

First Monday, Volume 14, Number 10 - 5 October 2009



Insidious pedagogy: How course management systems impact teaching

by Lisa M. Lane

Abstract

Course management systems, like any other technology, have an inherent purpose implied in their design, and therefore a built-in pedagogy. Although these pedagogies are based on instructivist principles, today's large CMSs have many features suitable for applying more constructivist pedagogies. Yet few faculty use these features, or even adapt their CMS very much, despite the several customization options. This is because most college instructors do not work or play much on the Web, and thus utilize Web-based systems primarily at their basic level. The defaults of the CMS therefore tend to determine the way Web-novice faculty teach online, encouraging methods based on posting of material and engendering usage that focuses on administrative tasks. A solution to this underutilization of the CMS is to focus on pedagogy for Web-novice faculty and allow a choice of CMS.

Contents

[Introduction](#)
[The inherent pedagogies of CMSs](#)
[Novice Web users and the CMS](#)
[The fault of the defaults](#)
[Solutions to CMS dominance](#)

Introduction

But lo! men have become the tools of their tools.
— Henry David Thoreau

We would like to believe that technologies are neutral, that they can be used well or used poorly, but contain no inherent direction or intent. As a historian of technology, I have heard this argument about the building of the caravel that made possible the conquering of the Americas, the creation of the atomic bomb that ended World War II, and the invention of DDT. These new technologies, we say, had both good and bad applications, which depended entirely on the humans using them. Instinctively, however, we know that such an approach is faulty. The fact that each technology had a specific purpose implies a goal in its design, an objective that limited or even determined its use. Today's online technologies are no different, and create serious impacts on our teaching.

Course management systems (CMSs), used throughout colleges and universities for presenting online or technology-enhanced classes, are not pedagogically neutral shells for course content. They influence pedagogy by presenting default formats designed to guide the instructor toward creating a course in a certain way. This is particularly true of integrated systems (such as Blackboard/WebCT), but is also a factor in some of the newer, more constructivist systems (Moodle). Studies about CMSs tend to focus on their ease of use or how they are used by faculty: their application, for good or ill. Few discuss the ways in which they influence and guide pedagogy, and those that do only note their predisposition for supporting more instructivist methods. Current research also ignores the fact that many of the new wave of online teachers are Web novices entering the field without a deep understanding of online technology. A closer look at how course management systems work, combined with an understanding of how novices use technology, provides a clearer view of the manner in which a CMS may not only influence, but control, instructional approaches.

The inherent pedagogies of CMSs

Course management systems each contain their own inherent pedagogy, and for most systems these pedagogies are traditional in nature. As with all technologies, the design of the product is a result of its perceived use. Today's enterprise-scale systems were created to manage traditional teaching tasks as if they were business processes. They were originally designed to focus on instructor efficiency for administrative functions such as grade posting, test creation, and enrollment management. Pedagogical considerations were thus either not considered, or were considered to be embodied in such managerial tasks.

The built-in pedagogy of the big systems is based on traditional approaches to instruction dating from the nineteenth century: presentation and assessment. This can be seen in the selection of features which are most accessible in the interface, and easiest to use. In Blackboard/WebCT, the simplest tasks are uploading documents and creating text in boxes. Although the Discussion Forum is at the top level of access, most other non-traditional features are buried deep in the system. According to Van Weigel, "the downside of the CMS is that it canalizes our collective creativity by forcing e-learning technologies into the familiar classroom categories of lectures, discussions, and exams", reinforcing "uncritical acceptance of the traditional features of the classroom model." [1] This should not be seen as a faulty pedagogical model. Many instructors offer effective classes based on lectures and tests, both for on-site and online classes. And a CMS must be designed around a central pedagogy: consistency of interface relies on consistency of approach (Earle, 2002). It is only important to recognize that the interface of any software reflects its intent.

It would be wrong to see today's CMSs as monolithic in their instructivist or behaviorist pedagogies. Over the past several years these products have become extremely rich in their features, able to accommodate all sorts of non-traditional activities. They feature in-network blogging, portfolios, branched lessons, instant messaging, and research "scholar" elements, including RSS feeds. The ability to customize such systems, not only with colors or themes, but also with links to external URLs and internal features, are expanding with each new version. Even if you leave aside the fact that these systems are closed silos, and that this fact alone could hamper pedagogy (Lamberson and Lamb, 2003), there are still plenty of pedagogical choices. Blackboard's business model in particular seems to be based on adding as many requested features to their system as they can. Today's CMSs can be customized, changed and adapted, so why aren't faculty tinkering with them in an effort to make their individual pedagogies work online?

Novice Web users and the CMS

A couple of years ago I was at a conference featuring award-winning Web-based courses. An exhibit hall featured the winners, each sitting next to a computer with their class open to conference visitors. The college used WebCT, and had just updated to the new Vista version. While looking at a traditional course, with a few useful graphics added for student interest, I noticed the instructor was using the default course menu buttons and I asked him why. He told me that on the old system he could change the buttons, but on Vista he could not. I was appalled and we mutually shook our heads about the way CMSs just don't seem to get better. Then, on the other side of the table, was another class, with customized buttons. I asked the instructor how she did it, and she showed me — it was there, just deployed differently than in the old WebCT.

Many instructors teaching online today are not "Web heads"; most are not initial adopters or faculty innovators who created their own courses years before course management systems existed. Today's online faculty don't teach online because they spend their lives blogging, reading feeds, and Twittering, and one day think, "hey, I could also *teach* online!" Most were drafted, either because they felt their market value would slip if they didn't teach online, or because their department or dean told them they must. Their adoption of technology is based on top-down directives rather than interest or aptitude (Samarawickrema and Stacey, 2007). They do not possess the "information literacy" skills now required of many undergraduates (Reid, 2006), despite an assumption that professors are all computer-savvy (Dykman and Davis, 2008). Some of these faculty have been teaching in the classroom for many years, and have developed successful instructional formats for themselves, be they traditional or more collaborative. Then they are assigned to teach online. When they ask where to start in creating an online course, they are usually pointed to the college's preferred CMS. And that's where the pedagogical

guidance begins.

It's important to make a distinction between a teacher experienced in *instruction*, and one experienced in *using the Web to instruct*. The term "novice faculty" would not be seen to apply to most professors teaching online, yet most are novices when it comes to the Web. According to my own survey of online instructors at two community colleges, most do not use the Web either extensively or intensively in their own work (Lane, 2007). They tend to rely on the methods they were taught in graduate school to conduct their own research, and the fact is that most graduate schools utilize the same methods of research and scholarship as were used decades ago. Few programs in the traditional disciplines at traditional universities offer anything in the way of Web-based methods, or opportunities to use such methods for original research beyond online databases. Thus it should be no surprise that one survey of over 2,300 college instructors showed that while many use e-mail and some use discussion forums or plagiarism-check applications, none were communicating with students via current Web technologies such as video or audio chat, and only a few were experimenting with blogs for classes (Jones and Johnson-Yale, 2005). A more recent study of faculty, most of whom had used Blackboard for over two years, still showed similar use patterns (Chang, 2008). The fact is that most of our faculty were, and continue to be, novices when it comes to learning applications of the Web.

Novices, as any tech support person will tell you, approach technology differently than experts. One revealing study took into consideration every combination of content and Web expertise, in order to determine how educated people use search functions on the Web. Those experienced with the content involved in the search, but inexperienced at using the Web, did not tend to search far from the central "hub" where they began. Such users rarely went deeply into the site: "While seeking information, the Web novice groups were overwhelmed by simply trying to keep track of their location, and they repeatedly got lost." [2] These users were trying to reduce their cognitive load by limiting their use of the software, while Web experts were able to keep their goal in mind easily while searching more deeply. Expert users contextualize their resources fluidly and organize materials effectively, while novices just upload and share files, hoping students will find them (Reanut, *et al.*, 2006). When faced with a different interface or online environment, novices are inclined to utilize only the aspects they understand from a non-Web context. Posting a Word document online makes sense, but not creating an HTML page, because a word-processed document is a familiar unit of presentation but a Web page is not. Similarly, e-mail is the current incarnation of the familiar process of writing a memo, but there are fewer guideposts for instant messaging or video conferencing. The addition of hardware peripherals, such as a webcam or microphone, further increases the distance between the professor and familiar modes of teaching.



The fault of the defaults

These problems translate directly into the Web novice faculty response when facing a course management system. Novice users rely heavily on the first tier of accessible features, and depend on elements that assist their memory and prompt them to enter information. To operate the system, they require "restricted vocabularies, simple tasks, small numbers of possibilities, and very informative feedback." (Chen, 2001) The counterintuitive interface of a program like Blackboard stops Web novices in their tracks. When they first enter Blackboard or WebCT, new instructors see the default buttons of the course menu. These buttons are based on type rather than purpose: "Announcements", "Course Content", "Discussion", even "Syllabus" (see [Figure 1](#)).

PROGRAM FOR ONLINE TEACHING: BLANK (LANEBLANKCOURSE) > ANNOUNCEMENTS

VIEW TODAY VIEW LAST 7 DAYS VIEW LAST 30 DAYS VIEW ALL

June 09, 2008 - June 16, 2008

No announcements found.

Blackboard Academic Suite™
 © 1997-2000 Blackboard Inc. All Rights Reserved. U.S. Patent No. 6,969,138. Additional Patents Pending.
 Accessibility Information can be found at <http://access.blackboard.com>.

Figure 1: Default Blackboard buttons.

The buttons link to pages that simply provide a place to upload a document, which is exactly what most instructors do: upload word-processed files of their classroom materials. They are encouraged to “plug in” their content under the appropriate category instead of envisioning a translation of their individual pedagogical style into an online environment. Blackboard “tends to encourage a linear pathway through the content” [3], and its default is to support easy uploading and text entry to achieve that goal.

The construction of the course syllabus is a familiar beginning point for most instructors, yet few CMSs consider this. It would be natural and useful for novice instructors to see a blank *schedule* into which they could create each week’s or unit’s activities, rather than a selection of pre-set buttons or links. Most professors think in terms of the semester, and how their pedagogical goals can be achieved within the context of time, rather than space. Some think in terms of topics they want to cover. Blackboard/WebCT’s default organization accepts neither of these approaches in its initial interface. It forces the instructor to think in terms of content types instead, breaking the natural structure of the semester, or of a list of topics. Again, we know that the setup can be customized with relative ease, by going to the Control Panel and selecting Manage Course Menu, then using Modify buttons. You could change all the course menu buttons into “Week 1”, “Week 2”, or organize by topic instead of content type. But few professors try that, or they assume that they can’t do it. Blackboard can be highly intimidating to learn, and may “seriously hinder” choices the faculty member makes while using the tool [4]. Faculty are led by the interface of a CMS not only because they do not immediately see an alternative, but because the familiar signposts (the Syllabus button) imply a single way of completing the task (upload a document). Only the Moodle system provides a default setup that looks like a calendar-style syllabus (see Figure 2).

The screenshot displays the Moodle interface for 'Class J'. At the top right, it indicates the user is logged in as 'Teacher J' with a 'Logout' link. The main navigation bar shows 'LisaHistory' and 'ClassJ'. The left sidebar contains several expandable sections: 'People' (with 'Participants'), 'Activities' (with 'Forums'), 'Search Forums' (with a search box and 'Go' button), 'Administration' (with 'Grades'), and 'My courses' (with 'Class J' and 'All courses ...'). The central 'Weekly outline' section lists weekly intervals from 21 January to 16 March, each with a checkbox. The right sidebar includes 'Latest News' (stating no news has been posted), 'Upcoming Events' (stating no events are upcoming), and 'Recent Activity' (showing activity since Saturday, 14 June 2008, 07:05 AM).


Figure 1: Moodle weekly default.

As faculty work with a particular system, CMS defaults become comfortable and familiar territory. There is more satisfaction in mastering a few elements than in experimenting. Instructors move very slowly into features of the CMS that support less-instructivist models, and experience with the CMS over time does not necessarily lead to more creative pedagogy, or even to more expansive use of system features. Even after several years of working with the CMS, faculty requests for help focus on what the technology can do, rather than how their pedagogical goals can be achieved. They want speed and ease of use rather than more features (Ioannou and Hannifin 2008). Carmean and Haefner (2008) argue that any CMS can provide a deep learning experience and can be used for multimedia and in-depth communication with students. Educational technologists look at a CMS and see its many features, but faculty see an inflexible system that cannot be customized (Teles, 2002; West, *et al.*, 2007). Even experienced instructors continue to use Blackboard/WebCT primarily for grade administration, e-mail and presenting static content (Lane, 2007; Gastfriend, 2005; Morgan, 2003). This does not mean that online teaching cannot be improved through ongoing use of a CMS, but Morgan notes such improvement as a "side effect of the use of the software rather than a direct result of its use" [5] — those willing to play around with the features tend to discover new directions for their teaching.

Few instructors are consciously aware that CMS design is influencing their pedagogy. Most colleges survey faculty in some manner about their CMS, and feedback is overwhelmingly positive. This allows an institution to insist on the use of one CMS: if the pedagogy were being controlled by the system, surely faculty would be unhappy with it. But novice users do not have a framework for expectations. An instructor seeking an easy way to post Microsoft Word documents, enter grades, receive papers and assignments through a digital "dropbox", and run a traditional threaded discussion board will tend to show great satisfaction in using Blackboard or WebCT (Tufts University, 2006). Those taxing the system more, and using the most complex features, show lower levels of satisfaction. The vast majority of complaints about CMSs come from innovative, heavy users of Web technologies, those accustomed to customizing applications to make their work more effective. They also come from behaviorists and constructivists who face significant limitations in many systems. Novices happily use the high-tech CMS as a glorified copy machine (Dutton, 2004; Walker and Johnson, 2008).

Solutions to CMS dominance

One solution to the CMS pedagogy trap is to support novice online instructors differently than advanced instructors. With Web novices, pedagogy must be emphasized before features and tools. Starting with the CMS features creates a backward process. When faced with a CMS for the first time, faculty begin by experimenting with one or two tools that they already understand, then adapting the tools gradually as they gain more experience using them (West, *et al.*, 2007). Most training encourages this approach, because it gets faculty using something in the system, even if they don't understand the whole structure of the CMS. But creating a course piecemeal means that the pedagogical goals are left behind in the interest of mastering a few tools. That replaces the instructor's main strength (their expertise in their discipline and their teaching) with their main weakness (technological literacy). Teaching faculty to consider their teaching approaches first, before they enter the CMS, could help prevent tool availability from limiting their pedagogy.

Choice of CMS is also a major factor. Although it is an oversimplification, it is useful to separate course management systems into two types: Opt-In and Opt-Out. In an Opt-Out system (such as Blackboard) all the features are available by default and must be excluded to avoid confusing students. Opt-Out systems are most likely to overwhelm Web novices, because they present an array of tools, and the tendency is to reduce cognitive load by using the defaults. In an Opt-In system (such as Moodle), the instructor selects each activity and presentation factor from a menu list, effectively designing much of the interface for students. Fewer defaults are pre-set, forcing the instructor to think holistically about the class structure. Features such as chat, polls, and interactive lessons as options presented with the same weight as more traditional text-based resources. Thus there is less of an implication that presentation is key, and more of an implication that interactivity is important. In an Opt-In environment, the instructor makes choices about context on a macro level, and choices about features and tools on a micro level. This makes it possible to explore pedagogical options more freely. 

About the author

A history instructor at MiraCosta College in California since 1989, **Lisa M. Lane** has been teaching online for over a decade. As founder of MiraCosta's Program for Online Teaching, she works with both novice and experienced online instructors, emphasizing the pedagogical foundations of distance education. She posts regularly at [Lisa's Online Teaching Blog](#) on issues of interest to online professors, instructional technologists, and teachers. Lane holds a Master's in History from the University of California, Santa Barbara, and an Online Teaching Certificate from UCLA.
E-mail: llane [at] miracosta [dot] edu

Notes

1. Van Weigel, 2005, p. 55.
2. Jenkins, *et al.*, 2008, p. 82.
3. Herrington and Bunker, 2002, p. 311.
4. West, *et al.*, 2007, p. 15.
5. Morgan, 2003, p. 5.

References

Colleen Carmean and Jeremy Haefner, 2002. "Mind over matter: Transforming course management systems into effective learning environments," *EDUCAUSE Review*, volume 37, number 6, pp. 27–33, and at <http://net.educause.edu/ir/library/pdf/ERM0261.pdf>, accessed 17 April 2009.

- Chinhong Lim Chang, 2008. "Faculty perceptions and utilization of a learning management system in higher education" (dissertation), at http://www.ohiolink.edu/etd/view.cgi?acc_num=ohiou1210864179, accessed 1 September 2009.
- Tzu-Ting Chen, 2001. "Designs to help novice Web users," at <http://www.otal.umd.edu/uupractice/novice/>, accessed 17 April 2009.
- William H. Dutton, Pauline Hope Cheong, and Namkee Park, 2004. "The social shaping of a virtual learning environment: The case of a university-wide course management system," *Electronic Journal of e-Learning*, volume 2, number 1, and at <http://www.ejel.org/volume-2/vol2-issue1/issue1-art3-dutton-cheong-park.pdf>, accessed 17 April 2009.
- Charlene A. Dykman and Charles K. Davis, 2008. "Part one — The shift toward online education," *Journal of Information Systems Education*, volume 19, number 1 (Spring), at http://findarticles.com/p/articles/mi_qa4041/is_200804/ai_n25419247/print?tag=artBody;col1, accessed 17 April 2009.
- Aileen Earle, 2002. "Designing for pedagogical flexibility — Experiences from the CANDLER Project," *Journal of Interactive Media in Education*, volume 4, pp. 1–29, and at <http://www.jime.open.ac.uk/2002/4/earle-02-4.pdf>, accessed 17 April 2009.
- Hilliard Gastfriend, 2005. *Faculty use of course management systems survey: System aggregate report*, at http://www.alt.usg.edu/research/studies/cms_combined_aggregate_external.pdf, accessed 17 April 2009.
- Andri Ioannou and Robert D Hannafin, 2008. "Course management systems: Time for users to get what they need," *TechTrends*, volume 52, number 1, pp. 46–50. <http://dx.doi.org/10.1007/s11528-008-0111-7>
- Christine Jenkins, Cynthia L. Corritore, and Susan Wiedenbeck, 2003. "Patterns of information seeking on the Web: A qualitative study of domain expertise and Web expertise," *IT and Society*, volume 1, number 3, pp. 64–89, and at <http://www.stanford.edu/group/siqss/itandsociety/v01i03/v01i03a05.pdf>, accessed 16 April 2009.
- Steve Jones and Camille Johnson–Yale, 2005. "Professors online: The Internet's impact on college faculty," *First Monday*, volume 10, number 9, at <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1275/1195>, accessed 17 April 2009.
- Michelle Lamberson and Brian Lamb, 2003. "Course management systems: Trapped content silos or sharing platforms?" In: Catherine M. Gynn and Stephen R. Acker (editors). *Learning objects: Contexts and connections*, pp. 59–75, and at http://learning-objects.net/downloads/Theory/Context_Connections.pdf, accessed 17 April 2009.
- Lisa M. Lane, 2007. "The results are in: CMS and pedagogy," *Lisa's Online Teaching Blog*, at <http://lisahistory.net/wordpress/?p=57>, accessed 8 June 2008.
- Glenda Morgan, 2003. "Faculty use of course management systems," *Educause Center for Applied Research*, at http://www.educause.edu/ir/library/pdf/ecar_so/ers/ers0302/ekf0302.pdf, accessed 1 May 2007.
- Alex Reid, 2006. "The challenge of information literacy? The faculty," Digital digs blog post, at http://alexreid.typepad.com/digital_digs/2006/10/the_challenge_o.html, accessed 17 April 2009.
- Christophe Renaut, Christophe Batier, Laurent Flory and Martine Heyde, 2006. "Improving Web site usability for a better e-learning experience," In: A. Méndez-Vilas, A. Solano Martín, J.A. Mesa González and J. Mesa González (editors). *Current developments in technology-assisted education*. Badajoz, Spain: FORMATEX, pp. 891–895.
- Gayani Samarawickrema and Elizabeth Stacey, 2007. "Adopting Web-based learning and teaching: A case study in higher education," *Distance Education*, volume 28, number 3, pp. 313–333. <http://dx.doi.org/10.1080/01587910701611344>
- Lucio Teles, 2002. "The use of Web instructional tools by online instructors," *The Technology Source Archives* (May/June), at http://technologysource.org/article/use_of_web_instructional_tools_by_online_instructors/, accessed 30 June 2008.
- Tufts University, Information Technology Services, 2006. "Blackboard survey," at <http://ase.tufts.edu/its/blackboard/bbsurvey2006.htm>, accessed 9 May 2007.
- Greg Walker and Nancy Johnson, 2008. "Faculty intentions to use components for Web-enhanced instruction," *International Journal on e-Learning*, volume 7, number 1, pp. 133–152.
- Van Weigel, 2005. "From course management to curricular capabilities: A capabilities approach for the next generation," *EDUCAUSE Review*, volume 40, number 3, pp. 54–67, and at <http://www.educause.edu/ir/library/pdf/ERM0533.pdf>, accessed 17 April 2009.
- Richard E. West, Greg Waddoups, and Charles R. Graham, 2007. "Understanding the experiences of instructors as they adopt course management systems," *Educational Technology Research and Development*, volume 55, number 1, pp. 1–26. <http://dx.doi.org/10.1007/s11423-006-9018-1>

Editorial history

Paper received 22 May 2009; accepted 28 August 2009.

Copyright © 2009, *First Monday*.

Copyright © 2009, Lisa M. Lane

Insidious pedagogy: How course management systems affect teaching
by Lisa M. Lane

First Monday, Volume 14, Number 10 - 5 October 2009

<http://firstmonday.org/ojs/index.php/fm/rt/printerFriendly/2530/2303>