Course Management Systems in the College Classroom

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Abstract

The implementation of Course Management Systems (CMS) in higher education offers both students and faculty unprecedented access to course content and related resources. However, this rapidly changing field often prohibits adequate time for end-users gain a working knowledge of a specific system. But aside from issues of usability, CMSs present pedagogical challenges in that its architecture is not very flexible and often forces instructors to adapt their teaching methods to fit the static design of the CMS, rather than the other way around. This literature review examines these issues and offers suggestions on how instructors may more effectively build and deploy CMSs in their respective fields of study.

Ubiquitous computing and the emergence of Web 2.0 technologies have left an indelible mark in the academic arena, particularly in how courses are designed and delivered. Discussions related to Course Management Systems (CMS) or Learning Management Systems (LMS) pervade the academic discourse on college campuses today. The discourse among faculty often presents opinions of two minds: the first embraces the CMS and is eager and willing to leverage this resource. However, the second is more resistive or skeptical towards the use of CMSs and
may challenge its academic merit. Regardless, the fact remains that most all colleges and universities are tied into some type of CMS, the most notable and, incidentally, the most widely adopted, is Microsoft’s Blackboard. Perhaps no other innovation in higher education has resulted in such rapid and widespread use as the CMS (Harrington, Gordon, & Schibik, 2004). By 2002, over three-quarters of all colleges and universities in the U.S. had adopted a CMS and nearly one-fifth of college courses used a CMS (Campus Computing Project, 2002). But the rapid adoption and development of such tools poses several problems when it comes to classroom practices and pedagogy. Are instructors using Blackboard or is Blackboard using instructors? Likewise, frequent changes and updates frustrate a large percentage of faculty who are trying to “keep up”. But the changing digital landscape of higher education demands that such systems thrive and for this to occur, instructors must have at least a working knowledge of these systems and, moreover, how to effectively integrate features into their own courses. But before examining possible solutions to this problem, it is important to first define a Content Management System and describe the core components to such a system.

In a recent issue of *TechTrends*, educators Andri Ioannou and Robert D. Hannafin (2008) define a Course Management System as “software systems designed to manage course content and course activities…to design, deliver, and manage an online course.” While no longer relegated to online or distance learning, most systems offer users standard tools such as course content areas, discussion forums, assignment drop-boxes, and a grade book among many others. There are many kinds of course management tools, and they all function a little differently, but two main companies have dominated the CMS market: Blackboard and WebCT. Each is now being used by over 2,000 different academic institutions (Arnone, 2002; Pollack, 2003), but in 2006 these two companies merged and now collectively control the vast majority of
the CMS market. As this system has grown in both popularity and use, there has also been some research into the potential impacts that using these tools may have on learning outcomes (Hutchins, 2001; Klecker, 2002; Massimo, 2003; Morgan, 2003; Pollack, 2003; Vessell, 2001; Yip, 2004). However, there is little research directly studying the adoption and diffusion of CMS technologies in higher educational contexts and what research exists is narrow in its scope.

The rapid advances in CMSs have outpaced changes/adaptations in pedagogy which presents a fundamental problem facing educators today. Lisa Lane, educator and founder of the Program for Online Teaching at Mira-Costa College in Oceanside, CA, clearly describes this problem in that “[t]he default design of commercial course management systems limits instructional creativity and pedagogical approaches” (2008). This begs the questions then of how can faculty better leverage the capabilities of current CMSs, and, in turn, enhance their own teaching practices and overall student experience? To address this, one must first identify the key issues at stake with regards to CMSs and then look at possible solutions. Keys to success lie in the areas of usability, experimentation, and faculty training.

Usability

The what-you-see-is-what-you-get (WYSIWYG) interface makes CMSs easily accessible to users and does not require an extensive knowledge of computers or web programming. Still, many critics argue that systems such as Blackboard, which accounts for roughly 67% of CMSs on college campuses today, are too rigid in their design which suppresses an instructor’s creativity and teaching style. Many educators simply use Blackboard as a file repository and medium for distributing and collecting course material. Clearly the programmers at Microsoft and others designed systems like Blackboard to do much more, as evidenced by the many modular components of the CMS. But the problem lies in better matching the tools and
resources available to an individual instructor’s needs and style. On one hand this seems improbable, and to an extent it is. Certainly no system will ever be “perfect” but it can be much more accommodating to a wider range of users.

Gerard Nijhuis and Betty Collis (2005) effectively illuminate this growing problem in the article “How can academics stay in control?” In it, Nijhuis et al. argues that “[s]tudy programs and courses are being transformed to online versions and instructors have to adapt their work behavior to offer their courses online and interact with students in an asynchronous way. The use of Course Management Systems (CMSs) such as Blackboard…can greatly facilitate distance education and blended learning (Collis & Moonen, 2001), but instructors have to first learn how best to offer their courses using such a system and then become efficient at managing their time and teaching related activities involving the system” (2001). These two scholars then embarked upon a multi-method research project to investigate how instructors can be supported when performing teaching-related activities in this climate of changing expectations. Their study surveyed instructors and administrators from six European universities and conducted extensive research about these challenges and offer some solutions to better integrate technology and pedagogy. This study also revealed that the implementation of a CMS should be the most important consideration facing administrators arguing that “a careful implementation process is essential to make this kind of support tool part of daily routine for instructors” (Nijhuis et al., 2005). The finding also point towards instructors themselves and suggests that they take final responsibility for their personal performance. Representative of the recommendations for individual instructors is:

Instructors should plan their time in a systematic way, not only for face-to-face sessions, but also for teaching-related activities done at their desks, particularly
for managing a CMS. Times for management should be controlled as carefully in the instructor’s agenda as are times for classroom sessions (Nijhuis et al., 2005).

In “Understanding the experiences of instructors as they adopt a course management system”, West, Waddoups, and Graham (2006) surveyed instructors at Brigham Young University in order to identify how extensively they used a CMS in their daily teaching. They found that when instructors are presented with a CMS, instructors make “three possible decisions: (a) continuation, where they decide that Blackboard is a useful tool for their needs and gradually grow more and more dependent upon the tool; (b) reduction, where they decide to use Blackboard only minimally, and do not feel tied to the tool but open to other options; and (c) discontinuation, where instructors reject Blackboard and seek other options for their online instructional needs” (West et al. 2006). Further, these researchers point out that these patterns/events do not necessarily happen linearly. Some instructors approach the implementation of a feature of Blackboard by first considering the integration challenges. For others, the technical challenges are much easier to overcome, and they approach the integration and technical challenges simultaneously. Understanding these different processes associated with the implementation of Blackboard can provide insight into why some instructors seem to use Blackboard more effectively than others, and how universities can better support and train instructors to use educational technologies (West et al. 2006).

What do students want?
Just about all college courses present students with surveys near the end of each term. This long standing practice has proven to enhance both teaching and learning, and often helps develop new classroom practices and enhancements to the course itself. But most large institutions often draft up standard course surveys to use across the boards. However, this “one-size fits all” approach to student surveys often ignores course specific details. Likewise, these surveys often give only a cursory nod towards information technology and its role in the classroom. Some surveys allow instructors to add their own questions, but this practice is random and varied. Thus, very little is known about what students actually want in terms of technology in the classroom, particularly through the use of CMSs. Published in the 2009 ECAR Study of Undergraduate Students and Information Technology, Caruso, Judith Borreson, Shannon Smith, and Gail Salaway (2009) conducted a thorough survey of college students focusing on information technology (IT). Of the surveys many findings revealed that students perceive that more instructors need to use IT more effectively in courses. “Every year, in the focus groups and open ended comments, students praise and complain about instructors’ use of technology in their courses. In the 2009 study, 45% of students perceive that most or most all of their instructors use IT effectively in their courses. In their comments, students emphasize the importance of balance between the use of technology in instruction and the value of classroom interaction. They desire engagement with their instructors, but they also want access to course materials online. Many of them observe that instructor skills with technology could be improved” (Caruso et al. 2009).

Experiment
A large majority of college instructors have well-established pedagogical practices which they have relied upon successfully for years. The notion of adapting these practices in part for use in a CMS often creates instructor resistance for a variety of reasons. Yet, as education advances in the 21st century, instructors too must “adapt and overcome” to some extent. The all too often sentiment on those resistive to new technology is the complaint of “I just do not understand it” or “I do not have the time for this thing.” Just as educators are encouraged, and often required to engage in some type of professional development, instructors must expand this notion from predominantly the scholarly domain and commit to further development in the technological domain. Many times this is much easier than one imagines, and studies indicate that when instructors are able to overcome some of the integration challenges and setbacks [of a CMS], and if they think that they have found a successful way to integrate a feature of Blackboard into their instruction, they often feel a rewarding sense that they have succeeded a little more as an instructor (West et al. 2006).

Recommendations

Most college professors implement a CMS into their courses to some degree. The 21st century college student expects access to the latest technological resources in their education just as they have grown accustomed to access to other technologies such as cell phones, instant messaging, and the World Wide Web. To today’s student, an environment void of these familiar resources appear “old fashioned” or “dated”. College students today have more choices than ever when choosing a college, and what university administrator wants their institution to be known as “technologically dated”? Likewise, soaring tuition costs in higher education forces students, and parents of students, to more closely examine an institutions valued-added
services—one of which is the robustness of an institution’s technology infrastructure and resources provided for students such as a CMS. Therefore, the tough questions facing administrators today is not whether or not to use a CMS, but, more importantly, how to maximize instructor deployment and implementation of the institution’s CMS of choice. Research indicates that this is best achieved through a combination of centralized faculty training along with decentralized peer-to-peer instruction. In the BYU study, West and his colleagues found that centralized training is not always the best choice, and that instructors learn a great deal from their own students and peers.

Specifically, we learned that instructors began the adoption process through learning about the CMS, often through their students or colleagues. While being persuaded by these peers, instructors usually adopt a CMS for only one or two of its features with the goal of doing what they already do more efficiently. They then experiment with the CMS, and at this stage of the process, intuitive usability is crucial because the instructors have not yet committed themselves enough to the tool to spend the time to “be trained.” This finding may indicate why training so often does not lead to successful adoption/integration of a technology. (West et al. 2006).

In addition, there are many research studies published with the goal of improving faculty training (Ali, 2003; Bennett & Bennett, 2003; Fitzgibbon & Jones, 2004; Irani & Telg, 2001; Kagima & Hausafus, 2001; McCarney, 2004), but perhaps institutions should study how to
provide more fertile opportunities for experimentation as this often occurs before training and may indicate the likelihood of successful CMS adoption.

In conclusion, additional research is still needed in determining how important it is to adapt a CMS for individual instructors. As software becomes more scalable and user-driven, CMSs will likely continue to provide more flexibility to instructors. However, from a software development standpoint, developers such as Blackboard’s Microsoft design their products to appeal to a large and diverse audience. The “one-size fits all” approach may not completely disappear, but it can, and must be softened enough to attract educators at all levels. Rogers (2003) argues that re-invention of an innovation leads to a faster rate of adoption and a higher degree of sustainability. He also posits that it is possible for flexibility to be designed into an innovation, like a CMS, to allow for better adaptability. Likewise, West et al. (2006) argues that “[d]esigning more flexibility into CMS tools may be critical because there are different instructional theories, whether implicitly or explicitly acknowledged, that are employed at a university, and the best method for matching a single tool to all of these instructional methodologies may be for instructors to be able to adapt the tool to fit their unique situations.” But while CMSs such as Blackboard continue to offer an enormous array of teaching resources and tools, it is important to remember that Blackboard is not the instructor. Instructors must never undervalue the importance of face-time with students in a traditional classroom setting. Course Management Systems are just another advance (albeit a big one) in educational technology. Like those in the past, these advances must be thoroughly considered and implemented carefully into traditional pedagogy. Ideally, a CMS compliments a given course in new and meaningful ways, yet it does not replace the value and knowledge of the actual instructor.
References


