moodle Assessment Rubric With Results

		Don't			
	Areas of Consideration	Meet	Meets	Exceeds	Note
1	Sufficient audio file capacity/storage		Х		
2	Allow flexibility in grading		X		
3	Support for electronic communication/collaboration		X		
4	Student attendance tracking			X	
5	Allow posting of assignments		X		
6	Contents are protected with security protocols		X		
7	Can generate grade reports		X		
8	Monitor course progress			x	
9	Provide feedback on assignments		X		
10	Layout that is relatively simple to navigate		x		

Note: Don't Meet–Moodle does not address the needs as specifically request by the client; Meet–Moodle addresses the needs as specifically request by the client; Exceed–Moodle address the needs as specifically request by the client and beyond.

to make appropriate changes here to the names, order, and grades. The instructor can export attendance reports for every day, every week, or every month.

Allow Posting of Assignments. The assignment activity module in Moodle allows teachers to collect work from students, review it, and provide feedback—including grades. There is also an offline activity option that can be used to remind students of assignments they need to complete, and to record grades in Moodle for activities that don't have an online component. In addition, Moodle allows resubmission and regrading of the assignment.

Security Protocols. Moodle affords strong security protocols. The system is password protected and the client's designated administrator can set permissions for access.

Grade Reports. Moodle affords instructors the ability to create grade book for each course. The instructor and administrator also can track grade history, as well as import and export grades in spreadsheet or webpage format.

Monitor Course Progress. In Moodle, there is course-based progress tracking or competency-based progress tracking. In course-based progress tracking, students can check which of their assignments have and have not been completed, and check the grade and feedback they've received for each assignment. Competency-based progress tracking lists all the outcomes with a required level of competency for that outcome. For example, ELP instructors could track the progress of a student's listening ability, and set different levels (e.g., low, intermediate, or high) for that ability. Whenever the leaner logs into the Moodle system, he or she is able to see the progress monitoring block on the course site.

Feedback Features. Moodle has an assignment module that allows teachers to provide feedback to students. The system also records the last modification time of the assignment by the student as well as by the teacher. The system automatically notifies the student via e-mail once the instructor finishes grading, updating, or commenting on student assignments.

Layout and Navigation. The layout of Moodle is relatively simple and easy to navigate. However, this determination is based on the user's technical experience and computing skills.

Based on the above evidence, the researchers think Moodle is able to fulfill the client's instructional needs (Table 1).

DISCUSSION

Both qualitative and quantitative data revealed positive results in the experience of using Moodle. The results suggested that Moodle met the requirements of ELP for a LMS that allowed for grading flexibility, ease of communication, teacher collaboration, and attendance tracking. In addition, Moodle was secure, had a large file capacity for audio/video recordings, and allowed for posting assignments and monitoring student progress. More importantly, since Moodle was designed based on a socioconstructivist pedagogical philosophy, it provided a platform for social negotiation in the process of knowledge building (Doolittle, 1999; Zakaria & Daud, 2008). Teachers were able to provide timely formative feedback via Moodle.

Although Moodle was able to address most current problems of ELP, like any new application there is a learning curve for its users. A considerable time investment for integrating student information, setting up courses, and orientating new instructors and students to the new LMS must be taken into account.

CONCLUSION

This study found out that Moodle was able to address most of ELP's needs quite well. Moodle was highly recommended to be adopted as a LMS to the faculty and administrative staff in the ELP program. To maximize its usage, certain types of training and orientation sessions would be required.

REFERENCES

Carvalho, A., Areal, N., & Silva, J. (2011). Students' perceptions of Blackboard and Moodle in a Portuguese university. *British Journal of Educational Technology*, 42(5), 824-841.

Doolittle, P. (1999). *Constructivism and online education.* Paper presented at the Online Conference on Teaching Online in Higher Education. Moodle. (2010). Moodle organization. Retrieved from http://www.moodle.org

Wood, S. L. (2010). Technology for teaching and learning: Moodle as a tool for higher education. *International Journal of Teaching and Learning in Higher Education*, 22(3), 299-307.

Wheeler, B. (2004). The open source parade. *EDUCAUSE Review*, 39(6), 68-69.

Zakaria, E., & Daud, M. Y. (2008). Using MOO-DLE in a mathematical methods course: Preservice teachers' perspective. *The International Journal of Learning*, 15(4), 293-298.

APPENDIX A: VIRGINIA TECH'S ELPLMS SELECTION SURVEY

In an effort to include all stakeholders' thoughts and perceptions regarding the selection of an appropriate learning management system (LMS) such as WebCT, Blackboard, Sakai, or Moodle for Virginia Tech's ELP, your participation is needed.

We have developed the survey below to capture this information. The questions for the survey are grouped in five parts: demographics, open-ended, basic LMS functionality, advanced LMS functionality, and system usability and technical support.

Please spend a few minutes answering the questions developed for the survey. Your input in this endeavor is wellappreciated.

PART 1: BASIC DEMOGRAPHICS

administrator:

User Category

a)

	b) staff c) instructor
II.	Years of experience with computing web
	a) 0-2
	b) 3-5 c) 6-9
	d) 10+

- III. Your education level
 - a) ___ Prebaccalaureate
 - b) ___ Some undergraduate

	c) Postbaccalaureate	Blackboard				
	d) Some graduate	Moodle				
	e) Graduate and above	Scholar				
		WebCT				
IV.	LMS Experience	Sakai	,			
	a) None	Other: (Please indicate	name)			
	b) Beginner					
	c) Comfortable	Contact information (For clarific	action and			
(d) Advanced	or follow-up)				
V.	What, if any, learning management	E-mail:	;			
•	system have you used? (Choose all	Phone:				
	that applied)					
1 (no	T 2: BASIC LMS FUNCTIONALITY ot important), 2 (somewhat important), 3 (ortant)	(important), 4 (very important), 5=	(Extremely			
			Importance			
	Item		(1-5)			
I.	Allow creation/posting of assignments: tests, pro	jects etc. online				
II.	Provide criteria and procedures to automatically	grade assignments				
III.	Include means to write objectives and learning o	utcomes				
IV.	Maintain records of communication with other u	sers				
V.	Post/monitor course progress and effectiveness					
VI.	Track registration records					
VII.	Provide feedback on assignments					
VIII.		postings, forum, etc.				
IX.						
X.		-mail, posts, etc.				
1 (no	T 3: ADVANCED LMS FUNCTIONALITY of important), 2 (somewhat important), 3 (ortant)		(Extremely			
	Item		Importance (1 – 5)			
I.	Support use of external resources e.g., web links,	podcast				
II.	Can incorporate multimedia resources: movies, I	Flash, PowerPoint				
III.	Facilitate collaborative learning tools such as wik	is				
IV.	Support virtual community building					
V.	Allow update and redesign of assessment rubrics	3				
VI.	Provide means to create multiple roles in the syst	tem				
VII.	Contents are protected with password and other	security protocols				

PART 4: SYSTEM USABILITY & TECHNICAL SUPPORT

1 (not important), 2 (somewhat important), 3 (important), 4 (very important), 5= (Extremely Important)

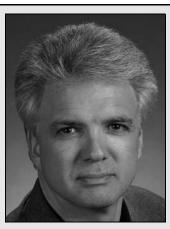
	Item	Importance (1 – 5)		
I.	Has a simple layout that's relatively easy to navigate			
II.	Use of icons and other graphics provide cues regarding usage			
III.	Screen contents and labels can be modified			
IV.	Allow multimedia and visual resources into an online module			
V.	Support moving courses to other categories			
VI.	7. Provide users with basic online support			
VII.	Provide users with advanced online support			
VIII.	Refer users to other sources for tech support			
IX.	Supports open Source			
X.	Allow use of HTML			
Discu	uss your thoughts about online learning and use of LMS in general.			
Than	k you for your input!			

Using the Project Management Body of Knowledge (PMBoK) Framework When Selecting a Learning Management System

Robert Gibson

Introduction

mporia State University (ESU) has been using its current learning management system (LMS) for



Robert Gibson,
Emporia State University,
1200 Commercial Street,
Emporia, KS 66801.
Telephone: (620) 341-6694.
E-mail: rgibson1@emporia.edu

approximately 14 years. The software is locally hosted in the data center where a team provides support for the database, application servers, user administration, directory authentication, data feeds from the Student Information System, and enduser support.

The decision was made by the Learning Technologies team at ESU to investigate alternative systems. Much of the interest in changing systems was derived from data drawn from 2 years of internal technology surveys among students who indicated growing discontent with the current system. Students responded that they are increasingly utilizing mobile devices to access course materials, grades, and digital assets, and prefer a system that can better support their needs. They also indicated that they desire a product that offers rich social media features and better support for self-produced digital assets that can culminate in electronic portfolios, projectbased learning assignments, and authentic assessments. It was determined that the current LMS lacks:

- 1. a contemporary look-and-feel, and ease-of-use features;
- 2. convenient mobile device access required of contemporary systems;
- 3. course notifications via social and mobile media;
- 4. a rich array of social media features and native access to popular social media sites; and
- 5. integration with digital assets, such as student-produced video and multimedia.

The back office staff expressed that the current LMS lacks:

- a process or resource to manage/ merge/unmerge multiple course sections;
- a process or resource to manage/ upload/modify student avatars/photo rosters;
- 3. a mechanism to streamline product upgrades and bug fixes;
- 4. a native mechanism to reconstitute deleted courses; and
- 5. the ability to customize without significant programming expertise.

Faculty and instructors expressed that the current LMS:

- is difficult to use—too many "clicks" to accomplish tasks;
- does not provide rich analytics that help them measure student competencies;
- 3. does not provide a mechanism to direct grades to the Student Information System;
- 4. must be brought offline at critical periods of the academic year to perform upgrades; and
- 5. lacks a reliable plagiarism detection system.

As a result of this feedback, a Learning Management System Task Force was empaneled with the charge of identifying a replacement system. To address this challenge, the LMS Task Force project manager employed the PMBoK (Project Management Body of Knowledge) methodology. PMBoK is often used by organizations that are either analyzing software applications or that have adopted a specific product and are in the process of integrating that product into the enterprise. It blends the principles of quality management with cost management, resource management, personnel management, and other factors to ensure a successful product launch.

WHY UTILIZE PROJECT MANAGEMENT?

Increasingly, universities and colleges are engaging project management methodologies to control complex technology changes within their enterprise. In order to effectively control and manage this level of complexity, "projects" are created that involve specialized personnel and stakeholders from across the enterprise. According to the Project Management Institute (PMI), a project is "a temporary group activity designed to produce a unique product, service or result" (PMI, 2012). Change has become a regular and expected part of most academic technical environments. Enterprise software applications are added, removed, or upgraded routinely. Traditionally prepared mid-management is often ill-equipped to control for this type of rapid software evolution. Crawford and Blackburn (1996) state,

As organizations break down their operations and identify them as "projects," many of the disappearing middle managers are being replaced by project managers, often with technical rather than general management backgrounds, who are being asked to coordinate multidisciplinary teams over whom they may have no formal authority. (p. 2)

Typical enterprise software applications, such as an LMS, are becoming increasingly

complex and involve a multiplicity of stakeholders from across the institution. Some of those touch points where the LMS intersects include server administrators, database administrators, network personnel, helpdesk agents, trainers, software developers and programmers, instructional designers, distance education support personnel, video support personnel, academic administrators, faculty, staff, and most importantly, students. A typical LMS integrates with the Student Information System; the directory authentication system; the e-mail and alert notification system; an early warning system (used to identify at-risk students); a plagiarism detection system; an evaluation and analytics system; an electronic portfolio system; a web-conferencing application; a lecture capture application; a streaming video system; social media applications, and mobile applications indicate the array of associated technologies. A change or upgrade in the LMS will often mean that each of these secondary systems will be affected as well.

Software projects of this magnitude can no longer be isolated to individual departments with limited scope and limited impact to the institution. That is, they are no longer considered vertical products that only affect a limited number of users within a confined ecosystem, but rather horizontal products that cut across multiple ecosystems. Therefore, project management is the most effective mechanism to control software applications with complex change management challenges. An applicable project management framework is the previously noted PMBoK, or Project Management Body of Knowledge. The PMBoK framework is a subset of PMI. It is considered a collection of processes and knowledge areas that are accepted as "best practices" within the field of project management (Haughey, 2012). While PMBoK can be used for a variety of applications, it is particularly well-suited for enterprise software management. This is because

PMBoK is recognized as a sequential project management method. It is an ideal methodology for large and potentially dispersed interdependent teams; it is well suited to handle complex inter-dependencies between tasks and teams; it is excellent for fixed-fee projects; and it includes predefined sequence cycles that control project timelines. Whereas, other nonlinear frameworks such as *Agile* project management are arguably better suited for large-scale manufacturing applications, such as production plants (Thangalvaadi, 2011).

PROCESS METHODOLOGY

Starting in mid-summer 2012, the LMS Task Force project manager began assembling the various components that would guide the product selection process. The foundational framework for the process involved PMBoK. According to Thomas (2009) "the PMBoK Guide outlines five key process groups to aid in project delivery:

- 1. *Initiating:* Setting up the project for success by identifying the right team and scope, as well as determining the relationship between the project and its alignment with the organization's overall charter.
- 2. *Planning*: Developing the relevant resources, timelines and milestones, and mapping project delivery to business priorities (i.e., risk management, communications, quality, cost/budgeting, duration and sequencing, indentifying external dependencies).
- 3. Executing: Assigning the project team and distributing information to ensure the proper activities are undertaken. This process also includes ensuring quality assurance methods are in place to address change management, organizational updates, possible changes to the plan, et cetera.
- 4. Controlling and Monitoring: Ensuring the resulting product maps back to the original plan, and risk from uncon-

trolled external actions is diminished. Monitoring can have a significant impact by setting up a secure infrastructure to:

- (a) monitor quality, costs and schedule;
- (b) manage stakeholder relationships, risk and contract monitoring,
- (c) identify discrepancies (or variations) within the project schedule, and
- (d) provide the PMO more control.
- 5. Closing: Making sure you have delivered everything expected of the project. Once you close, you need to review the project vis-à-vis the plan and likewise ensure contract closure."

At ESU, the LMS Task Force project manager used this framework to build a series of action items that guided the entire product review sequence:

- Secure Executive Sponsorship: The first step in any evaluation of this magnitude is to ensure there is support from senior administration. Typically, the chief academic officer (provost) and the chief information officer must agree to sponsor the project plan. Rationale for the change, along with anticipated timeline, community involvement, expected costs, and project methodology are clearly communicated to the executive sponsors. If it is eventually deemed that an alternative product will be selected, these executives will likely be the individuals that carry this decision forward to the president, faculty senate, and the deans for formal discussion and approval.
- 2. Interviews With and Data Collection From Other Colleges and Universities: The second step in the process was to analyze results from other colleges and universities that had recently embarked on

- similar product evaluations. Interviews were conducted with the project managers from those campuses to determine how they approached the product evaluation cycle. This proved to be extremely useful information. In each case, the project manager shared how he or she was able to collect information and resources that provided further insight as to how they approached the evaluation cycle. In some cases, the campuses not only engaged project management methodology, but also were able to marshal such resources as human factors experts to conduct usability testing and analysis prior to product selection.
- Conduct a Literature Review: The third step in the process was to conduct a thorough literature review from other campuses who had documented their analysis. In many cases, the campuses posted their analysis and results on publicly accessible web sites. Data were collected from the University of Texas, North Carolina State University, the University of California-Chico, University of San Francisco, and Pittsburg State University (Kansas) to name a few. The LMS Task Force Project Manager analyzed their data and evaluation methods to generate approach for ESU. In addition, EDU-CAUSE provided helpful documentation regarding the LMS review and selection process (EDUCAUSE, 2010).
- 4. Empanel the LMS Task Force: In order to ensure a broad representation of constituents across campus had equal input into the decision process, a Learning Management System Task Force consisting of 23 individuals was empaneled. Included were faculty representatives from each of the four academic schools and colleges; the office of distance education; student services; learning technologies; information technology back office support personnel (database, web administra-

- tion, Student Information System integration, e-mail and authentication integration, etc.); and graduate and undergraduate students. The LMS Task Force participation is completely voluntary.
- Develop a Project Charter and Project Scope: Before the LMS Task Force met for the kickoff meeting, a detailed Proj-Charter (https://www.dropbox .com/s/relkkcpjaquzcd9/Project%20 Charter.rtf) and Project Scope (https:// www.dropbox.com/s/t749u2snqfei1n4/ Project%20Scope.rtf) document were developed. According to (2009), the purpose of the Project Charter is to "ensure that all the project stakeholders formally agree on the project definition and have recorded that definition in writing. The Project Charter protects against uncontrolled scope creep and the other potential missteps awaiting project teams that begin their work with only a vague or assumed understanding of the project scope and other requirements" (p. 72). Following the PMBoK project management methodology, the LMS Project Charter provided the following details:
 - business purpose for the project;
 - description;
 - objectives;
 - success criteria/expected benefits;
 - funding requirements (if any);
 - project deliverables;
 - acceptance criteria;
 - milestone schedule; and
 - approval requirements.

A detailed LMS Project Scope document was also developed. Fairmont State University (n.d.) defines the project scope as

describes the project's deliverables and the work required to create those deliverables. The project scope statement provides a common understanding of the project scope among all project stakeholders and describes the project's major objectives. It also enables the project team to perform more detailed planning, guides the project team's work during execution, and provides the baseline for evaluating whether requests for changes or additional work are contained within or outside the project's boundaries.

The LMS Project Scope documentation provided the following details:

- project scope description;
- customer requirements;
- statement of work;
- project deliverables;
- timeline;
- acceptance criteria;
- work breakdown structure;
- project boundaries;
- project assumptions;
- initial risks and constraints; and
- project approval.
- Develop the Work Breakdown Structure (WBS): The WBS provides a detailed timeline of the evaluation process from the project inception through project closure. Each step in the process is mapped using a sophisticated spreadsheet that identifies timelines, critical paths and a Gantt chart that illustrates process dependencies. As each alternative LMS product is identified for review, it is mapped using the WBS. There is a critical timeline for the entire project that meets licensing requirements and school calendar year schedules. If certain milestones are not met, the entire project risks time and cost overruns, as well as the possibility of complete failure.

The overarching WBS for this evaluation process was to narrow the field of products from six to two, from which a final LMS product selection

- would be made. The original six products considered were selected from evaluations conducted at other campuses. Rather than request the LMS Task Force make these initial selections (most of which they were likely unfamiliar), the Project Manager assembled the candidate products. These are all popular, viable, and proven systems used on campuses across both the United States and internationally. The timeline for review was set at six months—one product evaluation per month. Each evaluation consisted of an on-site or webinar-based presentation lasting approximately 2 hours. An evaluative rubric is used to rate each of the products following this presentation. The final two products will be evaluated in much greater detaillikely full-day demonstrations offered later in the project cycle. Additional "sandbox" sites were created for each product that allowed the faculty to export their courses from the current system and import it into the candidate system.
- Develop a Risk Assessment Audit: Risk assessment measurement is a process used to identify and evaluate risks and their potential effect. According to the Standish Group International (2007), 65% of IT projects failed or were challenged due to poor management, cost overruns, or other environmental factors. Several possible risks were considered during the evaluative process: product licensing cost overruns; failure to include key stakeholders in the selection process; failure to provide ample information in order to make an informed decision; and failure to appropriately communicate any product decisions to the university community. In order to control for these concerns, a risk audit matrix was developed that identified areas that may compromise the project out-

- comes. For each risk, a mitigation strategy was developed.
- 8. Develop Other Measurement Criteria: Additional measurement criteria were developed in order to measure project success. Included were the following:
 - Schedule Performance Index: This is an index that measures cost of work performed against cost of work scheduled. Schedule overruns will be closely monitored throughout the project life cycle.
 - Cost Performance Index: An index that measures projected or estimated cost of work performed against actual cost of work performed. Given that this is an educational institution, the costs are normally controlled since that budgets are very restricted. If additional costs are incurred, this performance index will be utilized to measure the impact on the project.
 - Human Resource Index: An index that measures functions involving human resources management. Given that a replacement system may significantly impact human resource capital, this index is often utilized to control for variables that may impact implementation of an alternative system (RCE Associates, 2011).
 - Scope Management Control Measures: An index that ensures that
 the project targets the identified
 change and not spiral into secondary product change that may lead to
 cost and time overruns.
 - Quality Cost and Delivery: Three separate indexes that provide data to the project manager regarding error mitigation; waste reduction; and timely project delivery (Lean Kaizen, 2010).
- 9. Develop the Evaluation Rubric: Based on criteria collected from other cam-

puses, a comprehensive evaluative rubric was developed. In order to ensure the LMS Task Force members were included in this process, a Google Doc site was established that allowed all members of the task force to add comments regarding features they wanted to see addressed in a replacement system. Google Docs proved to be the best selection for this process because users could easily add notations without the need to download the document, add comments, and reupload. That information was eventually collected and organized into feature sets. Each of these feature sets was weighted and ranked according to its importance as a product feature. As the products are evaluated, a weighted index is applied to each feature according to its relative importance to the faculty and students (e.g., the grade book is relatively more important than a chat tool in most instances). The weighting schema added the criteria ranking (1-5) with the number of scores for that feature. The result was multiplied against the criteria weighting. The sum of that result is added to the sum of the weight and divided by the sum of the weight to achieve the weighted ranking.

10. Develop a Request for Proposal and Request for Information: Once the field of products is narrowed from six to two, the LMS Task Force project manager (with assistance from the LMS Task Force) will develop a request for proposal/request for information. This process normally involves detailing the various criteria and features required in a product selection. According to OLCsoft (2004),

An RFP should include information about your organization and project as well as questions that elicit differences among competing companies. Question types should include both 'Yes/No' type responses as well as open-ended text questions. An RFP should also solicit cost quotes that allow you to determine both initial and ongoing costs of the product or service.

The various vendors then respond to that written proposal. This process reduces the potential for "vendor bias" by using a bid system, and streamlines the procurement process by identifying critical features using a rubric. The RFP normally accompanies the contract as it winds its way through the campus procurement system. Following interviews with other campuses, it was determined that the RFP should be postponed until the Task Force has narrowed its selection to the top two products. It would not be a good use of time engaging in a protracted RFP process if the product is clearly something the faculty and students reject from the onset.

11. Develop a Project Communication Plan: A comprehensive communication plan was established that provides input and feedback to and from the university community. Once the candidate products are narrowed from six to two, the university faculty, staff, and students will be invited to review the finalist products through open forums, hands-on labs, discussions, presentations, and other direct exposure mechanisms. That input will be collected using a campuswide survey designed to solicit feedback and input. Results from that survey will be communicated to the executive leadership and other administrative stakeholders. It is anticipated that the task force and the user community will reach a consensus regarding a product selection. From that consensus, pilot studies will be launched and data collected regarding the usability, features, and overall product experience. That information will also be communicated to the campus community via various channels.

The communication mechanisms to be utilized throughout the project implementation include the following:

(a) E-mail Distribution List. According to Rouse (2005)

a distribution list is a group of mail recipients that is addressed as a single recipient. Distribution lists are used to send e-mail to groups of people without having to enter each recipient's individual address. A distribution list is different from an e-mail list in that members cannot reply to the distribution list's name to send messages to everyone else in the group.

This communication channel provides targeted information for specific subsets of ESU employees. For example, employees directly involved with the LMS implementation will receive targeted information specific to those activities. Senior administrative sponsors will receive targeted information specific to their portion of the implementation, and so forth.

- (b) E-mail Project Activity Reports: Provides detailed information regarding various stages of the project. This information is more specific in nature and only intended for the LMS Task Force and Senior Administration. External stakeholders should not be privy to this level of project detail (Mehta, 2002).
- (c) Web Site/Project Portal: Whereas e-mail updates provide blasts of information on a regular basis, a website/project portal provides project information on an ongo-

ing basis. This site can include images, charts, reports, and other content that is difficult to e-mail. According to DelTek (2007),

More and more, projects and teams have become geographically dispersed. An increasing number of executives and other stakeholders want to informed of a project's status and health in real time without wading through lengthy reports. Partners, customers and other stakeholders outside an organization also expect to be kept in the loop on a constant basis. This requires a comprehensive means of managing and communicating project information.

Areas of the portal can be restricted to key personnel based on password access. E-mail communication logs can also be added to the site, along with discussion boards for Q&A, a project manager blog, videos, podcasts, and other features that better convey the project status. External stakeholders may be able to access certain areas of the site; however, it's really intended for the LMS Task Force and senior administration. To manage this project, particular a private Google Site was generated (Figure A). Included are all relevant documents, video recordings of the vendor presentations, and other relevant information.

(d) Project Calendar: Provides project schedule information for the LMS Task Force, thus providing insight as to leads/lags/floats (project time buffers) and other variables that may affect the schedule. This information is not necessarily intended for external stakehold-

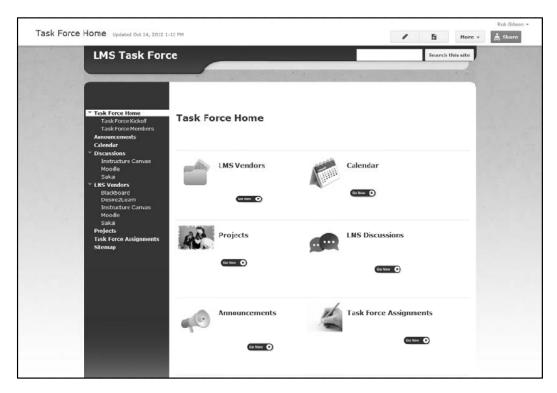


Figure 1. Google site for LMS Task Force product review.

- ers and thus will not be communicated outside the project team unless a significant project delay warrants such outreach. Wellmanaged calendars and contact lists can be important to project productivity (Quinn, 2012).
- (e) Quarterly Mobile Ezine: According to eZine Marketing (2012), an electronic newsletter is a great way to promote a regular forum for a variety of information. An eZine provides project promotion information for both external and internal stakeholders. Mobile applications now represent a major communication vehicle for many types of organizations. An Ezine can be assembled relatively quickly and disseminated through electronic "marketplaces." This information is promotional in
- nature—similar to a magazine. Project highlights; advantages of the new LMS; useful data; projected savings and reduced service requests can all be highlighted.
- (f) Project Checkpoints: These faceto-face meetings (with documentation, as deemed necessary) are
 generally limited to university
 senior administration and the
 Project Manager. This communication is scheduled at each major
 project milestone and is intended
 to provide an update regarding
 the previous completed WBS task,
 while providing information pertaining to the upcoming WBS task.
 External stakeholders will not
 require access to this information.
- (g) Decision Logs: A decision log is a list of the key decisions made in a

project (Harrin, 2010). It normally includes:

- A reference for the decision;
- Date decision made;
- What was agreed and why;
- Who agreed to it; and
- Where you can find more information or supporting documentation.

Decision logs are used to document all project decisions and change orders. This information is limited to Project Team Leads and Senior Administration only. (No external stakeholders.) Decision logs are functional in nature and only serve as a document trail throughout the project. These logs can be stored within the web portal/intranet.

CONCLUSION/RECOMMENDATIONS

Increasingly, software applications impact broad cross-sections of users and support personnel across the enterprise. Selecting a new application or even upgrading an existing application can have a tremendous impact on the user community—both negatively and positively. Managing this process requires careful, deliberate, measured actions that take into account the needs of a variety of constituents, and plan for potential for negative consequences. Mitigating these risks, while still accomplishing the goal of changing systems in order to address the business goals of the university is one reason project management strategies are engaged. These strategies are systematic, linear, and provide controls at every level. They ensure projects of this magnitude are carried out successfully and not abandoned—a common problem for projects that do not engage a framework for change management. They also control for cost overruns and scope

creep—common in large-scale software system deployment. Finally, this strategy ensures faculty, staff, and student buy-in regarding the selection.

The PMBoK proved to be the ideal mechanism for managing this process at Emporia State University. Selection of a new learning management system is a critically important process. The impact of the selection may translate to additional or sustained enrollments, improved integration of technology among the faculty, a higher quality of online courses, streamlined support, and other related benefits. A decision of this scope should never be made without participation and investment from the faculty and student community. Utilizing a project management framework ensures that milestones are met, the project remains on schedule, there is little or no scope creep, there is little or no cost overrun, and the project is well communicated to the community. All future project management at the university will likely be built around this framework.

REFERENCES

Crawford, L., & Blackburn, S. (1996, October).

Project manager competence: Putting the PMBOK to work. Paper presented at the Project Management Institute 27th Annual Seminar/Symposium, Boston, MA. Retrieved from http://www.projectperformance.com.au/downloads/96pd37.pdf

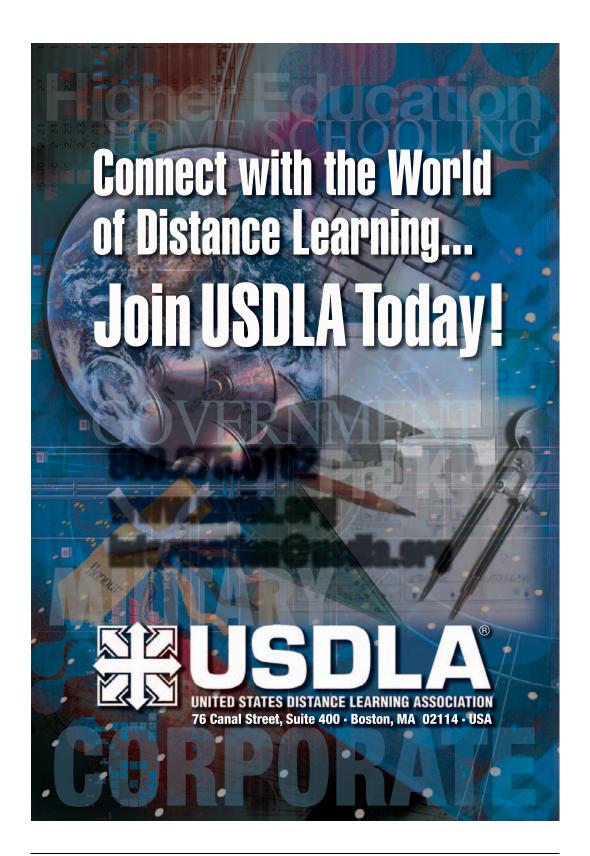
DelTek. (2007). Using project management portals to integrate and share project information. *DelTek*. Retrieved from http://andradeivan.com/wp-content/uploads/2012/04/Using-Project-Management-Portals-to-integrate-and-share-Proj.pdf

EDUCAUSE. (2010). 7 things you should know about LMS evaluation. Retrieved from http://net.educause.edu/ir/library/pdf/ELI7072.pdf

eZine Marketing. (2012). Advantages and disadvantages of a monthly ezine newsletter. Retrieved from http://www.211kaoyan.net/advantages-and-disadvantages-of-amonthly-ezine-newsletter/

- Fairmount State University. (n.d.). Project management fact sheets. Retrieved from http://www.fairmontstate.edu/it/pmo/default.asp
- Harrin, E. (2010). Why you need a decision log. Retrieved from http://pmtips.net /decision-log/
- Haughey, D. (2012). The project management body of knowledge (PMBOK). Retrieved from http://www.projectsmart.co.uk/pmbok .html
- Lean Kaizen. (2010). Quality, cost and delivery. Retrieved from http://www.leankaizen.co.uk/quality-cost-delivery.html
- Mehta, A. (2002). Communication in project management. Retrieved from http://www .pmiglc.org/comm/articles/0410_mehta _comm.pdf
- OLCsoft. (2004). What is an RFP? Retrieved from http://www.olcsoft.com/index.htm
- Padgett, C. M. (2009). The project success method: A proven approach for achieving superior project performance in as little as 5 days. Hoboken, NJ: Wiley.
- Project Management Institute. (2012). What is project management? Retrieved from http://www.pmi.org/About-Us/About-Us-What-is-Project-Management.aspx

- Quinn, L. S. (2012). Six views of project management: What applications—and kinds of applications—can help you manage projects? Retrieved from http://www.techsoup.org/learningcenter/software/page7648.cfm
- RCE Associates. (2011). The human resource index for emerging companies. Retrieved from http://www.rceassociates.net/hrindex .php
- Rouse, M. (2005). Distribution list. Retrieved from http://searchexchange.techtarget.com/definition/distribution-list
- Standish Group International. (2007). *The chaos report*. Retrieved from http://www.standishgroup.com
- Thangalvadi, T. (2011). What is project management? Retrieved from http://www.thangalvadi.com/2011/project-management-basics
- Thomas, H. (2009). Introduction to project management best practices: PMBOK and PRINCE 2. Retrieved from http://www.itbusinessedge.com/cm/community/features/guestopinions/blog/introduction-to-project-management-best-practices-pmbok-and-prince-2/?cs=36808



Using Facebook as a Course Management System

One Instructor's Journey

Preston Parker

BACKGROUND

y options seemed too limited. In the fall of 2010, I found myself disappointed with the course management system (CMS) options available for the university-level courses I instructed. The institution provided Blackboard, where far too often I spent time training students how to use the CMS, instead of instructing course content; or, I was frustrated by the clunkiness of using it. My needs were not being met.

Earlier, I had tested using open-licensed options like Moodle and Sakai. Unfortunately, when teaching the students how to use these systems, I found the cognitive load was even greater than with Blackboard. I wanted to focus on teaching the course content, using a system that was intuitive to students (and me), yet robust enough to fit my instructional needs.

So, I turned to Facebook.

Preston Parker,
Instructor, Department of Management,
Jon M. Huntsman School of Business, Utah
State University, 3555 Old Main Hill, Logan,
Utah 84322-3555. Telephone: (661) 7727537. E-mail: preston.parker@usu.edu

COURSE ORGANIZATION IN FACEBOOK

My decision to use Facebook as a CMS was fairly simple. Students are already familiar with Facebook. They know the basic functions of the platform, so utilizing it as a CMS requires little additional learning of the tool. The Facebook selection did require some testing and creativity on my part, which I found no more cumbersome than utilizing any other CMS.

After exploring the instructional possibilities in Facebook and identifying the tools I needed for my courses, I chose to set up a Facebook Group (instead of a Facebook Page or Facebook Event). With a Group, I have built-in functionality that includes e-mail, messaging, text and video chatting, administrative access, discussion board wall,

47

student access, and the ability to upload and monitor digital files and documents. A Group affords the most useful aspects of a CMS, including the management of students and course content, and communication with and between students.

GROUP CREATION

To create a Facebook Group, an instructor logs into Facebook and clicks on "Create Group" under the "Groups" label found in the left sidebar. At this point the instructor names the Group. This is the name that will be listed under the "Groups" label and appear at the top of the Group when inside the Group. The administrator of the Group can change this name as often as needed in the "Group Name" field under "Edit Group Settings."

As part of creating a Group, the instructor also adds specific people to the Group. Once added, these individuals become "members" of the Group. Students can also be added later, after the Group is created.

GROUP MEMBERSHIP

After creating the Group, as the administrator, I can either add each student in the course to the Group (if I did not add them when I created the Group) or have students request to be added by clicking "Join Group" and then I approve the requests. Either way, all the students in a course become members of the Group.

A nice feature of the Facebook Group is that after a student becomes a member of the course Group, the Group name appears under the "Groups" label in the sidebar each time the student logs into Facebook. This visibility of the course Group is incredibly convenient, as students, who are already logging into Facebook, see the course Group and check it regularly. They do not have to log in to another system, such as Blackboard, to check course content and updates. For instructors, it is convenient as well, since

all Facebook courses are listed under the "Groups" label in the sidebar, making it easy to click through various courses to monitor and update them.

GROUP ACCESS

Groups can have three levels of access: Open, Closed, and Secret. This level can be selected when the Group is created or can be selected after the Group is created. An administrator can switch between different levels whenever a change is desired, by clicking the radio button in the "Privacy" field under "Edit Group Settings." Because of this field name, the Group access level is commonly referred to as the "Group privacy setting."

I choose to leave the access level of my courses set to Open, meaning anyone on Facebook can see the Group, its members, and the messages posted on the Group Wall. In a Closed Group, anyone can see the Group and its members, but only members can see messages posted to the Group Wall. In a Secret Group, only members see the Group, who is in it, and what members post to the Group Wall.

A potential concern to the Open Group is that anyone in the world may happen to find the Group and request to join. They also would be able to peruse the content of the course even without being a Group member. I view this potential concern as a positive because, unlike in a completely password-protected, closed CMS course, an Open Facebook Group can have participants who are not taking the course for credit. On several occasions, I have had experts on topics related to the course participate in discussions with students, which enriched the content and experience for the students. My favorite Group visitors are authors of the course readings. Even students accustomed to regular social media use find it exciting to interact with authors and other experts.

GROUP ADDRESS

Selecting an appropriate and relevant address for the Facebook Group is an important task that often gets overlooked. The Group address is important because, not only does it appear in the domain (web) address of the Group, it is also used as part of the Group e-mail address. When anyone in the Group sends an e-mail to the single Group e-mail address, each member of the Group receives a message in his or her personal e-mail account and Facebook Inbox, and the message is also posted to the Group Wall. Thus, using the Group e-mail address becomes an easy way of disseminating course announcements.

To assign an address to a Group in Facebook, the administrator goes to "Edit Group Settings," then types in an address in the "Group Address" field. Once this is set, there is no way to change it, so it is important to properly select and input the address. The URL (domain address) of the Group then becomes www.facebook.com/ groups/groupaddress and the Group email address becomes groupaddress@ groups.facebook.com I name my Groups according to the course number and semester. For example, the Group address for an EDU 600 course offered spring semester 2013 would be edu600spr2013 This naming convention makes it easy for me to keep track of my different course Groups, and ensures each course Group has a unique address, which is required when assigning an address to a Facebook Group.

GROUP WALL

Along with housing announcements generated from e-mails sent to the Group e-mail address, the Group Wall serves as the discussion board. Here students and the instructor can post questions, share interesting items that relate to the course content, and easily share and access external links of readings, images, and videos.

Participants can also attach files, photos, and videos to Wall posts. When a post is made to the Group Wall, Facebook sends a notification message to every member in the Group as well as flags the Group name under the Groups label in the sidebar. Students can then choose to contribute to the discussions at their leisure. Using the Group Wall in this way can seamlessly enrich the course experience. Though it is possible to require all posts to be approved by the administrator before being visible to Group members, I choose to have them automatically appear without approval.

Group members can also post a simple poll on the Group Wall. Any Group member can click "Ask Question" above the Wall to create a poll. This provides a great way for the instructor and students to ask questions in a polling format and have Group members select from multiple answers. Polling can be useful, especially for the instructor, in quickly acquiring feedback from Group members. For example, I might ask about students completing certain readings, or understanding specific topics.

FACEBOOK MESSAGES

In addition to communicating with members using the Group e-mail address, Group members can send Facebook Messages to each other, either all at once, or by selecting specific individuals. These Messages are delivered to individuals' Facebook Inboxes, not their personal e-mail accounts. Upon arrival of these Messages, members can receive notifications in Facebook and via e-mail. Members can also attach files to Messages, in the same manner as attaching them to Wall posts. And, since Facebook Messages also serve as the familiar chats (like instant messaging) both text and video—the conversations with and among students in the Group can be either asynchronous or synchronous.

Managing Course Content (Photos Tab and Files Tab)

Digital course content is uploaded to the Photos Tab and the Files Tab of the Facebook Group. An instructor can upload and organize picture and video files-such as IPG, PNG, and MOV files—within the Photos Tab, while text files—such as DOC, PPT, and PDF files—are uploaded to the Files Tab. Students can view and/or download (but not edit) these files within the Group. An instructor can also click "Create Doc" within the Files Tab to create an editable document that any member of the Group can edit. All files and documents can be labeled by module, by week, by topic, or however is needed to fit the course. Any time anyone makes a change to a file or document, a message and a link are posted to the Group Wall, therefore students can easily find a continual stream of change notifications.

I utilize the Photos Tab to house the video-recorded course lectures and any images that illustrate points made in the lectures. My written lecture notes are either uploaded to the Photos Tab or to the Files Tab depending on the file format. I upload any presentation files, typically in PDF or PPT format, to the Files Tab, which is nice because students can view these files in their browser, or download them to their computers for later viewing. Since my Syllabus (which includes the course calendar) needs to be updated throughout the course, I make it an editable document in the Files Tab.

For course readings, care must be taken when considering fair use and copyright protection. I make the choice of including readings of which either I am the copyright owner, or which are open-licensed and available online. Should an instructor be utilizing readings that need a higher-level of protection, it is better to have the Group privacy setting on Secret, as this most approximates the password-protected environment typically required for limited-access readings housed in a CMS.

Something innovative, which I found to be very effective, is to upload audioenhanced PDF files created with the Livescribe Smartpen. This is a pen that instantly turns what is written on a page into a digital PDF document file. These files have hand-written text that is synced to audio that was occurring while the text was being written. This hand-written text is either made by me when describing a topic, or by a student recording a live version of the course lecture or discussion. Using these audio-enhanced files, I can explain a complicated concept while drawing it out for the students to see. It is as if I am using a recorded white board. These PDFs can be replayed over and over, similar to a video file, with the drawing on the page synced with the audio.

OPEN AND CLOSED ASSIGNMENT SUBMISSION

There are two approaches to student assignments: submission of between the instructor and the student; and open, between the student and the world. The former allows feedback, interaction, and assessment from only one person, the instructor. The latter facilitates feedback, interaction, and assessment from anyone who reviews the assignment. Should an instructor desire closed assignment submission, students can submit assignments using the Facebook Message feature. The assignment can be typed in the body of the message or added as one or more attachments. Should an instructor desire open assignment submission, students can submit assignments by posting them to a blog. In general, I choose open submission.

Since not all students have a blog prior to enrolling in the course, in the syllabus I outline the process of setting up and utilizing one for course assignments. I typically recommend students use www.blogger.com or www.wordpress.com as these are relatively simple and readily available

options. Something I also recommend is for students to name their blog some amalgamation or diminutive of their name, and not some abstract reference. For example, while I would recommend Jonathon Smith naming his blog something like "jonsmith," I would not recommend something like "princessboy." Following this naming recommendation makes it easier for Group members to locate specific student blogs and it also lowers confusion.

I require students to post their assignments to their blogs for each topic covered. The deadline is typically 11:59 P.M. on a particular day. This allows students flexibility to submit assignments at their convenience.

Regarding the requirement of students to post their assignments openly, sometimes there is trepidation. Some students express concern regarding having anyone able to view their course assignments. My perspective is if students do not feel their assignments are good enough to publish on their individual blogs, then they likely are not good enough to hand in as final assignments for a course. Once I explain the reasons and benefits for open assignment submission, students embrace the concept. They tend to utilize posting their assignments on their blogs to establish their voice, opinion, and reputation.

Another ancillary reason for open submission of course assignments is the potential of getting "discovered." Since the world can read student blogs, the potential of professionals, experts, and interested people reading student submissions exists. I have had many students make connections and even land their career opportunities because of having someone find their blog assignments. This cannot happen in a closed submission environment of assignments. I recommend that students not label these assignments as "class assignments" or something similar, but instead treat course assignments as examples of their professional abilities. Oftentimes, students use their blogs as the beginning of their online professional portfolio.

To keep track of all the student blogs, I create a document in the Files Tab that I call "Blog List" where students input their name and blog address. This allows them to change their blog name, if they need to, throughout the course, by simply updating the address. Facebook also automatically makes the blog address a hot link so it becomes easy to click out to the students' blogs. Once a deadline has passed for a particular assignment, I go to the Blog List document and click through the blog addresses to review and assess the submitted assignments.

OPEN AND CLOSED GRADING

Assignment assessment is best handled with a combination of two methods: closed, where only the instructor and student know the assessment; and open, where anyone can review the assessment. Careful consideration must be made by the instructor in deciding when and where to use each.

I have found students appreciate giving and receiving feedback from one another on their assignments. This peer feedback offers an added element of learning around a specific topic. Therefore, I require students to read other Group members' blog assignments and post comments by 11:59 P.M. the day after a particular assignment is due. After this deadline, I review the assignments and the blog comments and leave a final summary comment of assessment to each assignment. It is enjoyable to see when a discussion between students continues even after I have posted my assessment comment.

Sometimes, I make a judgment that my feedback is sensitive, either due to the nature of the assessment, or due to the personality of the student. When this is the case, I use a closed method by sending feedback to the student directly and individually through a Facebook Message.

Additionally, on the occasion when I have a closed assignment that is required to be submitted through a Message, I respond to each student with the assessment in a response Message.

When it comes to the final numeric score of an assignment, I use a closed method for recording and dissemination of grades. This is mostly due to the mandates of the Family Educational Rights and Privacy Act, which disallows the open posting of final grades. Figuring out how to handle this when using Facebook as a CMS presented an interesting challenge. Before I began using Facebook as my CMS, I explored several third-party online grade book options and I chose to www.gradebookportal.com It was simple, intuitive, and password-protected. Students found it effective for disseminating course assignment grades, so I included a link from the Group to the web address and a description on how to use the grade record site in the syllabus.

In the fall of 2011, my institution switched from Blackboard to Instructure's Canvas. I found many of the weaknesses of Blackboard still persisted in Canvas, but the fact that my institution automatically placed students in the course's online Canvas grade book, made it an obvious choice for me to switch from using GradeBook-Portal to the gradebooks in Canvas. This has been a simpler, more efficient, and more effective option for recording and disseminating numeric scores to students in my Facebook courses.

LIMITATIONS OF FACEBOOK AS A CMS

One of the biggest limitations to using Facebook as a CMS is the inability to create automated quizzes in Facebook. For a large class size, this limitation is magnified. My courses tend to have 15-50 students, so I can conduct them without automated quizzes. If I were to need to use a quiz, I would utilize some kind of web code, like

JavaScript, or an embedded application to achieve this purpose. When Facebook first announced the ability to utilize Ask a Question, I thought this option might be the answer to the need for quizzes. Unfortunately, it is not, since Ask a Question is for the entire Group, and not an individual.

Another limitation is using Facebook for courses where the students are minors. If I were not teaching adults, I would make changes in order to properly use Facebook as a CMS with children. I would likely only use a closed submission method for assignments, not "Friend" any of the students, and clearly outline the parameters of what is included in the course and what is outside of the course. Though it is not required to be Facebook Friends in order to interact with individuals within the Group, interaction outside of the Group typically requires "Friending." Additionally, Facebook requires users to be at least 13 years of age to sign up for an account. So a course involving younger-aged students would be limited by Facebook.

Finally, the fact that all students in the course need to have a Facebook account can be viewed as a limitation. I have found this not to be much of a hindrance, since nearly all university-level students I have encountered already have a Facebook account. What has been a small hindrance is overcoming the perception that Facebook is for having fun and wasting time, and that it is not used for doing something productive, like a course. Any instructor considering using Facebook as a CMS should anticipate and prepare for this perception.

CONCLUSION

In my search to improve my ability to offer courses online, I have found Facebook to be a user-friendly and robust alternative to the traditional course management system. I spend less time teaching university-level students how to use the system, and more

time focused on course content. College students in my courses feel they can begin building their professional network, while at the same time doing coursework in Facebook.

Something I recognize when utilizing a social media platform for any productive

use is there is no complacency. What works today might not be what works tomorrow, so it is important to be ever adapting. In this light, I plan to always be looking for ways to improve using Facebook as my course management system.

 \dots I have found Facebook to be a user-friendly and robust alternative to the traditional course management system.



Online Learning Is Not Flat

An Analysis of Online Learning That Promotes Interactivity

Cynthia Sistek-Chandler, Denise Tolbert, and Valerie K. Amber

OVERVIEW

nline learning in K-12 schools, in community colleges, and in higher education is the choice method of delivery. As traditional K-12 educators move to the role of instructional designers of online curriculum, it is important to recognize that what works in a face-to-face classroom filled with text and textbooks does not always work in a web environment that uses a learning management system. Online learning is not flat, is not text heavy, or a mere replication of the textbook. Good online content invites, motivates, and

engages the learner to interact with the online content. The term "engaged" is used here to emphasize that the participants interact with each other around substantive issues (Xin & Feenberg, 2006). In addition, Mitsuhara, Kanenishi, and Yano (2006) coined the phrase "multiperspective thinking" in reference to a learner's need to think about online content from many perspectives beyond their individual interests. All relevant elements need to be explored in efforts to enhance online learning.

The term, "interactive learning" is described as the decisive measure of



Cynthia Sistek-Chandler,
Assistant Professor, National University School
of Media and Communication, Technology &
Health Sciences Center, 3678 Aero Court,
San Diego, CA 92123.
E-mail: cchandler@nu.edu



Denise Tolbert,
Assistant Professor, National University School
of Media and Communication, 3390 Harbor
Boulevard, Costa Mesa, CA 92626.
E-mail: dtolbert@nu.edu

engagement in an online or in an onground class. As a dynamic relationship between teacher and students, between students and resources, and among students, interactive learning encompasses all content areas and all dimensions of learning. Steinaker and Leavitt (2008) designed the Interactive Learning Taxonomy (ILT) as one of 17 taxonomies educators could employ while engaged in the act of teaching and learning.

The role and function of computerenhanced learning as well as the level of interactivity for the teacher and learner has long been studied in the literature. "Computer based instruction provides greater potential for truly interactive instruction than any mediated teaching device ... excluding the human tutor" (Jonassen, 1988, as cited in Sims, 2003, p. 87). To frame how digital content becomes "interactive," the ILT and its inquiry needs to include many of the contemporary digital construction tools such as blogs, wikis, learning and content management systems, and other Web 2.0 tools that allow for the easy



Valerie K. Amber,
Associate Professor,
National University School of Education,
3390 Harbor Boulevard,
Costa Mesa, CA 92626.
E-mail: vamber@nu.edu

construction of digital, multimediaenhanced instruction.

The purpose of this article is to report ongoing action research conducted with K-12 educators in a master's degree program that specializes in educational technology with a focus on teaching online. Action research is defined as the process of "any systematic inquiry conducted by teachers in a teaching learning environment, to gather information about the ways in which their particular school operates, the teachers teach, and the students learn" (Gay, Mills, & Airasian, 2006, p. 595). An action research model has been applied to examine if the ILT could be effectively utilized in an online environment. This study also seeks to exemplify the ways in which each step in the taxonomy is made intrinsic to the online learning process. Following Davies and Dunhill's (2008) model of learning study, lesson preparation is preceded by an attempt to identify variation in ways of understanding a phenomenon that is the focus of the lesson. The intention of this activity is to help students to revise their professional knowledge, their theories of learning and teaching, in the light of their experience of practice.

Through this ongoing research, we continue to collect data on the application of the ILT as a practical tool for the construction and analysis of online content and online instruction. Although this research reports the role of a student-constructed lesson using a blog tool, there are other learning and content management systems that will be studied in future research.

THEORETICAL CONSTRUCT OF INTERACTIVE LEARNING

The ILT was first published in Steinaker and Leavitt (2008). The five categories of the ILT are: invitation, involvement, investigation, insight, and implementation. At the first stage of the taxonomy, activities in the invitation category are designed to engage students. Students need to become

engaged in terms of content and process and then become aware of the short-term content as well as long-term goals and outcomes. Activities in this category involve interactive dialogue as well as developing a sense of readiness to learn. Involvement with the content follows as a second category where it is essential for students (as navigators through the content) to develop new levels of interaction. Involvement is the step when connections are more firmly established with the content. At this phase, the student explores ideas, issues, and materials.

As relationships grow, so does the next category, investigation. In the investigation stage of the ILT process, the learner begins to work at the application and analysis levels of cognition (Bloom, 1956). In this category, discourse and discussion are central to investigation. Group interaction among peers online is critically important. As a key component of the ILT, interrogative interaction with the teacher is pivotal in this investigative stage. It is hypothesized that insight develops when ideas and concepts come together and the process is internalized. Students demonstrate that they have achieved insight through analysis of goals and through expected outcomes. The process of developing insight from an interactive lesson can be both a culmination and a challenge for the student. The challenge becomes how to use what they have learned within the real world of their classroom or at their workplace. Implementation is the fifth and final category. Implementation is the dissemination and sharing of the changes that have taken place during this process of thinking, learning, and teaching. In this category of the ILT, students assume responsibility for what they have learned. They demonstrate their roles as influencer and disseminator. These are the categories of the ILT and the proposed process which students will experience when they go through the taxonomy.

CONTENT AND LEARNING MANAGEMENT SYSTEMS (LMS)

In order to examine the concept of "content" in relation to its applications in online education, it is useful to consult current empirical research and advances in pedagogical theory that focuses directly on online education. The logical starting point is an examination of the teaching philosophies and pedagogical theories that lay the foundation for creating a framework of learning. What such studies try to answer are questions that deal with what students need to learn in order to attain knowledge or mastery of a subject and how learning actually takes place. Following this, in order to understand how information is best communicated within learning management systems, we need to look at theoof media design, instructional methodology, and information and communication technologies. The question of how various modalities and media forms affect the transmission of ideas, the presentation of content, its delivery recognition of critical inquiry, evaluation and learning must be outcomes examined addressed. The cycle of learning is completed when reliable measures of student learning and effective methods of supplying students with critical commentary and expert feedback are in place. These measures are essential in ensuring that the content in question has been successfully conveyed, understood, integrated, and applied.

Figure 1 illustrates the basic plan or framework for addressing the central issues involved with the development of online content. The framework divides the main topic into four independent but interconnected components: design and technology, pedagogy and instruction, student-centered learning, and assessment and evaluation.

Design and Technology: Course design, comprised of instructional and aesthetic (visual, auditory, etc.) design, and technological instruments such computer hard-

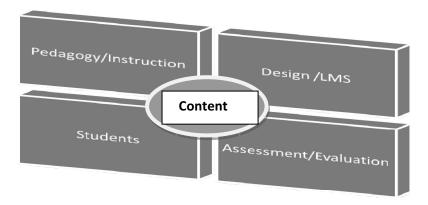


Figure 1. Content framework.

ware and software, learning management systems (LMS), etc., are critical components in the construction of effective learning environments. The design and technological modality of an online course is perhaps the most crucial factor in determining the quality of a learning experience. Instructional design should facilitate the pedagogical model being followed, while technology supports the new teaching paradigms of the information age.

Pedagogy and Instruction: Instructional methodology uses pedagogy and appropriate instructional tools to insure effective learning outcomes. Though there may be some differences across content areas, the role of the instructor as an active participant, mentor, and model with expertise in understanding and meeting the needs of adult learners is key.

Student-Centered Learning: This approach to education that focuses on the personality and needs of students as central in the education process. It has many implications for the design of curricula, course content, and interactivity within the online learning platform. Although student-centered learning requires students to be active, responsible participants in their online learning process, the institution must provide a framework and an effective environment for ensuring excellence in student learning.

Assessment and Evaluation: Assessment is integral to the production of useful, effective feedback and plays an essential role in the achievement of quality learning outcomes. Evaluation, guided by high-level standards and coming from experienced and knowledgeable sources, helps compare student achievement and various instructional methods.

BACKGROUND OF STUDY

EDT 610 Teaching Online is the second class in obtaining a master of arts degree with a specialization in educational technology. The entire program is delivered online through eCollege, a learning management system. The specialization confour focused technology integration classes as a supplement to the MAT offered by the School of Education at National University. This specialization is designed to assist practicing teachers to enhance their teaching skills and to develop knowledge and skills for using technology in an educational setting. EDT 610 is a comprehensive course that covers principles and strategies for conducting online instruction in a variety of online teaching environments including hybrid and blended instruction. In this class, students survey theories and explore the application of online learning and teaching for youth and adults. During this class, students are engaged in both asynchronous and synchronous discussion groups.

As the culminating project for this class, students were asked to create an interactive, online lesson using a blog format. A blog is a "web log," an online lesson designed by the teacher to teach a concept or concepts in a specific subject and grade level. Blogs are widely used in K-12 education as a format for posting content and for communicating thoughts and ideas. Much of the "blogosphere" outside of education is used for logging personal comments and opinions. For the purpose of this class, students created a blog in EduBlog.

DEMOGRAPHICS AND DESCRIPTION

In March 2009, the Interactive Learning Taxonomy (ILT) was integrated and applied in the EDT 610 class as a focused assignment for the analysis of an online lesson. Formerly, the class did not contain a model for building and assessing an online lesson. This pilot class included 13 students: 7 males and 6 females. For this initial study, 12 students completed the application and analysis of the ILT. Since March 2009, four additional classes were added to the study, March 2010 (n = 19), July 2010 (n = 21), March 2011 (n = 18), and July 2012 (n = 38).

PROCESS FOR ANALYSIS AND APPLICATION OF THE TAXONOMY

Students in EDT610 were asked to review a blog created by a former student, C. Lee (2009). An ILT template describing each stage was used to evaluate the lesson/blog. Responses had to be three or more sentences in length. In addition, students were asked to rate the lesson according to criteria to determine the extent the blog followed the ILT criteria for interactivity and to rate at which level the National

Educational Technology Standards (NETS) were mastered. These standards were developed by the International Society for Technology in Education (ISTE): Standard #1 – Facilitates and Inspires Student Learning and Creativity (NETS, 2008). The overall evaluation of the lesson/blog was rated using a 4-point Likert scale.

EVALUATION OF ONLINE LESSON/ BLOG WITH APPLICATION OF THE ILT (SISTEK-CHANDLER, AMBER, STEINAKER, & TOLBERT, 2008)

- 1. Invitation: How has the instructor motivated and invited the learner?
- 2. Involvement: How does the lesson involve the learner with the content?
- 3. Investigation: Does the content of the lesson use an investigative strategy for learning the content?
- 4. Insight: What insight does the student gain from being involved in the lesson?
- 5. Implementation: How does the lesson and learning encourage the learner to implement or apply the content?

Does this lesson address the ISTE/NETS Standard #1? 1 = Doesn't Address; 2 = Somewhat; 3 = Mostly Addresses; 4 = Completely Addresses

STUDY RESULTS

In the initial pilot study, 12 students completed the review of the lesson/blog and provided feedback that enabled the researchers to gauge their understanding of the taxonomy and consider it for future analysis.

ANALYSIS QUESTIONS

1. How has the instructor motivated and invited the learner?

Responses to the Invitation stage indicate the students perceive the site as meeting this stage of the taxonomy. Students mentioned such elements as "eye-catching and topic appropriate graphics; simple, attractive, well-organized format; page is easy to follow; and material is introduced with examples."

2. How does the lesson involve the learner with the content?

Responses to the Involvement stage note that learners using the blog are required to interact with the content. Comments "builds on previous knowledge; good use of a variety of websites; provided California standard; rich print environment; allows students to interact with technology; and requires students to create a flow map and answer questions."

3. Does the content of the lesson use an investigative strategy for learning the content?

The action words used by respondents indicate their view that students are involved in investigative activities such as "students explore their surroundings and relate material to previous knowledge; students list adaptation of living organism; applying concepts; responding to posts; choosing an environment; and visually expressing results." This indicates students are challenged to use higher order thinking skills.

4. What insight does the student gain from being involved in the lesson?

The Insight stage was seen as a strong element of the class blog. Comments from this area detailed activities that would encourage students to apply the knowledge in practical ways: "Students respond to posts and use critical thinking in their descriptions; students choose an environment and adapta-

tions; students learn to visually express what they've learned; reinforcement occurs through use of external websites and activities; learning by reading other posts; encouraged to apply content; website encouraged real-life application; lesson draws comparisons to stages students will go through; students create a flowchart, and use knowledge to solve crimes; students provide their own examples through blog postings.

5. How does this lesson and learning encourage the learner to implement or apply the content?

Students documented activities that lead to implementation of the content: "respond to blog postings; answer questions based on observations; students choose an environment and remark on adaptations; students use knowledge to solve crimes; websites encourage interaction and real life application." Each of these elements encourages learner interaction with the content.

The EDT610 students were also asked to rate how well the instructional blog addressed ISTE/NETS Standard #1: Facilitates and Inspires Student Learning and Creativity (NETS for Teachers, 2008). A 4-point Likert scale was used by the students to evaluate the level at which the lesson complied with or met the ISTE standard: 1 = Doesn't Addresses; 2 = Somewhat Addresses; 3 = Mostly Addresses; and 4 = Completely Addresses.

In the July 2009 study, the mean of the 12 responses was 3.83. Seventy-five percent of respondents (n = 9) rated the blog as 4; 17% (n = 2) rated the blog 3.5. For the March 2010 section the mean score was 3.66 (n = 19), for the July 2010 section, 3.7 (n = 20), and for the July 2012 section, 3.1 (n = 38).

In July 2010, many students readily adopted this analysis of an online lesson

and have also applied reflection and analysis to the overall process. In the dissertation research conducted by Ma, Lai, Williams, Prejean, and Ford (2008), teachers who engaged in online journals often lacked articulate and reflective attributes of meaningful learning. Reingold, Rimor, and Kalay (2008) emphasize that learning does not take place without reflection and engagement of metacognitive processes. One student in particular has applied this metacognitive statement in his work, suggesting we add another category to the taxonomy as an aid for his personal construction of the lesson.

Dear Professor, Given the form [template] that I received ... I am hesitant to suggest adding another "I" to the list without first consulting you. Given the research that is stamped all over ... the course's text-books, might there be a place for an "Interactivity" category in the taxonomy? Overall, I believe the model [ILT] is a useful checklist, but will include the interactivity in my own evaluations to insure that I create the most powerful learning tools that I can. (Student, EDT 610, July 2010)

Through continuous observation and analysis, we have noticed another theme that students have also engaged in the reflective process of comparing the model (C. Lee's blog) to their own blogs.

Overall it is a great blog. I see many weaknesses in my own [blog that I have created] that I am not sure I will be able to easily fix. A well-thought out lesson will take hours to complete, refine and edit, but once the final product has been produced, it can be replicated year after year with ease. (Student, EDT 610, July 2010)

OVERALL FINDINGS

The ILT, its structure and categories were generally easy to apply, initiating thoughtful responses to the prompts. All of the five categories were responded to in detail. The Insight stage was seen as a strong element of the class blog. The principles of the ILT can be used to increase interaction and involvement in an online course. The ILT can assist the teachers in guiding the construction of content to be more interactive. As a tool for analysis and evaluation of an online, interactive lesson, the ILT proved to be extremely positive and useful; students easily embraced the taxonomy. Often students engage in the practice of restating factual information; however, in this case, the ILT fosters higher order thinking through application and analysis. Overall, the results indicate the ILT is a valid tool for analysis of interactivity for practicing teachers.

The July 2009 study is the first application that actively applied and assessed the five elements of the ILT (Sistek-Chandler et al., 2009). Students responded to using the ILT without prompting or hesitation. Although the population for the initial study was small (n = 12), the pilot proved the resounding utility of the ILT and the need to include this application and analysis in future EDT 610 classes. Since the initial pilot, an additional 40 students have been asked to participate in the study of the ILT to analyze a sample blog and reflect upon their understanding of the ILT stages.

APPLICATION OF THE INTERACTIVE LEARNING TAXONOMY IN FUTURE STUDIES

In applying the interactive learning process, we believe this approach has the potential to produce a high quality online learning environment that actively and purposefully engages learners (Baldwin & Sabry, 2003). According to Steinaker and Leavitt (2008), the strength of interactive learning is that it encapsulates the overall process of learning and helps to provide a concrete representation of knowledge for the student. Implementation of the ILT theory becomes the springboard to new

areas of learning and assists the learner to move toward the replication of the process in a new context. The taxonomy of interactive learning can be utilized for online teaching while the designer applies each step of the ILT to a planned and purposeful pathway for learning.

Online learning environments (OLE) and online content is typically designed for one-way dissemination of information (Hughes, Terveen, Ernst, & Ooms, 2009). Hughes et al. posit that the OLE delivers the instructor's content and structure. without the consideration of students' needs, perspective, or interests. We refer to this as flat, passive content with a minimum level of interactivity. Our research extends beyond the issue of learning style and emphasizes the need to apply five guiding principles from the ILT to engage the learner with interactive content; content that promotes interactivity between teacher and students, between students and resources, and among students. The Web interface is a bridge between instruction and learning (Cassarino, 2003). It is clear that while presentation of content is clearly one important aspect of any learning encounter, without effective interactivity manifested through communication, involvement, control, and adaptation, the effectiveness of online and flexible learning will be minimized (Sims, 2003).

The next step in the investigation of the use of this taxonomy is to solicit suggestions to refine the ILT categories. As we move forward with new classes of EDT610, we plan to have the students use this taxonomy (ILT) to further analyze not only the work of a peer which serves as a model online lesson/blog but also to apply this same analysis as a reflection on their own instructional, online content (blog).

REFERENCES

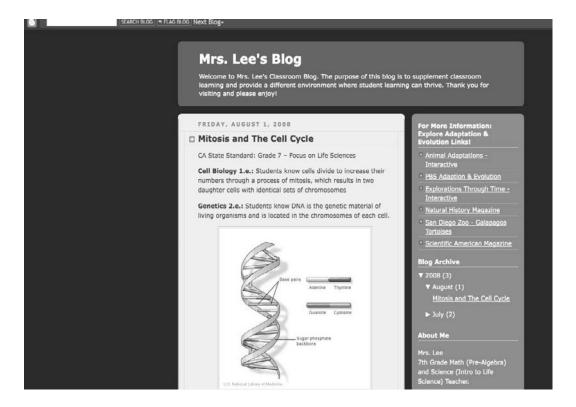
Baldwin, L., & Sabry, K. (2003, November). Learning styles for interactive learning sys-

- tems. *Innovations in Education & Teaching International*, 40(4), 325-340. doi:10.1080/1470329032000128369
- Bloom, B. S. (1956). Taxonomy of educational objectives, the classification of educational goals—Handbook I: Cognitive domain. New York, NY: McKay.
- Cassarino, C. (2003). Instructional design principals for an eLearning environment. *Quarterly Review of Distance Education*, 4(4), 455-461.
- Davies, P., & Dunnill, R. (2008). "Learning study" as a model of collaborative practice in initial teacher education. *Journal of Education for Teaching*, 34(1), 3-16.
- Gay, L. R., Mills, G. E., & Airasian, P. (2006). *Educational research: Competencies for analysis and applications* (8th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Hughes, J., David, E., Ooms, A., & Terveen, L. (2006). The next generation online learning Environment: Designing for community and collaboration. Retrieved June 16, 2009 from http://dmc.umn.edu/grants/2006/hughes.pdf
- Ma, Y., Lai, G., Williams, D., Prejean, L., & Ford, M. (2008). Exploring the effectiveness of a field experience program in a pedagogical laboratory: The experience of teacher candidates. *Journal of Technology and Teacher Education*, 16(4), 411-431.
- Mitsuhara, H., Kanenishi, K., & Yano, Y. (2006). Adaptive link generation for multiperspective thinking on the Web: An approach to motivate learners to think. *Innovations in Education & Teaching International*, 43(2), 137-149. doi:10.1080/14703290600650434
- Reingold, R., Rimor, R., & Kalay, A. (2008). Instructor's scaffolding in support of student's metacognition through a teacher education online course: A case study. *Journal of Online Interactive Learning*, 7(2).
- Sims, R. (2003). Promises of interactivity: Aligning learner perceptions and expectations with strategies for open and flexible learning. *Distance Education*, 24(1), 87-103.
- Sistek-Chandler, C., & Amber, T. D. (2009). Interactive learning: Taxonomy for application and analysis in online environments. Retrieved from http://www.iste.org/Content/NavigationMenu/Research/

NECC_Research_Paper_Archives/ NECC2009/SistekChandler NECC09.pdf

- Steinaker, N., & Leavitt, L. (2008). *Interactive learning: The art and science of teaching*. Dubuque, IA: Kendall Hunt.
- Xin, C., & Feenberg, A. (2006). Pedagogy in cyberspace: The dynamics of online discourse. *Journal of Distance Education*, 21(2), 1-25.

APPENDIX A: SAMPLE OF LESSON BLOG



APPENDIX B: INTERACTIVE LEARNING ASSIGNMENT

EDT 610 Interactive Learning Assignment (10 Points)

Review a Blog from a former classmate in EDT 610, Cindi K. Lee. http://cindiklee.blogspot.com/

You may also click on the PDF of the website for your review.

Template for Analysis of Online Lesson

Using this template, apply the (ILT) taxonomy as a basis for your evaluation of the Lesson/Blog from Ms. Lee. Respond to each category with 3 or more sentences to complete your review.

Invitation

How has the instructor motivated and invited the learner?

Involvement

How does the lesson involve the learner with the content?

Investigation

Does the content of the lesson use an **investigative strategy** for learning the content?

Insight

What insight does the student gain from being involved with the lesson?

Implementation

How does the lesson and learning encourage the learner to **implement or** apply the content?

Does this lesson address the ISTE/NETS Standard #1?

Standard 1. Facilitates and Inspires Student Learning and Creativity

Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments.

- 1 through 4 on how it addresses or does not address
- 1-Doesn't Address 2-Somewhat 3- Mostly Addresses 4- Completely Addresses

Training for Online Teaching

Robert E. Davis and Angela D. Benson

INTRODUCTION

on the expertise and dedication of a well-prepared online instructor (Ko & Rossen, 1998). New instructors need comprehensive training to ensure a strong start, and continuing support and services throughout their distance education experience to promote maximum quality and satisfaction in the online courses they teach (Lieberman & McNett, 2000). When online instructors are fully equipped with proper technical skills, familiarity with the online learning environment, and most

importantly, a true awareness of effective online pedagogies and teaching strategies, the online learning experience they create for students have the highest potential to succeed (Bedore, 1997).

PROFESSIONAL DEVELOPMENT TRAINING AT ALPHA COMMUNITY COLLEGE

This article presents the perspectives of faculty at Alpha Community College as they consider how professional development training is provided for faculty teaching online at their institution and how well



Robert E. Davis,
Management and Program Analyst,
Missile Defense Agency,
1628 County Road 100, Section, AL 35771.
Telephone: (256) 450-0157.
E-mail: Robert.davis58@gmail.com



Angela D. Benson, Associate Professor,
Department of Educational Leadership, Policy,
and Technology Studies (ELPTS), The University
of Alabama, 328F Graves Hall, Box 870302,
Tuscaloosa, AL 35487-0302.
Telephone: (205) 348-7824.
E-mail: abenson@bamaed.ua.edu

Table 1. Alpha Community College Participants' Background Information

Participant	Teaching Experience	Online Experience	Teaching Area	Department
Professor Jones (DLC and I)	9 years	7 years	Psychology	Social and behavioral science
Dr. Snow (T and I)	11 years	2 years	English	English
Professor Walker (I)	9 years	7 years	Accounting, business law	Business
Professor Criner (T and I)	5 years	2 years	Computer science	Computer science
Average	8.5 years	4.5 years		

Note: I = Instructor, DLC = Distance learning coordinator, T = Trainer.

that training is transferred into effective online teaching. The Carnegie Foundation classifies Alpha Community College as a medium-sized 2-year college serving a medium-sized rural population area. Alpha Community College had 46 online classes scheduled during the Fall Semester 2008, and 82 in Fall Semester 2012. Four full-time instructors who taught both traditional and online courses were interviewed: Professor Jones, Dr. Snow, Professor Walker, and Professor Criner. Table 1 summarizes their teaching experience.

PERCEPTIONS OF ONLINE EDUCATION

The instructors interviewed had a very positive perception of online education. This was not always the case. When Alpha Community College first offered online classes many instructors were faced with a "culture shock." These instructors were against online education because they feared change. Professor Jones stated:

I actually heard that from our instructors. I know it's a fear of change. It comes out of a concern for what's going to happen to my job. Our philosophy (at Alpha Community College) is, if you do not want to teach online you do not have to.

If we force people into it; the quality will not be there. We don't want to force people to do something they are uncomfortable with, not to mention stepping on their academic freedom and intellectual freedoms.

One of the instructors interviewed was totally against the online education program. This instructor had now adopted the philosophy that online education offers students the same education as a traditional classroom experience. She has become one of two instructional designers at the college. Dr. Snow stated:

When I was first introduced to online education I was against it. I thought there was no way online education could be as effective as face-to-face education. I believed this was a technique teachers and students were using to try to get out of doing their work.

Experiencing an online course enabled this instructor to change the way she thought about online education. While working on her doctorate, she took classes online. She describes the effect of those classes: "I really started learning a lot and enjoying the process, so I volunteered to teach an online English course."

EVOLUTION OF ALPHA'S FACULTY TRAINING FOR ONLINE TEACHING

Professional development training for online instructors has steadily progressed at Alpha Community College since the first online classes were offered in 2001. According to Professor Jones, "When the college first offered online classes it was to stay in competition with other schools and the college offered very little training." All of the instructors agreed they had to figure out how to use the course management system, WebCT, on their own. Professor Walker had to teach herself through trial and error:

TRAINING!!!! My biggest challenge was the technology. I obtained the knowledge for teaching online classes through trial and error. My formal training came from classes I was taking in my doctoral program, which dealt with integrating technology into the classroom setting.

According to Professor Criner, the need for training for online instructors was clear in that first online class:

I am kind of laughing because that first online class was a fiasco. You get better with experience and learn from your colleagues, learn from your mistakes; learn from classes you take and those you teach. Training would have helped tremendously.

To address this lack of training, instructors began offering their own workshops, sharing what they had learned about WebCT. Dr. Snow remembered:

I took a small workshop that was offered by another instructor who was using WebCT. The workshop was centered on how to use the tools provided by the software but I wouldn't say that would be considered formal training.

Using WebCT tools was a point of confusion when Alpha Community College began offering online classes. According to Professor Jones, "Instructors needed to know more about the hardware tools found in the software used for online classes. What does this tool do? At that time, it was difficult, because I didn't know how to use it."

To address the training needs expressed by the instructors, the college contracted WebCT to provide training. After Blackboard purchased WebCT, Alpha Community College converted to Blackboard and Blackboard was contracted to provide training. Blackboard personnel visited to the college each semester (summer excluded) and conducted a two-day, 14-hour training session on the mechanics and methodology of online class environments. As Professor Jones described:

We now have Blackboard instructors come to Alpha and train our faculty. Since I have been in charge of the distance education program, we have had a formal training process in place. Not only on the pointing and clicking, but also on the online strategies needed for successful online classes.... The training consisted of pedagogies of online classes and provides examples of good and bad courses. The training includes hands-on training where the instructors receiving the training develop their courses during the training sessions. The training includes transitioning a class from the traditional lecture format to an online format. This has become part of the culture we have adopted at Alpha Community College.

INFRASTRUCTURE SUPPORT

Over time, Alpha developed an organizational structure to support online education. Professor Jones, one of the first instructors to teach online at Alpha, was appointed as the collegewide division chair for distance education (distance learning coordinator). She displayed enthusiasm about the steps the administration at Alpha had taken to reorganize the online education program into a separate division of the college:

We have recently reorganized distance education and the President has appointed a distance education chair and a small President's Advisory Committee for distance education. This committee makes recommendations about policies, procedures and so forth for the college.... One of the standards does say that your budget reflects your commitment to online distance education. We did not initially have distance education in our budget; however we now actually have a line item in the budget for distance education. So we are moving in the direction that we're actually following through with our goals and plans for distance education. We are writing a 3-year plan, strategic plan, for our process for the goals we want to accomplish. Our ultimate goal is to have a virtual campus that has administrators, just like a regular campus. Eventually, that is where we want to go and we're getting there.

The administration's decision to develop a Distance Education Faculty Manual was important. The manual included items such as: distance education policies, online course approval steps, and tips for a successful online course. This manual was posted on the Alpha Community College website and focused on the procedures to which each online instructor must adhere.

Another administrative decision that helped the transition of Alpha Community College to an online environment was the administration's decision to require, not only online instructors, but all division chairs and associate deans to attend training for online teaching. The policy set forth in the Distance Education Faculty Manual requires:

All division chairs and campus associate deans are trained in best practices of online instruction. This is to enhance the evaluation process for online instructors. All division chairs and campus associate deans must meet with the distance education chair to discuss the evaluation

items before they meet with the instruc-

INSTRUCTIONAL DESIGNER SUPPORT

The interim president at Alpha Community College appointed two online instructors during the fall semester 2008 to the position of instructional designer. Using instructional designers, Alpha was able to supplement the training provided by Blackboard with follow-up training and support for faculty. Dr. Snow, another instructional designer, stated:

The college does a combination of training where we do bring in someone from Blackboard who is a certified trainer. In addition to that, Professors Walker, Jones, and I have been providing training for new online instructors for our campuses. We go from campus to campus and train instructors on how to use the tools. My responsibility is to review the learning styles or teaching strategies as practices for the online environment. In addition to that, I have also held open labs where instructors come after they have finished training and are in the process of working on new courses. I help them get hands-on feedback during that lab session. I have reached out to instructors since I became an instructional designer this term. My future plans are to develop an online resource site for instructors to utilize at their convenience and also to have me there to answer questions and have resources for them to utilize. I want to start offering the open lab sessions once or twice a month instead of once a semes-

TRANSFER OF LEARNING

Training, including professional development training for faculty teaching online, is useless if it cannot be transferred into performance (Yamnill & McLean, 2001). Learning is of little value to organizations (and community colleges) unless it is transferred in some way to performance (Holton, Bates, Seyer, & Carvalho, 1997).

Therefore, this article uses Holton's (1996) transfer of training model as the lens for viewing the training provided to community college instructors teaching online. The model proposes three primary outcomes and three primary inputs of a training intervention. The three primary outputs are: learning, individual performance, and organizational results. The three primary inputs are: motivation to transfer, transfer climate, and transfer design (Holton, 1996). According to Holton (1996), motivation to transfer comprises four categories: intervention fulfillment, learning outcomes, job attitudes, and payoff. Transfer climate was described by Schneider and Rentsch (1988) as a "sense of imperative" (cited in Holton et al., 1997, p. 97) that arises from a person's perception of his or her work environment and its influences on the extent to which that person can use learned skills on the job (Yamnil & McLean, 2001). Training design can be summarized as the characteristics of the learning environment, such as the materials, opportunities to practice, providing feedback, and learning objectives. Using the components of Holton's transfer model, this section identifies the factors that contributed to faculty at Alpha Community College successfully applying what they learned during training in their online courses.

MOTIVATION TO TRANSFER

When Alpha Community College adopted online education in 2001, instructors encountered a changing role in the new online classroom. Dr. Snow stated:

I think that it (online teaching) is a changing role; and I think that it is very important for instructors to realize it is a change. As our role as an instructor changes; it becomes a different environment. It is a type of culture, which I have to adjust to in the way I interact with students, motivate with students, inspire

students, and communicate with students.

Factors external to Alpha Community College influenced instructors' motivation to teach online and to apply what they learned in their training. According to Dr. Snow,

When I began my doctorate program, I was very skeptical about online classes and thought I was not going to learn very much, however I'd jump through the college hoops and take the required courses and get my Doctor of Philosophy degree. However, to my surprise, when I started taking online courses I really started learning a lot and enjoying the process—so much so—I volunteered to teach an online course at Alpha Community College.

TRANSFER CLIMATE

Administration Support. At Alpha Community College, the administration has been very supportive of the culture change to an online environment and has provided funding and other resources to train their online faculty. Dr. Snow stated:

Our current college-wide dean is very supportive. She wants to see it (online education) grow, she wants to be sure we have the resources to help it grow and to help it grow positively to ensure quality. She supports the instructional designers; she supports Professor Jones in her role as distance education coordinator, and sees that this is one of the best ways our college can grow. We currently have a new president who will be arriving in January. We had an interim president this past year. He was weak in the area of technology, although he seemed to understand the importance of technology. The president and vice-president who were here before the interim president seemed to have the attitude that there was no way online education could have quality. They would say, yes, we need to do it; however, the resources weren't devoted to online education.

Appropriate Technology. The use of WebCT, and later Blackboard, as campus course management systems, not only enabled the college to offer distance education courses but to also transform the traditional classroom. Instructors at Alpha Community College not only utilize their skills obtained through professional development training for an online course but also incorporate these skills into their traditional classroom. Professor Walker stated:

Even though I don't teach all my classes in a traditional or online format, I supplement each and every class, and have for years, with an online supplement. I tell my students it is extremely important they prepare for class, especially in accounting class. If you do not come to class, you will not pass. If you can't make it to class, I have materials and resources out there for you. There is no reason why you cannot keep up. This is why the Powerpoints, lecture notes, quizzes, and these things are out there for them.

TRANSFER DESIGN

Instructional designers provided professional development training to online instructors in their real-life work environments. The training was provided using lecture, PowerPoint, and web-based techniques the instructors could use in their own courses. Online instructors were always looking for new ideas to enhance students' learning. Professor Criner added:

Microsoft 2007 has a great tutorial on their website, so as I was sitting in the training listening to his (instructional trainer) advice and recommendations, and this was one of the items I decided to incorporate into my online class as a web link.... As my students have a problem, for instance inserting a page number, they can go to the Microsoft Office 2007 website and click on the tutorial. It walks them through the process. It is those kinds of other content areas that I will be able to add to my class.

Student-student and student-faculty interaction. Dr. Snow believes that the most difficult part of online instruction was adjusting the way she interacted with students:

Our role as instructors has changed to a different environment a type of culture that I have to adjust to in the way, in which I interact with students, motivate with students, inspire students, and communicate with students. I think one of the things I have to do is be more of someone who facilitates, guides the students, advises them with the resources (quality resources), and then encourage them to interact with those resources and to interact with others in the online course, including myself and their classmates, in order to help them understand the course content.

One of the methods used by the online instructors to facilitate interaction was the discussion board, which they learned to use during their professional development training. Professor Criner described her use of discussion boards in her online classes:

I have discussions, which are solely related to Word, Excel, PowerPoint, etc. I facilitate discussions on these areas with the students. I send powerpoint presentations to my students for each section we cover. Students work on assignments individually and I grade them and provide timely feedback. If it is wrong, then I'll say you should go back and readdress this issue, look at page so and so in your book, and send the assignment back to me. Once they are completed, I can grade your work again. There is a lot of communication, particularly with assignments and of course, I have assessments, little quizzes, for each section we cover.

Prompt Feedback. Students needed help in assessing their existing knowledge, frequent opportunities to perform and receive feedback, and time to reflect on what they have learned. The instructors provided numerous methods in providing prompt feedback to the students. E-mail, online discussions, tutorials, and other methods were utilized throughout the semester. Professor Walker used an accounting personal trainer. The students submitted their answers and immediately received feedback. He described the process: "This gives students immediate feedback, not by providing the correct answer but by indicating which questions were wrong." The students are then allowed to rethink the problem and resubmit their answers.

LEARNING AND INDIVIDUAL PERFORMANCE

A review of the class materials, syllabi, and other course documents used by the instructors show that the instructors used a variety of pedagogical practices in their online courses. These pedagogical practices, which enabled instructors to design their online course with student learning outcomes at the forefront, are presented next, classified by phases of instruction—presentation, guidance, and assessment.

Presentation. Professor Jones used course content and student discussions to introduce the topics of the course materials in her online class. She required students to present discussions each week on the course materials and respond to other students' discussions. This method kept the students actively participating in the class, gave them access to other students' understanding of the course material, and provided them with critical thinking opportunities.

Guidance. Professor Jones used the discussion area as a means for question-and-answer segments. She encouraged students to use the questions forum to post their comments, questions, or concerns about the course materials. She also encouraged the use of e-mail and responded to student e-mail in a timely manner. In addition, she provided supple-

mentary online resources, such as Power-Point presentations and lecture notes, to complement the required readings and discussions.

Assessment. To allow for assessment and evaluation of the students' understanding of the course materials, Professor Jones required students to complete assignments for each chapter covered in the course. She also gave three exams. Professor Jones stated, "I require that students take all three exams at a testing center."

LESSONS LEARNED FROM ALPHA COMMUNITY COLLEGE

The experiences of the instructors at Alpha Community College provide several insights that can be of help to other institutions developing online courses and programs. The key lessons learned for these instructors are:

- Instructors teaching online need training on how to use the course management system being used to deliver their online courses and training on effective pedagogical practices for online teaching. Institutions err when they only provide training on how to use the features of the course management system.
- 2. Administration support is critical. The administration must provide a support structure for their faculty teaching online. The structure does not have to be as elaborate as the one at Alpha Community College but it must provide general policies for online teaching, sufficient training and ongoing technical support for faculty teaching online and an adequate course management system.
- Faculty teaching online will begin to change their face-to-face teaching by incorporating online tools and pedagogies into their face-to-face classes. This is an important unintended consequence of faculty learning to teach

- online. The use of online tools to engage students at a distance can be employed to engage resident/local students as well.
- 4. An institution does not have to have all the answers to all the online questions before embarking on a move to online education. Like Alpha, other colleges can start slow with a few courses and a few interested instructors. The success of those initial courses and instructors will serve as a beacon of possibility to others on the campus.

REFERENCES

- Bedore, G., Bedore, M., & Bedore, G., Jr. (1997).
 Online education: The future is now. Phoenix,
 AZ: Academic Research and Technologies
 Press.
- Holton, E. F. (1996). The flawed four-level evaluation model. *Human Resource Development Quarterly*, 7(1), 5-25.

- Holton, E. F., III, Bates, R. A., Seyler, D. L., & Carvalho, M. B. (1997). Toward construct validation of a transfer climate instrument. *Human Resource Development Quarterly*, 8(2), 95–113.
- Ko, S., & Rossen, S. (1998). Faculty development for online instruction: Two models for effective training. Presented at the Teaching in the Community College Online Conference, Honolulu, HI. Retrieved from http://leahi.kcc.hawaii.edu/org/tcon98/paper/kohtml
- Lieberman, J., & McNett, M. (2001, October).

 Mentoring new online faculty: Strategies that work. Presented at the International Online Conference on Teaching Online in Higher Education, Honolulu, HI. Retrieved from http://kolea.kcc.hawaii.edu/tcc/tcon01/papers/mcnett lieberman.html
- Schneider, B., & Rentsch, J. (1988). Managing climates and cultures: A future perspective. In J. Hage (Ed.), *The future of organization* (pp. 181-200). Lexington, MA: Lexington Books.
- Yamnill, S., & McLean, G. (2001). Theories supporting transfer of training. *Human Resource Development Quarterly*, 12(2), 195-208.

FACULTY TEACHING ONLINE WILL BEGIN TO CHANGE THEIR FACE-TO-FACE TEACHING BY INCORPORATING ONLINE TOOLS AND PEDAGOGIES INTO THEIR CLASSES.

Yào! iSí! Yes!

International Perceptions of Online Education

Jennifer A. Linder-VanBerschot and Elena Barbera

INTRODUCTION

Friesen (2009) notes that theory and research struggle to keep up with the continuous innovations of the Internet. Due to this rapidly developing state of technology, researchers, instructors, instructional designers, and students alike have questions and concerns about online education. In Bogdan and Biklen's (2007) description of qualitative research, they suggest that qualitative researchers construct "a picture that takes shape as you collect and examine the parts" (p. 6). The

purpose of this study is to further enhance the current picture we have of online learning through the analysis of instructor and student perceptions of knowledge acquisition and the ability to transfer learning in online education courses in three countries.

LITERATURE REVIEW

At the turn of this century, Shive and Jegede (2001) suggested that research should be distance education's next important initiative, contributing to global eco-



Jennifer A. Linder-VanBerschot, Instructional Design and Adult Learning, University of Colorado Denver. Telephone: (303) 989-2391. E-mail: jennifer.vanberschot@ucdenver.edu



Elena Barbera,
Director of Research and PhD program,
eLearn Center, Universitat Oberta
de Catalunya, Barcelona, Spain.
Telephone: 34.93.326.34.01.
E-mail: ebarbera@uoc.edu

nomic development. There have been great advancements in distance education research during the past decade—yet leaders in the field still call for further research with increased international focus (Uzuner, 2009; Wright, Dhanarajan, & Reju, 2009).

QUALITATIVE RESEARCH

The research study presented here explores the topic of online education in three countries using a qualitative approach. Qualitative research provides rich descriptions of people and places, not easily captured by statistical data. It allows researchers to operate under the assumption that "nothing is trivial, and everything has the potential of being a clue that might unlock a more comprehensive understanding of what is being studied" (Bogdan & Biklen, 2007, p. 5).

Now that distance education is viewed as a respected partner to traditional faceto-face education, it is time to look at the field critically (Mason, 2006; Visser, 2003) and determine which lessons we have learned and should share. In a qualitative study, Eastmond (1995) identified the main components that influence the distance learning experience: learner readiness, online characteristics, and the learning approach of the students. Despite his research being over 15 years old, these components are still at the top of the list (Agius, 2003; Aubteen Darabi, Sikorski, & Harvey, 2006; Tallent-Runnels et al., 2006). As collaboration tools have improved, researchers have determined that a sense of community is also important (Annand, 2011; Ke, 2004; Lapadat, 2007).

EDUCATIONAL OUTCOMES

Mayer (2002) listed two important educational goals connected to knowledge acquisition, the first of which is retention. Retention is similar to knowledge acquisition, or what content the student feels is important or beneficial, in that it requires students to remember newly acquired knowledge. In an online environment, learners must take the responsibility of logging in to the classroom and working through the content (Smith, 2008). This greater sense of responsibility on the learner forces the instructor to become more accountable since he or she must create a clear direction and pathway for progress through the course (Smith, 2008). Palloff and Pratt (2009) recommend all online instructors identify competencies, as well as corresponding outcomes for each competency. Instructors should then design materials and determine assessments to determine student performance.

Garrison, Anderson, and Archer (2001) investigated the extent to which cognitive presence can be created and supported in an asynchronous online environment. Cognitive presence is similar to knowledge acquisition; in an online course, cognitive presence would be apparent in learners as they demonstrate an increased interest in a topic, appreciation of different perspectives, and construction of solutions to previous questions. The authors concluded that cognitive presence is strongly linked to instructor support. Instructors committed to bringing cognitive presence into the online classroom introduce relevant problems, connect new ideas to previous expedetermine riences. and practical applications for transfer (Garrison et al., 2001).

Mayer (2002) included transfer of learning as the second of the two most important educational goals. Transfer takes knowledge acquisition a step further and requires that students make sense of the new information enough to apply it to different contexts. Mayer explained that transfer of learning leads to a greater sense of meaningful learning, whereas students collaborate in the construction of knowledge to solve a problem and make sense of future experiences. Palloff and Pratt (2009) recommend the use of authentic assessments to encourage application of knowl-

edge in professional or other settings. Learner performance, therefore, should be evaluated under the same conditions and using materials as a real-world performance would present.

Few researchers have focused on transfer in an educational setting. Given the importance of return on investments in the business setting, the majority of research on transfer of knowledge has been conducted in the context of professional training. Even then there is little agreement on nature of transfer, the extent to which it occurs, and the nature of its underlying mechanisms (Lobato, 2008). In the research that has been conducted in the training setting, the impact and transfer of learning from the classroom to the workplace is often contingent upon the nature of the transfer climate (Burke & Hutchins, 2007).

INTERNATIONAL RESEARCH

Through extensive research comparing work-related attitudes across more than 50 different cultures, Hofstede (1983) found that there is a close connection between values and communication. He initially established four consistent dimensions: individualism/collectivism, high/low power distance, uncertainty avoidance/accepmasculinity/femininity. and tance, Although these dimensions provide a framework to talk about cultural differences, online researchers (Ess & Sudweeks, 2005; Hewling, 2005) argue they have limited application in online settings. Since his original study, other researchers have continued to apply the four dimensions to other cultures and contexts, and additional dimensions have since been suggested, such as long-versus short-term orientation (Hofstede & Hofstede, 2005). Furthermore, Hofstede and Hofstede (2005) included a discussion of the dimensions in different contexts, including the classroom.

When using Hofstede and Hofstede's (2005) dimensions to compare the three countries included in this study, there are

obvious differences. For example, the United States is one of the most individualist countries, whereas China is one of the most collectivist countries (with Spain being close to the middle). These differences impact the classroom. Students from individualist countries tend to speak up in class, whereas learners from collectivist countries speak up only when sanctioned by the group. Individuals from China tend to have higher power distance, meaning in the classroom they tend to have extreme respect for teachers and students only speak up when invited; individuals from Spain and United States have lower power distance. Individuals from China, Spain and the United States all tend to have similar middle-of-the-road scores for masculinity/femininity. In the school context, this means there is a relatively equal balance between ego and relationships.

Parrish and Linder-VanBerschot (2010) developed the cultural dimensions of learning framework as a tool for understanding the spectrum of cultural differences that impact teaching and learning. They explain, "The dimensions do not describe either/or conditions but spectrums along which both cultures and individuals vary" (p. 5). Unlike Hofstede and Hofstede's prescriptive dimensions, the eight key cultural dimensions in the cultural dimensions of learning framework are offered so that culturally based learning differences can be recognized during course design and development.

Demiray (2010) gathered stories from 42 universities in 39 countries in an attempt to examine the emergence and growth of elearning, offering a comprehensive discussion of online education and societal development. Authors provided historical information on the country and state of education, and then proceeded to provide case studies. Yet data from students and instructors were rarely included. While numerous international studies exist (Agius, 2003; Hope, 2005; Uzuner, 2009; Wright et. al., 2009), few take the time to

capture the words of the learners and instructors, and compare them across cultures. Moreover, minimal research that focuses on the outcomes of online learning exists.

PURPOSE OF THE STUDY

This article reports the qualitative results on knowledge acquisition and learning transfer in distance education courses at three culturally different universities. We are primarily concerned with how students and instructors perceive knowledge acquisition in formal online courses, as well as their perceptions of transfer of learning. In addition, we address the extent to which learners and instructors from the three universities share similar perceptions.

METHODS

PROCEDURES AND INSTRUMENTATION

Two secure online surveys with closedand open-ended questions were administered to students and instructors in three different countries (United States, Spain, and China). The questions used in this study were adapted from surveys used for prior research in an organizational setting (Gunawardena, Linder-VanBerschot, LaPointe, & Rao, 2010). The online surveys and accompanying consent forms were originally written in English and subsequently translated into the official language(s) of the university by an individual chosen by the researcher representing each university. The surveys sent to the Open University of Catalonia were translated into Spanish and Catalan, while the surveys sent to Peking University were translated into Mandarin. The surveys were then built using Opinio and hosted on the secure University of New Mexico Health Sciences application server.

All surveys were beta-tested to ensure clear instructions, logical questions, accurate translations, and functioning links. Any substantive changes to surveys in one language were made to all corresponding surveys. Table 1 provides a list of the three open-ended questions that were included at the end of the second survey sent to both instructors and students during the last few weeks of the semester. The responses to these questions are analyzed in this article.

UNIVERSITIES

The University of New Mexico (UNM) is the largest university in New Mexico, located in Albuquerque with around 35,000 students in attendance each year. It serves as a significant knowledge resource for the state, offering more than 200 bachelor's, master's, doctoral, and professional degree programs in a myriad of fields. Being close to the Mexican border, UNM boasts a diverse student population, with 30% of the student population being Hispanic and 5% being American Indian. Dis-

Table 1. Open-Ended Questions Sent to Instructors and Students

Instructor Questions	Student Questions		
What was the most beneficial component of the course?	What was the most beneficial component of the course?		
What was the most important concept you presented in this course?	What was the most important concept you learned in this course?		
How have you prepared students to approach work/school differently given what you have presented in this course?	How do you approach work/school differently given what you have learned in this course?		

tance education has been offered for decades, due to the vast size of the state, and online education continues to grow each semester. The majority of online courses are taught using WebCT Vista. UNM hosted this study.

The Universitat Oberta de Catalunya (UOC) is a fully online university located in Barcelona (Spain) with around 53,000 students. The mission of the university is to facilitate access and life-long learning to adult learners through asynchronous communication tools. The university's methodology is based in formative evaluation built in a unique and specific platform that includes teaching, research and management issues due to the fact is only driven to online learners. The university's principal aim is to ensure that each student satisfies his or her learning needs, gaining the maximum benefit from his or her own efforts.

The University of Peking (PKU) is a comprehensive and national key university. It is the first national university in modern Chinese history. PKU has over 30,000 students in 31 colleges and 14 departments, offering 101 undergraduate programs, 224 postgraduate programs, and 202 doctoral programs. The university values research as well as training students in specialized fields. PKU aims to become an international center for teaching and research in diverse areas of learning including pure and applied sciences, social sciences, humanities, sciences of management, and education.

DATA ANALYSIS

Upon receiving all surveys, they were separated according to country. A researcher from each of the respective universities read through the open-ended responses and used qualitative principles to develop a categorization and coding scheme using situation codes (Bogdan & Biklen, 2007). These categories were shared, modified, and reworded as needed. Researchers shared sample

responses from participants at all universities and coded them together. Once researchers created a set of categories, with common definitions and examples for each category, the researchers returned to the original list of open-ended responses and used the categories to code the responses. Researchers counted the number of statements in each category, and compared those counts to other universities. Actual responses from learners and instructors were matched to each category, and then translated to English to be used in this article. All conversations were conducted in English, as it was the only common language between all of the researchers.

PARTICIPANTS

Students and instructors participated from three universities: UNM in the United States, The Open University of Catalonia (Universitat Oberta de Catalunya, UOC) in Spain, and Peking University (PKU) in China.

Basic demographic questions were asked to better understand the characteristics of the participants. Courses were primarily taught at the bachelor's degree level (82.2%); however, all levels of education were represented. The participants at UNM were enrolled as education, nursing, and literature majors. Participants at UOC were primarily enrolled in psychology, psychopedagogy, and e-learning programs. Students from PKU were enrolled in an educational technology program, and some participants were also taking courses in contract law and Chinese language. Table 2 provides a visual representation of the number of instructors and students who responded to the openended questions at each university.

Despite similar methods of recruitment at all three universities, there was unequal representation in the results. However, the percentage of respondents corresponds to the size of the online program at each university. Because the response number var-

Table 2. Number of Instructors and Students Who Responded to Open-Ended Questions

University	Number of Instructors Who Responded	Number of Students Who Responded	
UNM	8	32	
UOC	73	211	
PKU	17	74	
Total	98	317	

ies between the universities, percentages are reported in the results.

RESULTS

Findings are reported for instructor and student responses and are organized to answer two closely related questions: How do students and instructors perceive knowledge acquisition in formal online courses? How do they perceive transfer of learning after such courses have ended?

KNOWLEDGE ACQUISITION

When instructors were asked to identify the most beneficial component of the course, their comments fell under two categories: application of course material and interaction in the classroom. For example, instructors at PKU said the most beneficial component was that they "create an atmosphere of learning together" and "learners can communicate with one another."

Of the instructors from UOC, 27% (20) said the most beneficial component was the application of course material and 24% (18) said it was interaction in the classroom. Instructors at UOC felt interaction in the online classroom was important for providing a space where students could share experiences and thoughts, as well as work together. Half (four) of the instructors who responded at UNM said the most beneficial component of the course was the individual work which provided students with an opportunity to better understand

the material. For example, one instructor said, "individual journals on topics and mindmaps were valuable tools to visually understand concepts." Similarly, 29% (five) of the instructors at PKU said learning activities and their subsequent feedback on the activities were most beneficial.

When students were asked what the most beneficial component of the course was, they shared several concepts—which fell into three broad categories: learning different content, social interaction in the online course, and personal evolution. One student said, "All components were beneficial and built upon prior skills/learning." Twenty-seven students mentioned the online tools were the most beneficial component—one student from UNM said on this topic: "I think the most beneficial aspect of the course was how it was put together, the class chats, the quizzes, how the tests worked ... everything seemed to be really cohesive in order to provide a great learning atmosphere."

Students at UOC said the most beneficial components were personal evolution (20%) and social interaction (20%). The category of personal evolution was comprised of comments on reflection, effort, self-criticism, adopting a more global view, and the metacognitive process. One student explained how the online interaction inspired personal evolution: "Group work; knowing how to organize oneself with other people who have a life pace different from my own." Comments coded as social interaction included promotion of working

in groups to share/display different views on the subject of the study, critical comparison of perceptions, and participation in debates and forums.

Students at UNM said the most beneficial components were learning content (17%) and interaction for educational purposes (17%). Learning activities (11%) and research (11%) were also frequently mentioned. Again, the students at PKU responded similarly to the students at UNM in that 44% of PKU students (34) said the most beneficial component was learning about the content of the course.

Five students had negative critiques, typically in regards to the amount of course content. One student at UNM said, "The class was designed very well although there was too much material for one semester," while a student at PKU requested additional opportunities for reflection during learning process: "The students should have chances to correct their homework after being checked by teachers." These responses were similar to comments mentioned by the instructors, particularly when comparing instructors and students from the same university. The greatest difference is that students emphasized interaction and students' personal evolution after the online learning experience more than the instructors.

When instructors were asked to identify the most important concept of their online course, their responses primarily fell into two categories: education and learning, and metacognitive skills and methods. A majority of comments referenced concepts related to the focus of the course being taught. There were also comments from all three universities regarding learning about research and teaching methods.

When students were asked about the most important component of the course, their responses lined up similarly to the instructors from the same university. The two most common categories overall were concepts related to psychology and education. Six students who responded to the

question said they learned so much that they could "not pick one."

Some categories did not have a high number of comments, but still provided insightful feedback. For example, 18 students said the most important concept was learning new information related to technologies. One student from UNM said: "The evolving dynamics of distance education and where it could be heading in the future was a very important concept I learned." Comments from 22 students fell under the category of learning skills. One student explained what he or she felt was most beneficial: "Discipline and responsibility, it was important to always stay on top of the reading assignments and quizzes for my benefit, which is how a career seems to grow." This comment indicates that the student was already thinking of how this student could use skills he or she had learned in the course in a different context. Similarly, 35 students felt the most important component was personal skill development. Another student from UNM said he or she learned, "That sometimes even when a subject does not move you personally you have to stick it out."

The students' responses fell in the exact categories cited by the instructors at the same university. Of students at UNM, 19% (six) said the most important concept was related to education, such as the application of distance learning, teaching across cultures, and/or the future of the educational world. Similarly, 70% (51) of students from PKU said the most important concept was related to education, with topics including teaching materials and principles and behavior assessment. At UOC, 29% (61) of the students reported the most important concept as being related to psychology. Although these are the same topics cited by the instructors at each university, a greater percentage of students listed noncontent specific concepts, such as learning skills, using new technologies, research, and personal skill development.

LEARNING TRANSFER

The final open-ended question asked instructors how they had prepared students to approach work/school differently given what they had presented in the online course. Of the instructors who responded to the survey, 93% (65) responded positively to this question. The most common method of transfer identified by the instructors was learning strategies; instructors felt that the learning strategies they presented—such as using critical thinking skills, multiple perspectives, and different tools and strategies to learn—would help students in future courses and life experiences.

Half (four) of the instructors at UNM said that they prepared students by providing learning strategies that students could apply in a variety of settings. One instructor described his or her approach with this comment: "It was a very interactive course ... [one] that requires a lot of active engagement and use of a variety of different tools and strategies to help them in applying these [tools and strategies] to their nursing education concentration and practice in teaching." A different instructor explained how she hoped she had prepared students: "I hope I have enabled them to be better critical thinkers, problem solvers and negotiators while understanding the sociocultural context in which they function."

Instruction of learning strategies was also the most common response from instructors at PKU. One instructor said he or she wanted students to "consider questions from different aspects," while another instructor explained it in a simple phrase: "To learn is to use." At UOC, 98% (50) of instructors at UOC answered positively that they believed they had prepared students to approach work and school differently based on what was presented in the online course. Unfortunately, the Spanish and Catalan question did not include the word "how," so very few instructors from Spain gave examples.

Nevertheless, one instructor explained how she had prepared students through her approach to teaching: "Yes, we have started it [transfer of learning] by promoting the practical side of the content."

Of students at all three universities, 94% responded that they felt they approached work and/or school differently given what they learned in the online course. A majority of the comments fell into the category of application of course material and personal enrichment. Different from the UOC instructors, more UOC students provided examples on how they approach work/school differently based on what they learned in the online course, although the word "how" was also not included in their survey.

The students' responses were similar across cultures. At UNM, 30% (nine) of students listed methods of application of the new material. For example, one student said, "I will apply what I have learned to every aspect of teaching. I can also apply it to how I approach learning." Thirteen percent described how application of what they had learned would enrich their lives in a more personal way, such as organizing time differently and being more openminded and thoughtful.

Similarly, 28% (78) of students at UOC listed ways in which the material assisted in their personal evolution, including through increased security and curiosity, being more optimistic, and having a greater capacity to overcome obstacles. Twenty-six percent (71) described methods of application of course material, including applying their new knowledge to real situations and examples. One student from UOC said, "This course helped me know how to search for new information if I need it, and to not make a wrong diagnosis." Although the course was taught online, the student was able to recognize how to apply the material on the job.

Finally, application of course material and personal enrichment were the most common responses for students at PKU, representing 47% and 37% of the responses, respectively. One student described how he or she will apply the new knowledge in a practical way: "I will improve my work efficiency with education and technology."

Several students' comments were not included in these categories, but were insightful all the same. One student from UNM described how her perspective of reality has changed due to the online experience: "I am more open to look deeper into e-learning and its potential for closing a gap between rich and poor. Though I am not 100% convinced, I am more open to explore based on taking this course." Another student explained how he or she has changed his or her approach to learning:

I'm more willing to review material over and over again until I understand a particular subject whereas before if I did poorly on a test I would just skip the material and try harder on the new information, but this class has taught me to stay focused and learn all that I can.

Eight students (representing all three universities) wrote that they will continue their academic career because of the positive experience they had in the online course. One student from UNM expressed the change he or she experienced:

This is one of the best courses I have ever taken. It has confirmed my interest in this subject and inspired me to apply to graduate school for further study in this area. I am grateful for Dr. X's obvious devotion to her students' learning.

Across the three universities only 6% of students said their approach to work/school had *not* changed much or at all and 1% of those said it has not changed *yet*. For example, one student from UOC said: "At the moment it has not changed because there has been no opportunity for practical application."

TRUSTWORTHINESS OF THE RESEARCH

Rigor in qualitative research can be determined by its level of trustworthiness. Lincoln and Guba (1985) established four criteria to determine the trustworthiness of qualitative research: credibility, transferability, dependability, and confirmability. Credibility was established through triangulating data both in terms of participants and methods. Open-ended and closedended input were gathered from instructors and their students at three different universities. Rich description of the processes used to conduct research between three universities was documented, thus establishing the potential for transfer of research outcomes to additional research settings. Although an external audit was not conducted, a steady audit trail has been maintained to confirm the research that we describe here actually took place. All instruments have been saved, data and coding files been securely stored, and e-mail correspondence has been logged.

Creswell and Miller (2000) discuss the importance of embedding validity during the planning and analysis of the research. In the spirit of research reflexivity, researchers acknowledged biases in the belief of distance education as an excellent learning opportunity and did their best to not allow opposing viewpoints to be lost in the analysis. Furthermore, the regular and in-depth discussions between researchers helped establish a meaningful coding schema to be used across data from different universities.

IMPLICATIONS

An important implication of these findings is represented in the similarities within and between cultures. Students and instructors within each culture responded similarly to questions, particularly when asked to identify the most important concept of the online course. Despite being from three different cultures (with substantial differences in Hofstede and Hofst-

ede's [2005] cultural dimensions), there were similarities between groups of students and instructors. For example, instructors across cultures felt that application of material was the most beneficial component of the course, whereas the students felt the content was most beneficial. In fact, students rarely referenced application of material when asked about the most beneficial component of the online course.

An interesting difference between the instructors and learners was that instructors tended to refer directly to the course and learning objectives, whereas students were more likely to include comments outside the realm of formal education. For example, students referred to personal skill development, social interaction, and personal evolution as they responded to questions about the most important and beneficial concept of the course. This is interesting, as there is minimal substantive research to support the impact of social interaction on the distance learning experience (Annand, 2011).

However, the most important implication of this study is found in the power of online education courses. As the discussion continues on the quality of distance education programs (Hope, 2005), it is encouraging to read the words written by instructors and students, describing the impact of the content and delivery of distance education on their academic, personal, and professional lives. Valuable quotes such as, "I learned to hear different perspectives and value them without thinking they are more or less (nor superior or inferior) to my opinions and knowlallow us as researchers understand the power of online learning.

LIMITATIONS

This article is one piece of a larger study. The data were so dense that it was determined the quantitative and qualitative sections needed to be analyzed separately, so

as to not overlook essential information. The limitation of describing only this section of the analysis is that the reader may not understand the larger research picture. However, the aim of this article was to report the qualitative results. Barbera and Linder-VanBerschot (2011) provide a detailed analysis of the statistically significant differences found in the quantitative data.

The students and instructors who participated in this research study were located in three countries, representing three cultures. However, this also created challenges. For example, the *how* was dropped from the open-ended question sent to instructors at UOC. While we are confident in the translation of material, we understand the complexities of language and culture, and recognize that translations cannot possibly capture the entire meaning of the original statement. This posits a limitation that we are willing to accept so that we can provide an international set of results.

The final limitation is the difference of response rates between universities. Despite using the same recruiting strategies, there were not equal numbers of students and instructors at the three universities. This caused unequal representation in the data. However, findings were reported for instructors and students at each university, in order to highlight the differences. Most importantly, the percentage of respondents at each university was representative of the percentage of students taking online classes at the respective university.

SUGGESTIONS FOR FUTURE RESEARCH

Friesen (2009) suggests that different types of research have different purposes, pose different questions, and thus yield vastly different contributions. We agree and therefore recommend further research on student and instructor perceptions of

knowledge acquisition in formal online courses, as well as their perceptions of transfer of learning. Because the methods for this study were outlined with great detail, we propose that it is repeated in additional international settings and including K-12 and university students in formal/informal online environments.

However, additional approaches might be used to answer similar research questions. Student and instructor interviews would provide rich descriptions of the online learning experience. Furthermore, an extended observation of the online classroom would provide additional data from which to respond to research questions. Higher-level quantitative analyses would allow for claims of correlation and causation.

Any one of the central findings could be further investigated. Potential questions to be explored include:

- To what extent do learners choose to continue their education in an online setting? If given the choice of face-toface classrooms or online classrooms, what do they prefer and why?
- To what extent does the introduction of social media impact learner and instructor perceptions of knowledge acquisition and transfer in online learning?
- What are the cultural factors within each country that impact the extent to which learners can acquire and transfer their learning?
- How do instructors (and researchers) know that learners truly understand the content and can apply the material outside of the classroom?

Furthermore, the limitations of this study provide potential for future research. Minimal research is available on the process of conducting international research. We must continue to develop an international research agenda to guide this continuously evolving field (LaPointe & Linder-VanBerschot, 2012). A longitudinal

study would be interesting to capture the evolution of online learners as they gain experience and confidence in a formal online learning environment.

CONCLUSION

Overall, students and instructors from each university tended to respond similarly to the questions. Instructors felt the most beneficial component of the online course was that students were given the opportunity to apply information taught. Students, on the other hand, reported valuing the content they learned in the course and did not mention application as frequently. Students and instructors alike felt the most important concept in the course was education and learning. This finding echoes the quantitative data with students averaging 3.17 out of 4 that they agree their knowledge had increased because of the online course, and instructors averaging 3.13 out of 4 that their knowledge students' had increased because of the course (Barbera & Linder-VanBerschot, 2011).

Students and instructors overwhelmingly reported believing students will approach work and school differently based on what they learned in the online course. One student from PKU said, "I will improve my work efficiency with education technology," while another student from UNM said, "I will apply what I have learned to every aspect of teaching. I can also apply it to how I approach learning." These findings echo the quantitative data, with students and instructors averaging 3.14 out of 4 in agreement that they were able to transfer their knowledge, and instructors averaging 3.17 out of 4 in agreement that they felt their students would be able to transfer their knowledge (Barbera & Linder-VanBerschot, 2011).

Through reviewing the qualitative comments of students and instructors, we were able to hear about their perceptions of knowledge acquisition and transfer of learning in their words. We recommend

sharing this survey, with both open- and closed-ended questions, with universities that serve students speaking other languages and representing different cultures. This would allow further comparison of research across cultures to determine patterns in learner satisfaction, knowledge acquisition, and transfer of learning in online learning environments.

Acknowledgment: The authors would like to acknowledge the extensive work of Deborah K. LaPointe (1952-2009). She led this study and organized a lasting partnership between UNM and UOC.

REFERENCES

- Agius, B. (2003). Students' readiness for online learning: A case study from the faculty of education, University Of Malta [Electronic Version]. *Journal of Maltese Education Research*, 2.
- Annand, D. (2011). Social presence within the community of inquiry framework. *International Review of Research in Open and Distance Learning*, 12(5). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/924/1855
- Aubteen Darabi, A., Sikorski, E., & Harvey, R. B. (2006). Validated competencies for distance teaching. *Distance Education*, 27(1), 105-122.
- Barbera, E., & Linder-VanBerschot, J. A. (2011). Systemic multicultural model for online education: Tracing connections among learner inputs, instructional processes and outcomes. *Quarterly Review of Distance Education*, 12(3), 167-180.
- Bogdan, R. C., & Biklen, S. K. (2007). *Qualitative* research for education: An introduction to theories and methods (5th ed.). Boston, MA: Pearson.
- Burke, L. A., & H. M. Hutchins. 2007. Training transfer: An integrative literature review. Human Resource Development Review, 6(3), 263-296.
- Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice*, 39(3), 124-130.
- Demiray, U. (Ed.). (2010). Cases on challenges facing e-learning and national development: Institu-

- tional studies and practices. Eskisehir, Turkey: Anadolu University.
- Eastmond, D. (1995). *Alone but together: Adult distance study through computer conferencing*. Cresskill, NJ: Hampton Press.
- Ess, C., & Sudweeks, F. (2005). Culture and computer-mediated communication: Toward new understandings. *Journal of Computer-Mediated Communication*, 11(1), 179-191.
- Friesen, N. (2009). *Re-thinking e-learning research: Foundations, methods, and practices* (Vol. 333). New York, NY: Peter Lang.
- Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence and computer conferencing in distance education. *American Journal of Distance Education*. 15(1) 7-23.
- Gunawardena, C. N., Linder-VanBerschot, J. A., LaPointe, D. K., & Rao, L. (2010). Predictors of learner satisfaction and transfer of learning in a corporate online education program. *The American Journal of Distance Education*, 24(4), 207-226.
- Hewling, A. (2005). Culture in the online class: Using message analysis to look beyond nationality-based frames of reference *Journal of Computer-Mediated Communication*, 11(1), 337-356.
- Hofstede, G. (1983). The cultural relativity of organizational practices and theories. *Journal of International Business Studies*, 14, 75-89. Retrieved July 21, 2006 from http://www.mty.itesm.mx/etie/centros/cia/comp_org/archivos/Cultural_relativity.pdf
- Hofstede, G., & Hofstede, G. J. (2005). *Cultures* and organizations: Software of the mind (2nd ed.). New York, NY: McGraw Hill.
- Hope, A. (2005). Quality, accreditation, and recognition: Issues in the delivery of transnational education. In Y. L. Visser, L. Visser, M. Simonson, & R. Amirault (Eds.), Trends and issues in distance education: International perspectives (pp. 23-34). Greenwich, CT: Information Age.
- Ke, F. (2004). Forming virtual learning community within online course: Students' perspectives. Paper presented at the Association for Educational Communications and Technology. Retrieved from http://www.eric.ed.gov/ ERICDocs/data/ericdocs2sql/content _storage_01/0000019b/80/1b/a6/bb.pdf
- Lapadat, J. C. (2007). Discourse devices used to establish community, increase coherence,

- and negotiate agreement in an online university course. *Journal of Distance Education*, 21(3), 59-92.
- LaPointe, D. K., & Linder-VanBerschot, J. A. 2012). International research: Responding to global needs. In Y. L. Visser, L. Visser, M. Simonson, & R. Amirault (Eds.), Trends and issues in distance education: International perspectives (2nd ed., pp. 5-22). Charlotte, NC: Information Age.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: SAGE.
- Lobato, J. 2008. Research methods for alternative approaches to transfer: Implications for design experiments. In A. Kelly, R. A. Lesh, & J. Y. Baek (Eds.), *Handbook of design research methods in education* (pp. 167-194). New York, NY: Routledge.
- Mason, R. (2006). The university: Current challenges and opportunities. In S. D'Antoni (Ed.), *The virtual university: Models and messages* (pp. 49-69). Paris, France: UNESCO.
- Mayer, R. E. (2002). Rote versus meaningful learning. *Theory into Practice*, 41(4), 226-232.
- Palloff, R., & Pratt, K. (2009). Assessing the online learner. San Francisco, CA: Jossey Bass.
- Parrish, P., & Linder-VanBerschot, J. A. (2010). Cultural dimensions of learning: Addressing the challenges of multicultural instruction. International Review of Research in Open and Distance Learning, 11(2), 1-19.
- Shive, G., & Jegede, O. (2001). Introduction: Trends and issues in open and distance edu-

- cation in Asia and the Pacific. In O. Jegede & G. Shive (Eds.), *Open and distance education in the Asia Pacific region* (pp. 1-24). Hong Kong, China: Open University of Hong Kong Press.
- Smith, R. (2008). *Conquering the content*. San Francisco, CA: Jossey Bass.
- Tallent-Runnels, M. K., Thomas, J. A., Lan, W. Y., Cooper, S., Ahern, T. C., Shaw, S. M., &, et al. (2006). Teaching courses online: A review of the research. *Review of Educational Research*, 76(1), 93-135.
- Uzuner, S. (2009). Questions of culture in distance learning: A research review [Electronic version]. *International Review of Research in Open and Distance Learning*, 10. Retrieved from http://www.irrodl.org/index.php/irrodl/article/viewFile/690/1305
- Visser, J. (2003). Distance education in the perspective of global issues and concerns. In M. G. Moore & W. G. Anderson (Eds.) *Handbook of distance education* (pp. 793-810). Mahwah, NJ: Erlbaum.
- Wright, C. R., Dhanarajan, G., & Reju, S. A. (2009). Recurring issues encountered by distance educators in developing and emerging nations [Electronic version]. *International Review of Research in Open and Distance Learning*, 10. Retrieved from http://www.irrodl.org/index.php/irrodl/article/viewFile/608/1181





VISUAL COMMUNICATION

Flexible, easy-to-use visual communication solutions help bring learning to life. Learn what grant options are available for your distance learning program.

Request your FREE customized funding analysis — contact grantservices@tandberg.com

www.tandberg.com

TANDBERG
See: passion

The Shift of Online Learning Into Secondary Schools

Joseph A. Rapposelli

INTRODUCTION

ver the past decade, online and distance learning programs have become a popular method of learning within the curriculum of higher education. Many major colleges and universities now offer students some type of online or "blended" form of learning option. Tansky (2007) refers to a study by the International Data Corporation that found over 87% of four-year colleges offered distance-learning courses in 2009, up from 62% in 2003.



Joseph A. Rapposelli,
Distance Learning Coordinator, Red Clay
Consolidated School District, 201 Jackson
Avenue, Wilmington, DE 19804.
Telephone: (302) 992-5545.
E-mail: Joseph.rapposelli@redclay.k12.de.us

However, many secondary schools are beginning to embrace the idea of distance learning possibilities for their students. Honwar (2005) noted a National Center for Education Statistics survey conducted in the 2002-2003 school year that found thousands of students were enrolled in courses conducted via the Internet or through video-audio-conferencing, teacher and student in separate places. Nearly 1 of every 10 public schools in the country had students enrolled in such courses (as cited in Honawar, 2005). Resmovits (2011) cites a similar survey conducted by the U.S. Department of Education in the fall and winter of the 2010-2011 school year found that 55% of 2,310 school districts had students enrolled in some form of distance learning courses, 96% of which were given at the high school level. Resmovits further notes a study by the National Center for Education Statistics, online courses had approximately 1.8 million self-reported enrollments, more than three times the amount reported in the 2004-2005 school year (Resmovits, 2011).

CASE STUDY

The Red Clay Consolidated School District in Delaware is a secondary school system that has recently developed and implemented a distance learning program offered to high school students. Beginning in 2011, the district selected two schools that would offer classes to students at the other school via live video broadcast using state of the art technology. Each distance learning lab was equipped with the following technologies:

- two 72 inch flat-screen monitors in the front of the lab;
- front and rear high definition video camera (for broadcast mode);
- three-tiered student seating with 24 ergonomically correct swivel chairs and student work space;
- high quality microphones placed throughout student work area;
- twenty-four laptops with wireless internet connection;
- Smart Board technologies;
- document scanner/camera and image capture tools; and
- teacher podium with touchpad controls for all equipment.

Course selection and offerings for this program were based on the lack of availability at the partnering school. For example, teachers at the Conrad School of Technology broadcasted Science and courses to students located at Alexis I. du Pont High School (AIHS) that included: world history AP, sociology, and comparative government AP. Alexis I. du Pont High school teachers offered classes to Conrad students that included: statistics AP, legal process, military history, and accounting. Through the use of Blackboard's Edline Course Management System platform, teachers were easily able to collaborate

with all students and provide students with 24/7 access to all course materials.

BENEFITS TO STUDENTS

Participating students benefit from this program on several levels. Primarily, this program allows students the opportunity to enroll and complete courses that were not previously available to them. Many of the distance learning courses in this program are Advanced Placement (AP) classes that grant students college credit upon successfully completion of an examination. By taking advantage of these opportunities, students can get a head-start on their college requirements which have potential for financial savings to college-bound seniors. The Advanced Placement courses require students to successfully complete a final exam at the end of the course. The grading scale is from 1-5. Colleges and universities may accept scores beginning at level three. The results from the students that completed the AP exams for these courses are presented in Table 1.

Another opportunity for students in this program is through an agreement with Delaware Technical and Community College. Students may receive college credit for the successful completion of the Sociology course. Of the students enrolled in the 2011 Sociology course, more than 88% of the students received college credit. Furthermore, the format of these classes prepares students for the learning

 Table 1. AP Exam Final Scores 2011-2012 (Distance Learning)

	Score					
_	5	4	3	2	1	Total
World history	0	3	11	3	0	17
Compare Government	1	2	5	2	2	12
Statistics	0	2	3	3	9	17
Total	1	7	19	8	11	46
Percent	2.2	15.2	41.3	17.4	23.9	100.0%

communities they will experience in a higher education environment. The collaboration tools used in this program to enhance student engagement are the same tools used by many colleges and universities. The use of a learning management system has become a staple in the curriculum and learning methods in higher education.

Barbara Prillaman has taught the Sociology course in this distance learning format since the start of the program and has been instrumental in its implementation. "Distance learning is extremely beneficial for our high school students. It provides them with multiple opportunities to have a 'college' experience while still in a high school setting. Students practice with, use, and perfect the exact tools now that they will need later on a college campus" says Prillaman.

Tami Soltow teaches the Legal Process class of the program. She has incorporated many of the available technology tools and features into the learning strategies of her classes. "Students truly get a realistic approach into the communication and collaboration tools currently being used in the business community. In our classes, we have conducted mock trials using video conferencing and utilized the technology to conduct legal research projects" says Soltow. "I was also able to use a variety of teaching methods with the class such as gchat and googledocs, thus showing the students how invaluable this type of program is and how many of their future college courses will be structured."

STUDENT FEEDBACK

Throughout the school year, students provided formative feedback to teachers regarding the program. Students became very creative in using various Web 2.0 tools in their feedback methods that included videos, blogs, and presentations. Listed below are some of the students' direct

responses submitted as feedback of this program:

- "Many of the students see the Distance Learning program as more than a text book and classroom; it becomes a community of 21st century learners."
- "Taking this class has better prepared me to enter the college campus next year."
- "We are able to use technology that we don't have available in other classrooms."
- "Assignments can be submitted to the teacher without handing in a hard copy of the assignment."
- "Students can work with other students at another location and communicate with them in real-time."

During the first year, approximately 114 students (10th-12th grade) participated in this program. Of the total students enrolled in the program, 47 students (41%) received the broadcast from the partnering school (the remaining students attended the class with the teacher). For the start of the second year (2012), there are 150 students enrolled. The distribution of students is similar to that of the first year (see Table 2).

OUTLOOK

The future looks promising for the distance learning program in the Red Clay Consolidated School district in Wilmington Delaware. School administrators at both schools received positive feedback from students completing the newly formatted classes. With an enrollment increase of approximately 30% in the second year of the program, Red Clay Consolidated School district plans to expand the program to include at least two other schools in the district and offer additional courses for the 2013-2014 school year.

Table 2. Student Enrollment Distribution

2011-2012				
Students	AIHS	Conrad	Total	%
Broadcast from AIHS	31	34	65	57.0%
Broadcast from Conrad	13	36	49	43.0%
School total	44	70	114	
School percentage	38.6	61.4		

2012-2013

Students	AIHS	Conrad	Total	%
Broadcast from AIHS	54	31	85	56.7%
Broadcast from Conrad	10	55	65	43.3%
School total	64	86	150	
School percentage	42.7	57.3		

REFERENCES

Tansky, T. J. (2007). Jewish adult education goes online. Retrieved from http://lubavitch.com/ news/article/2020974/Chabad-Conference-Initiatives-Jewish-Adult-Education-Goes-Online.htm

Honawar, V. (2005). Education Department tracks growth in distance learning. *Education Week*, 24(26), 6.

Resmovits, J. (2011, November 30). Digital learning enrollment triples: U.S. Department of Education. Retrieved from http://www.huffingtonpost.com/2011/11/30/digital-learning-triples-department-of-education_n_1121269.html?ref=education

MOOCs

What Are They? Plus 20 Questions We Should Be Asking About Them

Natalie B. Milman

INTRODUCTION

assive Open Online Courses (MOOCs) are noncredit bearing courses being offered for free by numerous universities and organizations to anyone interested in enrolling in these courses. Distinct features of MOOCs



Natalie B. Milman,
Associate Professor of Educational
Technology, The George Washington
University, 2134 G ST, NW,
Washington, DC 20052.
Telephone: (202) 994-1884.
E-mail: nmilman@gwu.edu

are that they are designed for "massive" participation—thousands, even hundreds of thousands can participate in a MOOC and students do not need to be enrolled in or even affiliated with the sponsoring organization offering the MOOC to register. Some MOOCs offer certificates upon successful course completion for a fee, whereas others do not. Often MOOCs are taught in face-to-face settings (F2F) as credit-bearing courses at an institution with students enrolled in degree programs. The F2F lectures are then recorded and disseminated online to the MOOC students. These lectures typically involve a professor offering a weekly lecture, offered for a varying number of weeks depending on the course, accompanied by a multimedia presentation with visuals and questioning from students in the audience (the F2F, paving students). The lectures recorded and made available by a MOOC provider. Therefore, in a MOOC, it is not unusual to find students who have paid to take a course for credit and in a degree program studying parallel (with no interaction at all) or alongside (with some interaction, for instance in online discussions) students enrolled for free. However, many MOOCs are designed only as a MOOC

and not also as a F2F course. Currently there are no standards as to how MOOCs are offered; it is unclear if there ever will be.

WHO IS OFFERING MOOCS?

MOOCs are being offered by organizations such as Coursera (https://www.coursera.org/), edX(https://www.edx.org/), and Udacity (http://www.udacity.com/). These organizations consist of consortia of different universities who support the provider in some way. However, in the future, it will not be surprising if corporate and government organizations consider offering their own MOOCs, too, for many of the same reasons universities are exploring the possibilities of MOOCs.

Interest and enrollments in MOOCs are quite high (e.g., over 100,000 students enrolled in a MOOC offered at Stanford University) and will likely grow; however, persistence in MOOCs is quite low (Rosen, 2012), with small percentages of the nonpaying students actually completing courses. It is too soon to tell why and whether this will continue to be the case with MOOCs.

QUESTIONS WE SHOULD BE ASKING ABOUT MOOCS

Clearly, MOOCs are exploring new territory. There are many forecasts about the implications of MOOCs for higher education, including that they will turn higher education as we know it upside down. One big question is whether they will revolutionize higher education (Webley, 2012). However, it is too soon to know what the implications will be. It seems that even if MOOCs result in some changes in higher education, in the short term, it appears to be a positive development for those interested in furthering their knowledge and skills without having to apply for a program or pay for it. Consequently, it seems a good fit for those who do not need traditional credentials to move up career-wise, but want to learn something new or establish their knowledge further in an area in which they are already knowledgeable. Of the three major MOOC providers listed in this article, Udacity is the only one that has a system in place for sharing résumés with potential employers. As MOOCs gain interest, this may become a common feature of all MOOC providers.

Given MOOCs are still in a nascent stage, there are many questions we should be asking—and researching, such as:

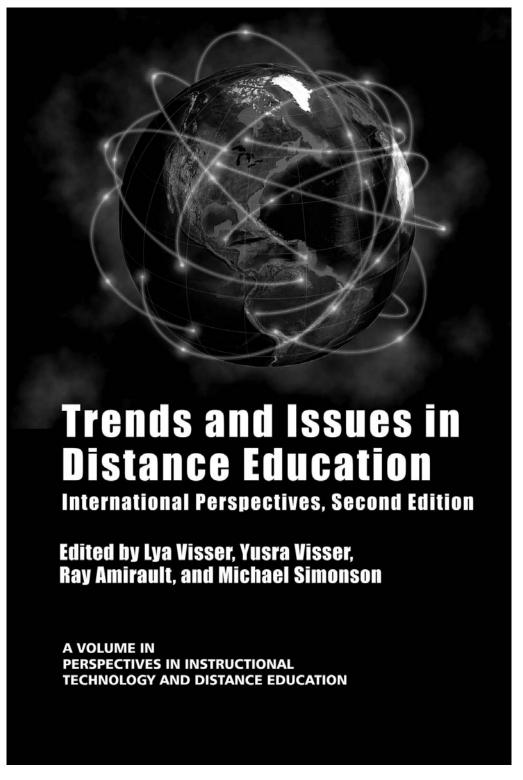
- 1. Who are MOOC students?
- 2. Why do these students enroll in these courses?
- 3. What are persistence rates for MOOC students?
- 4. What skills and knowledge are needed to be successful in a MOOC?
- 5. Who are the facilitators?
- 6. What kind of training do these facilitators or tutors receive?
- 7. What are the characteristics of effective facilitators or tutors?
- 8. Who is paying for MOOCs (their instructors, platform, facilitators, and tutors)?
- 9. How much do MOOCs really cost?
- 10. What is the return on investment for institutions providing MOOCs?
- 11. For MOOCs offering certificates, how will these be received by employers?
- 12. What are the major differences and similarities between MOOCs and traditional, credit-bearing online courses offered in degree and certificate programs?
- 13. How do MOOC students perform compared to traditional students enrolled in the same courses?
- 14. When is a MOOC too big?
- 15. What incentives are there for instructors to teach MOOCs?
- 16. Do MOOCs take more time/effort for instructors to teach and students to learn?

- 17. Are MOOCs effective for all types of learners?
- 18. How do instructors ensure quality learning experiences in MOOCs with multiple facilitators and thousands of students?
- 19. What type of content is best taught in a MOOC?
- 20. What are the benefits and challenges of MOOCs?

REFERENCES

- Rosen, R. J. (2012, July 12). Overblown-claims-of-failure watch: How not to gauge the success of online courses. *The Atlantic*. Retrieved from http://www.theatlantic.com/technology/archive/2012/07/overblown-claims-of-failure-watch-how-not-to-gauge-the-success-of-online-courses/260159/
- Webley, K. (2012, September 4). MOOC brigade: Will massive, open online courses revolutionize higher education? *Time*. Retrieved from http://nation.time.com/2012/09/04/mooc-brigade-will-massive-open-online-courses-revolutionize-higher-education/

DISTINCT FEATURES OF MOOCS ARE THAT THEY ARE DESIGNED FOR MASSIVE PARTICIPATION AND STUDENTS DO NOT NEED TO BE ENROLLED IN OR EVEN AFFILIATED WITH THE SPONSORING ORGANIZING OFFERING THE MOOC.



Get Your Copy Today—Information Age Publishing

Creating and Using an Online Rubric for Maximum Effectiveness

Errol Craig Sull

h, the rubric: so often used in the college classroom, so often misunderstood, so many times maligned. Yet it remains an extremely effective assessment tool in presenting students with a detailed breakdown of why they

Errol Craig Sull,
Online Instructor,
P.O. Box 956, Buffalo, NY 14207.
Telephone: (716) 871-1900.
E-mail: erroldistancelearning@gmail.com

earned their grade and how it can be improved. And the rubric is used in a large number of distance learning courses, often simply brought over from their face-to-face course counterparts. Yet using the rubric in an online classroom is different, for the online classroom has its own needs and considerations in making this unique learning environment one of maximum effectiveness to the students.

Doing this comes in knowing how to create and how to use an online rubric. Here's how:

CREATING AN ONLINE RUBIC FOR MAXIMUM EFFECTIVENESS

A RUBRIC MUST ALWAYS BE DEVELOPED WITH COURSE OUTCOMES AND THE ONLINE STUDENT IN MIND

A rubric can never be tossed together willy-nilly, but rather it must be crafted based on course outcomes and the online student. Thus, rather than being merely a scoring sheet one is reading as if a golf or bowling scorecard, it must be developed with helping the student to stay engaged and to look forward to reading the

rubric—no matter what the grade. Added to this must be a direct tie-in to course outcomes (and perhaps general outcomes dictated by your school). Too often online educators forget the differences between online and face-to-face students in their classroom environments, and thus a rubric that may work well in the physical classroom will not have maximum effect in the online one. The more of our online student profile (and course outcomes) we incorporate into the rubric the better will be that rubric.

INCORPORATE ALL ASPECTS OF YOUR ASSIGNMENT INTO THE RUBRIC

Students are given assignments with various components, and if we leave any out of the rubric it gives the impression those components really didn't amount to much. Including these items in the rubric can be done in specific language (i.e., writing out the components as they appear in the assignment) or in general/holistic language. There is a bonus to this: students are reminded that all parts of an assignment are important, and thus their focus for detail can be improved. Also, be sure the rubric only evaluates measurable criteria; that a student really tried hard, was interested in the subject, or studied for many hours are examples of items that cannot be quantifiably or qualitatively measured, and thus have no place in a rubric.

INCORPORATE ALL ASPECTS OF YOUR STANDARDS INTO THE RUBRIC

Beyond the specifics of what makes up each assignment—such as, is there a properly constructed thesis statement? (English) ... has the correct formula been used in solving the equation? (Math) ... are all topographical features of a volcano included? (Geography)—our standard for what equates to excellent, good, fair, et cetera must be included. This serves two

purposes: it identifies the differences of one grade over another and it gives the student a clearer understanding of where more effort might be needed.

CHOOSE CAREFULLY THE VOCABULARY INCORPORATED INTO THE RUBRIC

Terms should be variants of achievement that are short, such as excellent, good, satisfactory, and needs improvement; students need to immediately determine under which category they have received grades. If wording is too long or jumbled it will only result in students asking the instructor for clarification and/or allow for gray areas in a final grade evaluation (never good). [Note: A numeric scale may be used, such as 1, 2, 3, et cetera, but each number must also have a definition of its value.] Also, pay attention to all other vocabulary and phrase or sentence structure throughout the rubric, as it should be easy to understand and not long. A rubric is never a substitute for the great American novel!

ALWAYS GIVE AN EXPLANATORY BREAKDOWN OF POINTS

Students use a rubric for three purposes: to determine their overall grade for an assignment, to see the grade breakdown of the assignment, and to understand where improvement is needed. This last area dictates language in each square of each item in the rubric be specific to what resulted in the corresponding grade. It is here where a combination of the assignment expectations and your standards will mesh. Again, be sure this is written in short sentences or phrases that easily and quickly can be understood.

BE SURE TO INCORPORATE COLOR, BOLD, ETC., BUT DON'T OVERDO IT

The online class is all about engaging the students—this is crucial when there

are no physical walls of a classroom to lock in a student and no physical presence of an instructor. Thus, every aspect of the distance learning classroom needs attention to any detail that can maintain, even improve, student engagement. And so the rubric must be presented in a visual manner that is appealing, that asks for attention. By using color, as well as some bold, underlining, and highlighting (but not italics: this can make some writing difficult to read), students can view the rubric as friendly and helpful, with various headings and/or important notations made to stand out for easier or "most important" reading. A black-and-white rubric with no variation of text used in the online classroom can quickly be passed over or skimmed over by the student, thus turning into wasted effort by the instructor. But be careful: too many or too much of color, bold, and/or highlighting can make a rubric difficult to read—a balance must be struck.

MAKE SURE THE LAYOUT IS EASY TO READ

When a student comes upon a rubric its layout should make it a quick and inviting info bulletin; immediately, each rubric category, its weight, and descriptive text should not warrant any further explanation or cause any puzzlement as to what belongs to what. Also, a rubric should be rather short, with a limit of 4 to 10 items (under 4 items and the rubric begins to take on more of a "feel good" descriptor; more than 10 can intimidate or lose the reader) and no more than a page in length. Also, each item listed in the rubric should focus on only one skill or learning outcome; again, this makes the info quick and easy to digest. Finally, the overall template of the rubric should remain the same for each assignment in the course—changing this around for various assignments only adds confusion and extra time for the student.

CONNECT EACH SCORE TO PERFORMANCE IN THE WORKPLACE

An underutilized yet very important part of a rubric is to transition its information beyond the online classroom, thus having a "How This Applies to Work"-type of category takes the rubric into third dimension territory. Here, several words or a few phrases/sentences can tie in each skill to its use and importance in the professional world. This will take the rubric from simply being used as a grading tool to a reminder of how information taught in the online class is useful in work—where students will be far longer than in school. (Note: Depending on the course taught, the "real world" connecting info can be specific to a profession or generic for most work situations.)

USING AN ONLINE RUBRIC FOR MAXIMUM EFFECTIVENESS

POST AN EXAMPLE OF YOUR RUBRIC FOR DAY ONE OF CLASS

The first day of a course for an online student (and this can often be prior to the course beginning) is one of discovery getting to know the layout of the course delivery system (Blackboard, eCollege, et al.) and the placement of course materials, as well as rules and regs posted by the instructor. Here, too, the student should be introduced to the rubric; post an example in a prominent location so students have a chance to study it, to understand how it will be used. This would be the time for any questions they might have regarding the rubric; you want students fully prepared for the rubric's debut in their first assignment.

EXPLAIN TO STUDENTS THE WHY AND HOW OF USING A RUBRIC

Along with an example of the rubric must also be a short explanation as to why

a rubric is used and how it can be helpful to the student, in the classroom and in the professional world. There might be students who have not experienced rubrics, and for the first time certainly most (if not all) students in your class will be experiencing your layout of the rubric. This explanation can also minimize questions students might have without it, thus saving you time.

ALWAYS HAVE YOUR RUBRIC APPEAR AT THE SAME LOCATION FOR EACH ASSIGNMENT

Students like familiarity in the online course, especially students new to distance learning; anything that moves along this comfort is a help to not only the student but the instructor, for it cuts down on student questions and minimizes stress and frustration. Merely having your rubric appear at the same location each time a student assignment is returned—such as at the end of the assignment—tells students, "Hey, I'm your good ol' rubric, living in the same place, with not only your grade but details on how you earned it!" It's reassuring to know where the rubric can always be found.

Consider Giving Comments That Personalize the Grading of Each Section

The rubric is designed with language that is used for all students in a class; structuring individual comments per student in each rubric would take an extensive amount of time. Yet instances will occur where it is important to add an additional note to a rubric item; this not only personalizes the rubric but also goes to greater length in helping the student to improve or to increasing a student's confidence

because of something especially good done by him or her in the assignment. Be sure these comments are in bold, underlined, or highlighted so they stand out from the usual verbiage in the rubric.

INCLUDE A SUMMARY COMMENT THAT ALWAYS ENDS WITH A POSITIVE OBSERVATION

The rubric does a great job in breaking down the why of a grade, but the overall comment gives the instructor's general thoughts on the student's efforts. This, again, personalizes the rubric (such a big help in cementing a strong student-instructor bond), and the student receives some general feedback from one who is an expert in the subject. And always ending with a positive sentence or two motivates the student into doing better, especially if the grade is not the greatest.

HONE, SAND, AND POLISH YOUR RUBRICS AS COURSE EXPERIENCE DICTATES

A re-evaluation of the rubric should be done prior to each new course, as requirements of the course can change, observations of previous students' efforts may determine more emphasis of one area than another, and/or unexpected student confusion over some language in the rubric or part of the rubric's layout may warrant some tweaking. This should always be done under the umbrella of the course outcomes, so the rubric is always in sync with these.

Remember: Billboards and résumés present a summation of information in nuggets; yet careful thought, layout, and language must be the foundation of each if it is to be effective.

Ask Errol!

Errol Craig Sull

he questions continue, as they should; distance learning is not only exponentially growing but also changing. New technology, teaching strategies, school regulations, and problems come at a rapid pace—and with more online courses being offered and a greater number of online instructors this translates into thises and thats of what to do, how to do, and why to do. And that's why I'm here: using my 19 years of distance learning experience and the input from many



Errol Craig Sull,
Online Instructor,
P.O. Box 956, Buffalo, NY 14207.
Telephone: (716) 871-1900.
E-mail: erroldistancelearning@gmail.com

distance learning colleagues around the world to help untangle each question as it comes across my computer. So do write (errroldistancelearning@gmail.com), and I'll try to help you.

Here is an interesting mix for this edition's column:

So, what's the deal with the rubric? Suddenly, my department chair has insisted that we develop and use a rubric for all assignments in our class (I teach education). Things were working well before—I read over a student's work, put in comments, and gave an overall summary with a grade. It seemed to work well. Can you tell me if there is any advantage to using a rubric?

How timely is your question, as you'll find my other column in this issue— "Try This"—focused on the rubric for the distance learning instructor! Read it to get the ins and outs of how to create and use an online rubric that will serve well you and your students. As for your question, it is a common one, and more schools with online courses are using rubrics to help meet accreditation standards; the rubric quantifies the details of a student's grade. Also, it cuts down on students challenging their grades, to the instructor or the school, as it offers a breakdown of each component of the assignment and the how and why of a student's effectiveness in responding to each component.

Yes, it can seem much easier to jot down a summary with a grade, but the more you use a rubric the more you'll come to understand its value in the online classroom. One item that is especially improved through the use of a rubric is student motivation to do all the readings and implement all instructor's previous assignment comments: knowing each part of an assignment, the value of each, and what is expected of each to receive a good grade can immediately let a student know, "Hey —you did not do all the readings this week!" or "It seems you did not pay attention to my previous comments." Try it out—I think you'll like it!

A family member is going into the hospital at the beginning of next year for a major operation, and I need take time off from my online teaching responsibilities to help her out. Although I will be traveling out of town and will have an Internet connection I know I will not have the proper amount of time to effectively teach my classes. At the earliest, I would be able to resume teaching duties next summer or fall. My question: how best should I handle this with my school to assure I have a teaching spot when I can return?

Your e-mail did not give any indication as to how long you have been teaching at the school or if your evaluations have been good (I'm presuming they have been!), but the first item you must do is let your direct departmental chair or supervisor know of your circumstances. The earlier you break this news the more it appears you are thinking ahead, not wanting to hit the school with a last-minute announcement. Additionally, in your correspondence with this person—and I'd do it by phone so there is more of a personal connection and so your tone of voice (sincerity and interest in teaching) can be heard—emphasize how much you enjoy teaching for your school and that you are eager to return. And if this is a one-time situation, as you seem to indicate, mention that as well so

there is no concern about needing to again find a replacement shortly after you return.

Meanwhile, be sure to teach your remaining classes at your best level—and then some. You want student evaluations and any faculty evaluation to be the best possible; this gives an indication of your value as a teaching asset to the school. Finally, while you are on this necessary sabbatical stay in touch on a fairly regular basis with your chair or supervisor: in the online classroom voice, e-mail, and texting are all you have (when you are not in the same city as where the school is based), and silence can easily equate into your presence becoming a thing of the past—something you obviously do not want.

Just when everything seems to be going quite smoothly in my class I find there is a student who likes to challenge me, no matter what I post to the class, in discussion, or on his assignments. He comes across as a "Mr. Know It All," and has stated—on several occasions in class—that he is going to give me a bad evaluation. Fortunately, several students have come to my defense, and I have handled him as politically correct and positive as I believe I can. But I am concerned about his threat to give me a poor evaluation. Any suggestions?

This is more common than you might think, and it not surprising given such a wide variety of students (backgrounds, locations, personalities) taking a distance learning course and its asynchronous nature, thus allowing for more "faceless" posts. What you don't want is to let the one ugly dot on an otherwise pristine wall (your comment about other students sticking up for you gives this impression!) of teaching get you down. And, yes, there a few things you can do.

First, immediately contact your direct supervisor, letting him or her know of this student's actions; be sure to enclose copies of his postings, along with those of the students who have come to your defense. Also, add in a few of your responses to him to show you did not write anything to antagonize this individual and that you've tried to handle the situation in the best way possible. After that, just teach your course as you normally would, and when responding to him do so as you would to any student's posting or assignment: in response to the quality of the posting and assignment, nothing else (and always toss in a few positive comments—just as you would for any student). Don't let such a student derail your effectiveness!

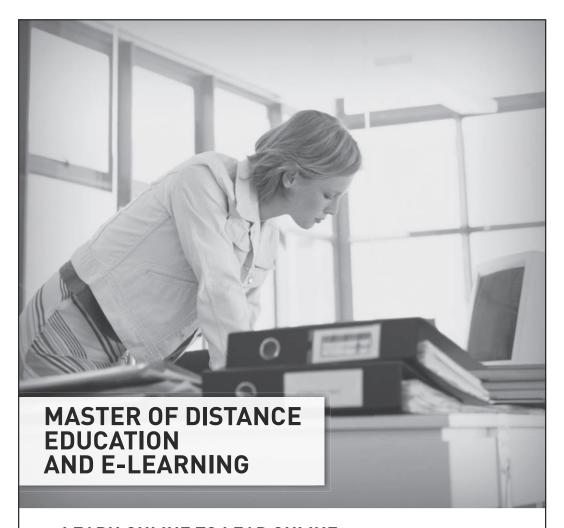
I'm fresh off completing my master's degree in creative studies, and I'm set to begin teaching my first online course in the spring. This is exciting for me, as I've heard so many positive comments about teaching online from some friends who have been doing it awhile. (They have also loaned me copies of Distance Learning, and I've learned much from your columns—I think they will help me be a better online instructor.) But with my degree I'm wondering: is there room for creativity in the online classroom? From what I've heard they are pretty structured as to the syllabus, the course layout, and the assignments.

First, I'm glad my columns have been constructive reading for you—all the information in both columns is based on real situations and concerns in the distance learning classroom, so I know it can enhance your online teaching efforts! Now, as to your question—the answer is yes and no. Yes, you are correct; there is much structure in the online classroom,

and this is important, as it is in any course. Students need a solid outline of what they are going to learn, when they are going to learn it, and the course materials available; some schools even provide templates for assignment feedback and discussion and/or assignment comments. But by no means does this translate into you placing your degree on a shelf to gather dust—not at all.

Look over the details of your course structure and the subject, then link what you can with what you've learned in your degree program; you will no doubt find many ways in which you can enhance your teaching efforts by using your creativity studies to make the course material especially exciting. Too, nearly every school offering online courses encourages instructors to post additional resources for students; here is where your degree can really come in handy by posting info, articles, essays, videos, et cetera that are associated with your degree and relate directly to the course (just be sure to give the students a brief explanation as to this connection). Also, inquire as to whether your school offers opportunities for faculty to contribute to a faculty bulletin or newsletter and make webinar presentations to faculty; these would be excellent venues for you to use your degree by focusing on the needs of the school and its faculty.

Remember: No matter how super one might seem each person always needs help from others: The Lone Ranger had Tonto, the Green Arrow had Speedy, Superman had Jimmy Olsen, and Batman had Robin.



LEARN ONLINE TO LEAD ONLINE.

Tomorrow's most coveted instructors and managers will be those who can design, develop, deliver and manage educational programs online. Start preparing today, with a certificate or Master of Distance Education and E-Learning from University of Maryland University College (UMUC). Taught by an international faculty of distance learning professionals, the program takes a unique, interdisciplinary approach. Dual degree options with the UMUC MBA, MS in management or MEd in instructional technology are also available.

- Three specializations available: Teaching and training, policy and management, or technology
- Opportunities to network with students through several social media channels
- Financial aid and an interest-free monthly payment plan available



Enroll now.

800-888-UMUC umuc.edu/**elearning** as the Massachusetts Institute of Technology, and Stanford, offer MOOCs. Interestingly, many of the instigators of MOOCs initiatives have left their universities to offer massive online courses via private corporations.

Next, it is obvious that the learning group is separated; at least the learners and resources are geographically separated. But what about the instructors? Certainly MOOC designers and the talent featured in the videos can be considered instructors, but are these individuals actually involved in the use of the MOOC or are they "just talent?" Instructor involvement in the teaching and learning process is unclear.

Most definitely, communications technologies are used to deliver content and make the content available to learners; most often content is digitized content via the Web. Often, class presentations are video recorded, documents are digitized, and self-test quizzes and exams are written and programmed, often with self-scoring. Great stuff, but ...?

So, are MOOCs distance education? A closer examination of the definition of dis-

tance education may be helpful. Distance education consists of distance teaching AND distance learning—two components of the education process. Do MOOCs provide both teaching and learning? Some say no, since the instructional aspects of MOOCs are programmed and offered but only as a prepackaged self-study system.

MOOCs are usually loaded with outstanding content, and well-delivered presentations, but those who would claim that MOOCs are the future of higher education need only review the instructional films and instructional video phenomena of the 1960s and 1970s. Excellent self-study, but not education.

And finally, there is much to be learned from the study of MOOCs. As Shakespeare wrote in Hamlet, "there is method in't."

REFERENCES

Shakespeare, W. Hamlet, Act II, Scene ii, line 211 Simonson, M., Smaldino, S., Albright, M., & Zvacek, S. (2012). Teaching and learning at a distance: Foundations of distance Education (5th ed.). Boston, MA: Pearson.

MOOC Madness

Michael Simonson

"Though this be madness, yet there is method in't"

—Hamlet, Act II, Scene ii, line 211, Shakespeare

assive open online courses, or MOOCs, pronounced interestingly enough as moooooks as in cow sounds, are the "talk of the town." The October 5, 2012 Section B of *The Chronicle of Higher Education* dedicated its entire issue to the topic of MOOCs. The *New York Times* has written about MOOCs, and even South



Michael Simonson, Editor, Distance Learning, and Program Professor, Programs in Instructional Technology and Distance Education, Fischler School of Education, Nova Southeastern University, 1750 NE 167 St., North Miami Beach, FL 33162. Telephone: (954) 262-8563. E-mail: simsmich@nsu.nova.edu

Florida's own *Sun Sentinel* has opined on the topic of MOOCS.

Just what are MOOCs and what do they offer to the field of distance education? Simply, the name tells it all. MOOC courses are massive, often with enrollments in the tens of thousands. Next, they are open, meaning open access courseware is used to deliver the course, and enrollment is open to anyone who is interested. Next, MOOCs are online, fully online and asynchronous. And last, they are courses, often a digitized version of a traditional lecture class with sessions recorded in video, audio, and posted online.

But, are MOOCs distance education, as many think? First, one needs to define distance education. *Distance Learning* journal has regularly applied this definition: "Institutionally-based formal education, where the learning group is separated, and where interactive communications technologies are used to connect the instructor, learners and resources" (Simonson, Smaldino, Albright, & Zvacek, 2012).

At first glance this definition does seem to include MOOCs as they are most often configured. MOOCs are institutionally-based; at least originally they were. The great universities of the United States, such

... continues on page 103

ISSN: 1547-4712

Distance Learning
IAP-Information Age Publishing
P.O. Box 79049

Charlotte, NC 28271-7047

www.infoagepub.com