# Web 2.0 and Course Management Systems

*Jennifer Patterson Lorenzetti*

On the surface, it may seem that Web 2.0 and course management systems are like chalk and cheese: where Web 2.0 is dependent on ever-changing content, course management systems are often use to preserve and keep consistent a set amount of content known as a course.

However, institutions of higher education have much to learn by looking more closely at the example of Web 2.0 says Bryan Alexander, a researcher with the National Institute for Technology and Liberal Education in Ripton, Vermont. A recent conversation with Alexander was a fascinating tour of the opportunities that Web 2.0-like applications may have for the academy and the barriers that exist.

## The Road Not Taken

One can place the fork in the road between Web 2.0 and course management systems in their current form in about 2000. At this point, Alexander says, "course management systems got commoditized and vendable," as some of the systems were standardized and available for purchase off the shelf. At about the same time, Web 2.0 (although the term for internet-based applications that rely on small bits of user-generated content was not yet coined) was beginning to take off.

*Academics often recognize the power of Web 2.0 for certain types of communication and information sharing, and they do not restrict themselves from using it.*

"In higher education, we deliberately selected one of these routes, and that's not what the world did," says Alexander. And now that many institutions have adopted course/learning management systems, changing course will be more difficult. "Getting faculty to change their LMS is like moving a graveyard," Alexander quotes one commentator on the subject.

The division between Web 2.0 and course management systems also encompasses a difference in philosophy, although perhaps more by reputation than reality. Course and learning management systems "also [embrace] a conservative view of intellectual property," says Alexander. In these systems, it is easy for content to be created, housed, and maintained while controlling who can make changes. Faculty retain their traditional roles as subject matter experts, and there is still a sense of ownership of one's course, even when it is developed with the help of a course designer and perhaps shared with adjunct instructors also charged with teaching the course.

On the other hand, "Web 2.0 has an aura of openness," says Alexander. There is a sense of fluidity about these applications, which depend upon the users to determine part or all of their content and determine their direction. The notion of someone attempting to control the content or use of something on YouTube, Facebook, or Twitter is unlikely, and users rarely contribute thinking they can control any more than their own contribution, and often for only a brief period of time.

However, it is clear from looking at practice that academics do not necessarily fall exclusively in one camp or the other. "The division is artificial," says Alexander. For one, academics often recognize the power of Web 2.0 for certain types of communication and information sharing, and they do not restrict themselves from using it. "Many people have been doing Web 2.0 on their own and by passing IT," says Alexander. A common example of this is a blog, which a faculty member may choose to create using a Web 2.0 application outside the university.

## in this issue

Course management systems, too, are moving toward Web 2.0-type functioning. Moodle, for example, is an openly accessible course management sytem that Alexander describes as "focused on microcontent." Even Blackboard, he says, is "moving in staggered steps toward Web 2.0," especially with its involvement with scholar.com. "We probably will see more and more of those," he says, although he notes that Web 2.0-type applications within commercial course management systems are often restricted by course as to who can see and use the content.

## "Early adopters" and "early majority"

Alexander recommends Crossing the Chasm: Marketing and Selling High-Tech Products to Mainstream Customers, a book by Geoffrey A. Moore that discusses how to cross the chasm between visionaries and pragmatists, two segments that marketers call "early adopters" and "early majority." Moving acceptance of a technology product or service from those who can see its future worth to those who are just ahead of a widespread adoption trend is important to the success of that product or service. Such is the case with Web 2.0.

"You have to look at the middle chunk; you have to find examples of people in those mindsets using Web 2.0 in education," Alexander says. And these examples of early adopters and early majority thinkers may well come from public intellectuals.

"We're not paying attention to public intellectuals," Alexander says, pointing to the example of Carl Sagan. Even after his death, Sagan is the subject of controversy, being seen either as a brilliant scientist or as one who sold out to work with the masses. And yet it is these public intellectuals who are setting the best example of how to use Web 2.0, a collection of tools tailor-made for the needs of a wide range of individuals not formally constrained by university affiliation or level of education.

Academics have shown that they can become interested in Web 2.0 if the appropriate models demonstrate the utility to them. For example, Alexander points to NPR as one source of information that academics seem to trust; he says that he knows when NPR does a piece on podcasting or Twitter, because the next day he will receive a number of inquiries on the topic. Additionally, the recent campaign of President Obama, with its emphasis on texting and blogging, showcases the legitimate power of Web 2.0 applications once thought to be only of interest to teenagers.

Additionally, the technological landscape will continue to change, and some of these Web 2.0 applications are part of the information literacy that academics and the public will be expected to master to stay effective in their environment. An example of this is the impact the world of gaming has had on ordinary technology. Alexander explains that, because of the increased interest in high-powered computer gaming, computers themselves have changed. Even the most bare-bones model comes with relatively robust sound, video, and graphics capabilities, because the assumption is that the user may be interested in games. A similar thing may happen as Web 2.0 becomes common currency.

And lest we think that our students know everything there is to know about Web 2.0, and that we as faculty and administrators are simply playing catch-up, it is important to remember that they too need to learn. "K-12 does not teach critical thinking about technology," Alexander laments, pointing out that the most commonly-taught technology topic in K-12 is keyboarding. ●

# Mass Education to Universal Education: Where Does Online Learning Fit?

*By Gary W. Matkin, Ph.D.*
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In 1974, Professor Martin Trow of the University of California, Berkeley, my esteemed and affectionately remembered colleague and dissertation advisor, wrote a paper titled, "Problems in the Transition from Elite to Mass Higher Education" that has structured the study of comparative higher education to this day. In that paper he described two underlying trends in higher education, the movement from elite to mass education, and from mass to universal education. Elite and mass higher education was defined by a simple metric: the percentage of high school graduates that went on to higher education. Elite higher education sent between 5 and 10 percent of secondary school graduates to college, while mass higher educational systems sent 30 percent or more forward. Examining the changes brought about by the movement from elite to mass education on all aspects of higher education – programs, admissions, student life, facilities – through Professor Trow's lens has had a tremendous organizing effect on the international study of higher education.

## Universal Higher Education and Technology

As important as Professor Trow's conception of this movement was, it was not as profound as his idea of universal higher education. Universal higher education was not well defined in his early papers, or even later on when he and I and some colleagues at the Center for Studies in Higher Education at UC Berkeley began studying the impact of Internet technologies on higher education.

As I have reflected on the origin and evolution of Professor Trow's concept I have concluded it was prompted by the "prescient unknown" and was a kind of catch-all concept for changes that he sensed were coming. The Internet was inconceivable in 1974, but the promise of "computers" propelled us into flights of speculation and anticipation. By 2005 the implica-

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*The trend toward universal education, supported by a steady advance of technology, will supply an evolutionary challenge to distance educators.*

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tions and possibilities presented by the new technology were clearer.

"The uncertainty factor in this scenario is technology, especially the technology of communications. Education in recent decades has seen too many announcements of abortive "technological revolutions" to not be properly skeptical of new announcements of yet another. Yet it seems likely that in the near future much of what is done today among people working in physical proximity may be possible to approximate through electronic links among people who are physically separated. And that will be an educational revolution."

By the time of his death in 2007 Professor Trow understood many of the implications of Internet technology although personally he remained deeply disturbed by what he predicted would be a disruption in traditional values and practices in higher education. But he also had an historical perspective that made him view the use of effective new technology as a kind of imperative that could not be pushed aside for long.

Using the concept of universal education as a lens we can place the steady and rapid march of instructional technology into our daily lives. Whereas Professor Trow's early emphasis on universal education primarily focused on the pushing of higher educational functions into a diverse and diffuse set of providers – community colleges, university continuing education programs, businesses, museums, service organizations, unions – his later writings and conversations began to focus on the blending of education with other activities of everyday life. Most of us see the blending in our personal and work lives as we grab our Blackberries and scan the emails we have received during the night (mostly ads and promotions that have escaped our anti-spam filters) before we brush our teeth. We now see this same trend in higher education. With much of our education available on the Web at any place, any time, we are free to start and stop our learning process at will and with great convenience. It is common now for online courses to provide "bookmarks" indicating where a student last logged off. With most of the supporting material available at a click of a button, students rarely have to take the time to schedule a trip to the library or the bookstore. And now, mobile technology will permit learning during those times (boring meetings,

# 30 Tips for Picking an LMS Verbatim tips collected from elearning colleagues

## FOCUS: Product features and user requirements

1. Who will be the end users of the system (employees, students, etc)? Budget (ROI). Selecting the right-technology based on an organization's requirement. Customization vs. developing a new system right from scratch.What all the LMS/LCMS features are.

2. I think you need to be very creative in thinking about how your system will be used throughout the company.Who will want to post training? Will they want reports? Individuals will want to know what classes they have taken. VPs will want to know who has taken a certain course. HR will want data on completion of mandatory compliance training.What kind of data must be collected?

3. Assessments? Self-tests? Feedback forms? Who should have access to these reports and data? Do you want learning paths? Should they be enforced? Should prerequisites be enforced? Can you add classes you want to take to a "wish list" for later consumption? Can you add all of the classes from a learning path to that "wish list"? How will learners search for classes? What if they don't know if a class exists? Will your learners be internal only, or also customers and partners? Will some classes be only for some of these audiences? How will you restrict access? How will you take care of payments? Will the LMS have only online courses, or schedule live events as well?"

4. A LMS must match both technical and instructional criteria for a given organization, given that such software is often quite an invest-ment. One primary consideration I advise people to explore is whether or not there are existing courses which would have to be migrated to the new LMS. Beyond this, I think it is additionally critical to match the complexity of the LMS with the technical support available within the organization, both in terms of supporting the service itself and in terms of supporting the development requirements of the courses.

5. Before selecting an LMS, make sure that you do your research. Make sure that all components that you want in an LMS are in the program, and that the product is user-friendly and cost effective.

6. Make sure that it works with your registration system and any other college-wide system such as email portals or homepage portal. Is there training for both faculty and administrative sides available from the company before you agree to the system. Is the price they are charging for the LMS worth the benefit they will provide? How much technical help do you need with the system, and how does this LMS provide the help? Is there student training to get your students up to speed on how to use the system? Is the system intuitive to use or do you have to look up every procedure when you want to create courses or add assignments, etc.?

7. Map the facilities and tools of the LMS with the LEARNING requirements of the online teaching staff. If they don't map — don't select it! Make sure that any selection process has input from the teaching staff who will use the LMS. Look at the forward planning process that the vendors and developers go through. Look for input from people with educational expertise, and for planned upgrades that include new e-Learning tools and techniques.

## FOCUS: Product features and institutional needs

8. Evaluate the future growth of your organization before selection. Evaluate the platform for the LMS/LCMS. Make sure you are familiar with the platform and understand issues that may come up.

9. Understand the limitations the LMS/LCMS has.There is no tool that can do it all. See if the ones you are evaluating suit your need. Check that it is standards-compliant, SCORM and AICC, as this makes it easier to assess whether material from a variety of vendors will work and minimizes the amount of setup required to run compliant material.

10. LMS's are fantastic for data in.Vendors impress you with all the features that house the architecture; however, one of the biggest problems is data out, i.e. reporting. During the selection process, I would highly recommend that the organization have clear definitions of what they need to report on, and have the vendors verify that the required reporting exists. A clear understanding of how to get these reports is very important, too. Do you need specialized reporting skills to design the types of reports you need (or will you have to pay a third party to write them), or does the system allow for "on the fly" data selection that creates the report as you go? Another very big decision (relates to the MANAGEMENT section, too) is whether or not your organization wants to host the LMS or bring it inside.

11. Understanding the resources

# Using Surveys to Improve Courses, Programs, and Instruction, Part 5

*By Patti Shank, PhD, CPT*

This month, I'll finish up the series on using surveys to obtain data to improve your online courses and instruction. Surveys are easy to design and implement, but designing good questions and getting good information isn't easy. That's why I've written previous articles on how to write good questions so you get the information you need. This month, we'll complete this series by discussing the use of Web survey applications.

Web survey applications, for the purpose of this article, mean online applications such as Zoomerang and Survey Monkey, which facilitate creation, implementation, and analysis of surveys using their online application. Your institution may have its own Web survey applications, and many of the comments in this article should apply to them as well.

## Advantages and disadvantages of Web surveys

Web surveys are becoming ubiquitous—we see requests to "participate" everywhere. Receipts from stores and restaurants push consumers to go online to describe their experience.

So one of the advantages of using a Web survey is that potential respondents likely know how to use them. Here are some additional advantages to using Web surveys:
- Most of the Web survey applications make designing, implementing, and analyzing a Web survey quick and easy.
- Some of the Web survey application vendors allow anyone to create free surveys (usually for a small group of people with somewhat limited functionality).
- Many of the Web survey applications can apply complex question logic (such as if the answer is a or b, present the next question and if the answer is c or d, input two additional questions before the next question) and have other unique features that can't be accomplished with paper or most email surveys.
- Some research shows that people give longer answers to open-ended questions on Web surveys than they do on other kinds of surveys.

And now some disadvantages:
- It's quite easy for respondents to quit in the middle of a Web survey because interacting with a Web page is impersonal.
- Depending on the Web survey application, you may need to make sure that only desired respondents can reply and that desired respondents can only reply once.

## Design considerations

If you decide to use Web survey applications for your survey, there are some things to keep in mind.

Include introduction text and general instructions on the first screen. Explain why you are asking students to provide answers to these questions and what you will do with the information. Assure them that their answers are confidential (if they are—and they should be). Put other instructions where they are needed rather than putting all instructions up front.

Design for clarity. Web survey applications may allow you to add various bells and whistles such as font styles, backgrounds, and colors, but use these judiciously because they are distracting and reduce clarity. It may be a good idea to use a different font or font attribute (such as italic or font size) for instructions rather than for question text so respondents can find instructions easily. But don't use italic for long passages of text. Italic text is harder to read than non-italicized text.

Make the background color white or very light and the question text black so respondents can easily read the questions. Don't use graphics unless they are needed to answer the question. Many of the survey vendors have color and design templates you can select and these may look better than a homegrown color scheme. Make sure the survey text is easy to read.

All multiple-choice answers should be labeled the same way (1., 2., 3., or a., b., c.). Be consistent with color, too. For example, if the instructions are blue, they should always be blue. If you want to highlight a word such as "not" in a question, use the same method (bold, color, etc.) wherever you want to highlight a word in a question. And remember that some respondents may be colorblind or using a screen reader.

Make the survey as short as possible, and tell students how long it should take. Five to 10 minutes is reasonable; 20 minutes isn't. Provide open-ended questions to find out what changes are needed, such as "What two changes do you suggest that I make to the course to improve it?"

Limit required answers to truly crucial questions. Making questions required (they must be answered for the survey to progress) may increase dropouts or nonsensical answers (typing in anything so the survey "thinks" the question was answered). And if required questions are multiple-choice (rather than open-ended), be careful to include all expected answers or add an

commuting trips, other odd "unproductive" moments) when we currently check our email messages.

## Universal Education and Distance Educators

Professor Trow's notion of universal education provides distance educators a way of structuring the constantly changing context of teaching and learning online. A projection of current movements toward universal education suggests the following consequences and/or responses for distance educators:

### 1. The push toward mobile devices.

As mobile telephony and Internet access becomes more ubiquitous, students and teachers will demand that their learning and teaching activities be delivered on mobile devices. Currently, while a variety of technologies exist for using mobile devices for course delivery, some significant technology adjustments are required. Distance educators should develop plans and the capacity to deliver courses and course segments to mobile devices.

### 2. Course design and "chunking."

Over the last 10 years distance educators have become aware of learner's increased desire to have learning opportunities delivered in shorter and shorter "chunks" or segments. This trend will now be reinforced by learners who are trying to integrate learning into busy lives as the opportunity exists. Where possible, courses will have to be divided into coherent and meaningful but short modules. Learning modules requiring sustained attention need to be clearly identified for students.

### 3. Modularized learning certification.

As a corollary of the shortening of the learning experience, the certification of learning will be applied to learning experiences of shorter duration. Pressure is already placed on distance educators to shorten 30 or 40 hour courses. Learners are seeking a sense of completion more frequently and will want to "track" or have documentation of their learning more frequently. Alternatives to the traditional expression of this "tracking" process – the entering of a grade or a student transcript – will increase and take different forms such as a physical certification of completion issued automatically by the delivery system.

### 4. Stop/start navigation.

Those distance education delivery technologies that do not have well articulated means for students to stop the learning process and then restart it later will have to develop that capacity. It will become more important to develop course re-navigation schemes to accommodate these features of universal education.

### 5. Work, life, learning integration.

As the traditional temporal separation of work, life, and learning lessens, the tendency for learning to be reinforced by the other realms will increase with consequent implications for learning design. Students will increasingly expect their learning experiences to be authentically related to their lives and work.

The early effects of universal education are already clear and can be reasonably projected into the future. But. For some, this trend will be seen as removing control of the learning process from educators. For others, adjusting to the reality that faces us is

entirely consistent with the history of distance education.

## For further reading:

Trow, Martin. "Problems in the Transition from Elite to Mass Higher Education." In Policies for Higher Education, form the General Report on the Conference on Future Structures of Post-Secondary Education, 55-101. Paris: Organisation for Economic Co-operation and Development, 1974.

Trow, Martin. "Reflection on the Transfer from Elite to Mass to Universal Access: Forms and Phases of Higher Education in Modern Societies since WWII." Institute of Governmental Studies, University of California Berkeley, 2005.

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answer that combines multiple choice with open-ended, such as

d) None of the above (please explain)
_____
_____
_____

Allow space for answering when long replies to open-ended type questions are desired. Look at the large text box above and the smaller text box below. The smaller one may make respondents feel they need to keep their answer short.

d) None of the above (please explain)
_____
_____
_____

When you are done creating your survey, test it. Make sure that all the pages look and act as expected. If you used complex logic, does it work as expected? Ask others to tell you if your questions are clear.

Most Web survey applications allow you to download the data into Excel for analysis or to analyze the survey online. If you want to be able to determine if the answers are different for males and females, undergrads and grads, new online students and experienced online students, for example, make sure to ask for those demographics in the beginning of the survey. Then you will be able to filter the data by demographic.

Next month, I'll begin a series on practical ways to pump up the content and activities in your online courses.

## Web survey applications

Question Pro: www.questionpro.com/
Survey Key: www.surveykey.com/
Survey Monkey:
www.surveymonkey.com/
Survey Share: www.surveyshare.com/
   Zoomerang: www.zoomerang.com/

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required for internal support is critical. Is this a core competency within your organization? If a decision is made for hosting, request and contact other customers that host an LMS. Hosting has its own set of management issues, and customers need to be crystal clear on what is covered and/or provided through managed services.
12. User needs analysis needs to be completed. Budget. Is the product going to scale to your future needs easily? How is the product supported?
13. Question to ask: Are you going to pay for customizations, possibly taking you off the path to future upgrades, or are you going to take an "out of the box" approach to the

system? Decide early on if you are going with a hosted solution vs. in-house hosting for your system. This will have a big impact on who can play the role of long-term, day-to-day system manager. If you go with a hosted solution, you won't necessarily need your IT Department to play as big a role in the day-to-day system management.

## FOCUS: Stakeholder involvement and the selection process

14. Define the need and the success criteria of the tool and get the key stakeholder's written buy-in before you start looking or shopping. Criteria should include functional and non-functional needs.
15. Establish an engagement model which ensures that all stakeholders

understand what's desirable and achievable and which facilitates a "no surprises" situation at ITT time. Encourage the use of iterative proto-typing in modeling requirements, scalability, extensibility, configurability, keywords. Clarify MOSCO list for needs.
16. Establish your requirements early and ensure buy-in from relevant stakeholders. Do a buy or build analysis. Determine your criteria for who can create learning content; develop or adopt an instructional design methodology. Ensure that the system you select or build is compatible with the tools you want to work with and can support your IDM.
17. Make a comprehensive wish-list of requirements before you go hunting

for an LMS. Make sure everyone in your organization who will be using the LMS has a chance to demo it. Get references from other organizations using the product.

18. Reference long-term organizational goals. Develop metrics for learning program success and LMS success before beginning the selection process. Understand the technology; be partners with your HRIS and IT departments.

## FOCUS: Institutional needs and vendor management

19. Have a clear understanding for what it is your clients, internal and external, want and need from such a system. Do their services and features match the needs of your objectives?

20. Ensure the quality of the technical services of the LMS company. Embarking on such a project without the help of quality, timely technical service is a nightmare.

21. Successful selection criteria of an LMS and/or LCMS might include the following:
   • Needs analysis and functional requirements must meet vendor's system features requirements (and/or be willing to customize a solution for you)
   • Vendor's system must be scaleable in terms of feature set, architecture, and customization
   • Vendor's system must be easy to use from a user and administration perspective
   • Accessibility of vendor's overall support
   • Vendor's history, vision, and current successes throughout the industry
   • Overall price and support costs

22. Determine compliancy requirements and ensure that the LMS can support them. Ensure that upgrades of the LMS have not previously compromised stored data or broken courseware links.

23. Spend more time to collect and understand the requirements for the LMS/LCMS. Also, develop an objective and thorough functionality test for the finalists of your selection process. Ask to participate in their training before you purchase to evaluate its quality. Finally, require each vendor to build lesson test cases and export them to SCORM. Run these lessons in the SCORM RTEs.

24. I would also stress the importance in selecting an LMS/LCMS vendor that will take on the role of partnering with you to get you through implementation and successful launch of the system.

## FOCUS: Stakeholder involvement and product features

25. Enterprise capabilities — can it be easily expanded and used by satellite locations?
   • Intuitive — can an instructor use it immediately or is training necessary?
   • Vendor support — what levels of support are included and what is the cost of those services?
   • Faculty buy-in — at a university, it is important to include faculty in the process. Understand what an LMS is and what it should do.
   • Have a basic understanding of how a database works and that the LMS is a type of database with specific data containers.
   • Understand how standards like AICC and SCORM assure consistency in the database and the data a course will track.
   • Talk to your ISDs, programmers,

and authors. Ask for input before you purchase an LCMS. We purchased one and never used it because everyone had their own development tools which they preferred over learning another tool with less flexibility.
   • Talk to your HR Information System DBA so you will not be blindsided by issues with the HRIS not working with the LMS. They must share information, preferably in real time.

26. Be sure to use a team approach made up of instructional design folks and the end users. Evaluate a number of products and compare and contrast each LMS based on a pre-defined list of core criteria.

27. Above all ask questions about what the product will do out of the box, and if the demo looks too good to be true ask if that is the out-of-the-box model without add-ons and other cost-added features.

28. Make a list of all features that are critical as well as those that would be nice to have. Make sure that high-level management understands why there is such a difference in pricing, and that you will get what you pay for.

29. Match the needs of the organization with the LMS. Don't merely purchase an LMS because it has highest market share. Carefully consider features that you need (in conjunction with the campus) and don't purchase a system that is overpowered for what is needed. Explore options.

30. Seek recommendations from a wide variety of stakeholders. Network with persons using various systems and see it in action — not merely the LMS/LCMS provider. Look for intuitiveness. ●