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LEARNING MANAGEMENT SYSTEMS IN HIGHER EDUCATION: FAST-PACED CHANGE AND INSTITUTIONAL RESPONSES – A CASE STUDY AT UAB

R. O'Beirne[1] and Scott Brande[2]
[1]Department of Instructional Technology
[2]Department of Chemistry
UAB
Birmingham, Alabama 35294, USA

ABSTRACT

The pace of technological change exerts powerful influences on dynamic systems in higher education, including the development of administrative policy, allocation and deployment of scarce financial resources, faculty-driven course content and delivery, and student demand and use of computer networks, among others. Nowhere else is such acute pressure felt than the core roles of higher education, in teaching and learning. In this case study, we examine forces that drive the evolution of some education technology at a large, urban university, and resulting manifest challenges and opportunities. We find that limited resources are only one of a number of factors that constrain responses to technological change, and that the speed of change itself may be a more important barrier to faster progress.

INTRODUCTION

Seismic shifts in the demographics of the university student and rapid advances in modes of delivery present two huge challenges to the University of Alabama at Birmingham (UAB) as it attempts to position itself as a regional institution, further develop its culture of interdisciplinary research, and cultivate a national reputation. Market-driven developments in the broad education technology environment have impinged upon the institution's ability to control change in any measured way and further retarded its ability to keep pace with technology-mediated education efforts. Blackboard[1]'s acquisition of major rival WebCT signaled the beginning of the end for the latter's platform. Blackboard's decision to discontinue support for the WebCT product line in 2012 has forced a migration path from Vista CE4 to Vista CE8 and finally to Blackboard Learn. This has had a cascading effect on required changes to additional technology tools supported by UAB's central Information Technology department, along with the multiple tools and systems used by individual faculty in their courses. The institution, already lagging in technology implementation both in its home state and nationally, risks falling farther behind.

Additional complications result from standard thinking within the instructional technology department and across the institution as a whole with respect to the student body. Prevailing wisdom suggests that training efforts be focused on developing faculty capabilities with new technology, and that the tech-savvy student body will easily and intuitively adapt to future change. However, inherent assumptions of technical proficiency on the part of the student body may be unfounded. While UAB has instituted a coordinated effort to attract a more "traditional" undergraduate student body, including increasing the ACT scores of incoming freshmen and requiring all first-year students to live on campus, it has operated primarily as a commuter school for most of its history and still serves a substantially urban community of diverse students. As a result, its student base exhibits a distinctly uneven level of information technology literacy as exposure to computer-technology is much more restricted in Birmingham city's school system compared with outlying, suburban systems. The institution must therefore simultaneously attend to the demands of technologically advanced students and the needs of those in the technological slow lane.

Further, the small scale of the centralized Information Technology department limits its ability to test, validate, and support new technology options, in part because of business contracts with Microsoft providing for the institutional adoption of the Microsoft platform of products. As a result, UAB has a limited knowledge base on other products that work on competing or open-source platforms. The explosion in open-source tools and systems has therefore left the administrators at the departmental level (and consequently large segments of the faculty who do not have access to school- or department-specific technology support and resources) with a limited set of

[1] A company whose flagship product is used by thousands of educational institutions for the management of e-learning

options in implementing innovative technology-driven teaching and learning methods.

Although the UAB professional schools (e.g., Nursing, Health Related Professions, etc.) have advanced the use of technology in their courses and programs, the college of arts and sciences - the core of the undergraduate college - faces numerous challenges in the adoption, implementation and innovation in technology. Learning management systems (LMS) are the hub around which other technologies must be deployed. Typically these systems are designed from a behavioral rather than constructivist perspective, and this is particularly applicable to goal-oriented, professional programs where objective mastery can be demonstrated. However, this type of structure does not lend itself as well to knowledge construction, and, as a result, the use of technology has not permeated as much the social sciences, humanities, and other disciplines that take a constructivist approach to teaching and learning. Critical issues identified below should be addressed to assist administrators who formulate policy that drives the development of campus technology systems.

- Where should Instructional Technology be housed - in an administrative unit (Information Technology) or an academic unit?
- What channels can be developed to complete a feedback loop that connects faculty with Information Technology experts? At present, the flow is primarily unidirectional and is focused on the support of faculty and students.
- What classes of data (faculty and student surveys of desired functions, applications, use-in-practice, etc.) would best inform policy makers responsible for directing institutional investments in technology? Does UAB have the resources and technology to collect such data? How can faculty be engaged in these processes?

As a consequence of these unsettled issues, UAB, like many other institutions of higher education, face critical challenges at a time when student enrollment in distance education courses at 2-year and 4-year institutions tops 12 million (Parsad & Lewis, 2008).

EVOLUTION AND TRANSFORMATION OF INSTITUTIONAL LEARNING MANAGEMENT SYSTEMS – A CASE STUDY AT UAB

The pace of technology change on the UAB campus during the past decade has been striking. Transitions in the various versions of the learning management systems from WebCT and Blackboard/Vista include the following. The WebCT Vista 3 platform (originally implemented in 2003) was upgraded to version 4 in May 2008, and from Vista 4 to Vista 8 in summer 2010. All of these systems were hosted on the UAB campus. In August 2010 the local hosting was moved to a Blackboard managed hosting site and plans were immediately established to move to Blackboard Learn 9.1 for summer 2011. The school of education, which originally employed the Blackboard platform and hosted it locally, moved away transitioned at the end of spring 2010 from this system, to the Vista 8 platform along with the rest of the institution. The accelerated transition between systems was due in part (though not entirely) to the impending decommission of the WebCT platform and also the accelerated adoption of communication technology used by large segments of the student population. Although the mobile Learn feature of Blackboard Learn 9.1 has the potential to extend student time-on-task, increase student collaboration and expand access to learning opportunities, the speed of implementation appears to be exceeding the ability of instructors, designers, and administrators to keep pace with these changes. In 2009, UAB offered 2200 web-enhanced, blended, online and distance courses[2]. Approximately 56% were taught by faculty who had attended one or more of the training classes offered, resulting in a wide range of proficiency in use of the LMS. Although training for faculty has been designed and deployed, many faculty feel overburdened with other teaching and administrative duties and are therefore less receptive to engage with a new learning management system that necessitates redevelopment and redeployment of already-built courses that includes:

- learning how to use the new system, and design and build course content,
- learning how to teach using the new system, and
- learning how to teach students to learn using the new system.

These challenges have resulted in a slow adoption of the new technology by faculty, especially in the absence of incentives and clearly communicated benefits. Bransford, Brown, and Cocking (2000) note that traditional modes of instruction provide limited success in transfer of learning in professional development to the work environment. Long-term sustained learning and learning in context appear particularly important in facilitating transfer of learning. Further, they note that development of a community of learners is critical to ensure effective acquisition of a body of knowledge. Moore, Fowler, and Watson (2007) found faculty development is most successful in environments applying these best practices: (1) manage institutional issues; (2) implement adult learning practices; (3) offer incentives to

[2] The institution defines these course types in terms of percent of the course time spent in a physical class environment: web-enhanced: 91-100% class time with online support materials; blended: 89 -50% class time; online: 11-49% class time; distance: less than 10% class time

participate; (4) deliver workshops; (5) utilize colleagues and peers; and (6) provide ongoing support. Such comprehensive methods are difficult to implement because of time and cost considerations (Georgina and Hosford, 2009). However, these methods are critical because faculty training appears to be more effective when faculty are afforded opportunities to explicitly reconceptualize teaching practices (approach teaching with technology as a new model), and also time to overcome misgivings about technology-mediated education practices (Schrum, 1999).

TECHNOLOGY ADVANCES, INSTITUTIONAL RESPONSES

The educational technology industry, like many high-tech sectors, has been in continuous flux over the latter half of the past decade. Although consolidation in the e-learning sector has reduced the number of major players, the more critical underlying trend is vertical integration. Larger companies such as Blackboard acquire more targeted technology tools (e.g., Wimba web-conferencing and Live Classroom suite, support companies such as Presidium) in an effort to manage the entire end-user life cycle from product acquisition and implementation to technical support for end-users. Arguments can be made for and against such trends from economic and organizational theory perspectives, but some effects on customer service at the shop-window level have been negative and have exacerbated the anxiety caused among faculty members by the treadmill of technology change. In essence, impetus from different departments within the information technology structure (e.g., the switch in LMS under discussion, outsourcing faculty and student support for the LMS, etc.), acting in isolation, converged to create a transformational maelstrom that has the capacity to overwhelm users.

This circumstance is worrisome because it is diametrically opposed to the desired consequences of adopting the new system. Major changes in the new system focus on Web 2.0 tools that promote collaboration and connectivity and emphasize information sharing and community building. Along with such tools as wikis, blogs, instant messaging, RSS feeds and mashups, the (as yet not implemented) Blackboard mobile Learn service is based on accessing Blackboard content through an interface that is native to smart phones, tablets, and other mobile devices. The thrust of this effort is to tap into the power of social networks to drive student-to-student contact, engagement, and knowledge building in an environment that is comfortable and attractive to the "typical" student. In essence, the system seeks to co-opt technologies with which users have a high degree of familiarity and comfort for educational use. However, instructors who are not properly trained nor provided reasonable incentives to learn and adapt to these systems are ill-equipped to use and promote their use.

Further, student reaction to an invasion of what was previously a peer-to-peer social virtual space remains relatively unexamined. Social network technologies have been largely untouched by the outside pressures of school, work, parental influence, and the "adult world" of task responsibility. Thus, the question of student response to this invasion should be examined more thoroughly. An even larger concern for administrators should be the potential impact of such tools on the time instructors must devote to instruction, administrative, and other course-related tasks when trying to service a generation of students more accustomed to both instant response and gratification than any previous one. What is evident is that the rate of technological change is far outstripping our ability to track and evaluate the impact of those changes on our behavior, our interaction with others, and indeed our psychological well-being. Sir Edmund Hillary's response to a journalist when asked why he wanted to ascend Chomolungma (as Tenzing Norgay may have called it) was "because it's there". This is also far too often the rationale for employing new information technology tools and systems in institutions of higher education. It would appear that a return to the basics of identifying goals, creating strategies to achieve those goals, and *then* identifying the tools and technologies that can assist in attaining them may go a long way toward ensuring the voluntary and enthusiastic participation of the campus community.

The institution would be wise to evaluate the impact of technology-mediated teaching and learning methods on both faculty and students, and to design a training program that incorporates a process to identify inevitable technology changes in the near and medium term. Such a program could advance learning in the application of technology to both teaching and learning environments, and in the process free up IT resources that can be applied to a more strategic approach to instructional technology initiatives.

CONCLUSION

In the world of business, keeping pace with competitors is a necessary (but not necessarily sufficient) condition for continued operation. In higher education, the availability of technology resources is a necessary (but not necessarily sufficient) condition for administering increasingly complex learning management systems required for the creation and delivery of digital course content. At UAB, shorter software replacement cycles have perturbed a previously slower pace of technology change, and created conflicts of need and availability within the constituencies of administrators, faculty, technology support staff, and students. Clear pathways for resolving critical issues of resources and support are not

visible in the absence of larger datasets that can inform the analysis and evaluation process. The lack of local data will not slow or reduce the transformation of digital resources in higher education, for classes have to be taught each term, and students are always in progress towards their degree goals. Optimization does not seem applicable in this shifting landscape of the external corporate world of software companies and the internal sphere of higher education. Perhaps the only path possible is to more closely track and respond to the challenges brought about by technology changes and the resulting opportunities for enhancing student learning. To direct one's effort in other directions is to lose sight of the purpose of the university – the preparation of the student for future work in an increasingly technology-rich world.

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