Effective uses for Blackboard:
Do Students and Faculty have a Shared Vision for how Blackboard should be used to Support Instruction?

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Abstract: Higher education institutions invest significant funds into licensing, support, and training for their course management systems (CMS). This study provides data about what students at a large, public university feel would be the best ways to utilize a CMS, in this case *Blackboard* to enhance their learning. The data obtained as a result of this study show that students found the posting of grades the most helpful feature. In addition, they valued communication tools such as Announcements, Class Roster, and Staff Information. Also, features in *Blackboard* that allowed faculty to disseminate class information such as study guides, course syllabi, class notes and assignment sheets. Features they found bothersome included WebAssign and Web 2.0 tools such as wikis and blogs. One of their biggest complaints was that some faculty members do not use *Blackboard* at all.

Introduction:

The *Blackboard* course management system is used by thousands of universities. Most research about *Blackboard* has focused on how to encourage faculty to use it (Bell & Bell, 2005), how to encourage use of the discussion board (Freeman & Bamford, 2004; Rovai, 2001), or how to use specific *Blackboard* features (Kirkpatrick, 2005). Little research has been done to determine how students and faculty use *Blackboard* to enhance learning. One faculty-focused, multi-institutional study examined how courses changed when they became web-enhanced and it provides the framework for our focus group and survey design (Wingard, 2004).

Online@UT, powered by *Blackboard*, is The University of Tennessee's official course management system (CMS). A CMS is an online system for managing course content, including syllabus, calendar, readings and assignments (Carliner, 2005). Such systems also provide ways to track student progress and provide space for online discussions. In the fall of 1997, The University of Tennessee commissioned a task force to review course management systems (CMS) and to recommend one for the University. The Innovative Technology Center (ITC) was given the responsibility for overseeing the task force. Faculty, staff, and administrators tested and reviewed a variety of possible CMS's and ultimately chose *Blackboard's* CourseInfo (Innovative Technology Center, 2009). CourseInfo and *Blackboard* were initially separate companies that merged and adopted the name *Blackboard Learning System*.

The University invests significant funds into the licensing, support, and training for *Blackboard*; this study provides data about how students at a large, public university report their perceptions concerning the best ways to use this tool. Furthermore, the data obtained as a result of this study will help students, faculty/instructors, and *Blackboard* developers understand how *Blackboard* is currently being used to enhance instruction and discover possible ways that it could be used even more effectively.

Methodology

The purpose of this study was to answer the following two research questions about the use of *Blackboard* at The University of Tennessee:

1. What faculty uses of *Blackboard* do students value as most effective/least effective in enhancing their learning?
2. From a student's perspective, which uses of *Blackboard* are helpful and which are bothersome?

Participants

A focus group of five undergraduate students was conducted to gain a basic understanding about what students like and dislike most about faculty use of *Blackboard* and how various uses of *Blackboard* do, or do not, support learning. Using input from the focus group, a survey was designed and piloted with a group of 200 undergraduate students (not those in the focus group or final sample). Of the 200 undergraduates contacted, 24 students participated in the pilot version of the survey. Based on the results and input from the pilot survey, a final survey with nine demographic items (required), 12 open-ended items (optional), and 56 Likert-scale items (required) was created. The Cronbach's alpha for the Likert items in the final version of the survey was .93. To gain a better understanding of undergraduate students' perspectives on the use of *Blackboard* open-ended questions were placed at the end of each section of the survey. LimeSurvey, an open source software package, was used for both the pilot and the final versions of the online survey. The resulting final version of the survey was deployed to 8,000 students (2,000 from each class, freshman, sophomore, junior, and senior) at The University of Tennessee-Knoxville, by sending an e-mail message containing a link to the survey to each student's campus e-mail address. A total of 1109 students (14%) completed the survey.

Instrument

The first section of the survey gathered demographic information about the students that participated in the survey. The second section consisted of 19 Likert-scale items that asked students to rate what features in *Blackboard* they liked or disliked their professors to use. These items were based on a five point Likert-scale of agreement plus a never used option. The third section provided students with the opportunity to answer open-ended questions about how professors use *Blackboard* in ways that were helpful to their success in class. Also, they were asked to explain how professors use *Blackboard* in ways that were not helpful to their success in class. Sections two and three were used to gather information that would answer research question two: From a student's perspective, which uses of *Blackboard* are helpful and which are bothersome? The fourth section of the survey consisted of 28 Likert-scale items that asked students what faculty uses of *Blackboard* they valued as most effective/least effective in enhancing their learning. These items were based on the same six point Likert-scale used in section number two. The fifth section of the survey was used to gather information about the Discussion Board, a feature in *Blackboard* that was one of the main topics during the focus group, and one that students spent a lot of time discussing during that session. This section consisted of two open-ended question asking students to give examples of ways they liked and disliked professors' use of the discussion board. The sixth section consisted of 9 Likert-scale items used to ask students how *Blackboard*-using and non-*Blackboard*-using courses were comparable. These items were based on the same six point Likert-scale used in sections two and four. Section four, five, and six were used to gather information that would answer research question number one: What faculty uses of *Blackboard* do students value as most effective/least effective in enhancing their learning? The seventh and final section consisted of three open-ended questions asking students to describe any features they wished were available using *Blackboard* that *Blackboard* does not currently offer, other course management systems their professors at UT used, and in general any comments they would like to make.

Data Analysis

Using Statistical Package for the Social Sciences (SPSS), survey data were analyzed using frequency tables and descriptive statistics. Analysis of open-ended question was carried out using QDA Miner and WordStat software.

Findings:

Demographics

The average age of participants was 21.3 years old. The breakdown by gender was 61% females and 39% males. Respondents were fairly equally distributed by class (Freshman 27.9%, Sophomore 24.9%, Junior 26.2%, and Senior 20.1%, Other .9%). Most students (76%) indicated that they were taking 4-6 classes during the spring semester 2009. Of those that were taking classes, 957 (86%) indicated that at least 2 of their classes used *Blackboard,* while only 19 (1.7%) indicated that none of their classes used *Blackboard.*

Student Use

In the first section students were asked to describe how frequently they used *Blackboard* and what features they accessed. As seen in Table 1, almost three quarters of students logged in at least daily and over half accessed *Blackboard* more than once daily. A large majority (80%) reported checking their grades, and many of them listed that activity first. Wanting grades posted in a timely manner was a consistent theme reflected in the data. The most typical usage pattern of students was to check grades, access course materials, and check for announcements.

	Frequency	Percent
Once a day	291	26.2
Once a week	43	3.9
2 to 3 times a week	227	20.5
2 to 4 times a day	430	38.8
5 or more times a day	78	7.0
A few times during the semester	32	2.9
Never	8	.7
Total	1109	100.0

Table 1: On the average this semester how often do you log-in to *Blackboard*?

Blackboard Features

The next section asked students to rate various Blackboard features. The prompt was *I like it when my professor uses the following features.* The complete list was culled somewhat after the pilot version of the survey. A 5-level Likert agreement scale was used (strongly agree, agree, neutral, disagree, strongly disagree) with an additional never used item. Table 2 shows the mean scores of their reported liking of various features. Never used responses were omitted from the analysis and the raw numbers of students reporting using the feature is also shown in Table 2. Students were very fond of the Gradebook and Announcements. Also highly rated were several features that require no instructor input---the Roster, Staff Information, eMail and Messages features. Notable is that on the whole students liked all of these features, with the least-liked feature rated neutral, so it can be inferred that they do seem to like using *Blackboard.*

Feature	N	Mean
Gradebook	1079	1.14
Announcements	1080	1.62
Roster	937	1.72
Staff Information	888	1.78
eMail	981	1.78
Messages	766	1.97
Tasks	713	2.09
Quizzes	841	2.10
Calendar	569	2.13
For submitting assignments	886	2.31
Personal Information	675	2.33
Digital Dropbox - For storing assignments	744	2.41
Group Pages	528	2.42
Creating a personal *Blackboard* Homepage	538	2.49
Discussion Board/Forum	851	2.63
WebAssign	629	2.64
Wiki Tool	338	2.75
Classroom Performance System (Clickers)	700	2.97
Blog	513	3.09

Table 2: Features most/least liked by students

The next section of the survey asked students open-ended questions about what practices they liked and disliked. The qualitative analysis of these open-ended items corroborated the quantitative findings. The most frequent responses to the open-ended items included positive mention of, (a) grades, (b) assignments, (c) class notes, (d) announcements, and (e) PowerPoints. Timely posting of grades was very important to these students; 51% of the 917 responses included such comments, using words like updated promptly, regularly, constantly, very quickly, frequently, and the next day. Thirty-nine percent of the students that commented about assignments said they appreciated professors that kept the assignments updated regularly, all in one location, in sequential order, and posted far enough in advance to enable students to complete assignments. Some students commented that their professors took into account the fact that many students have jobs and, consequently, posted assignments well in advance of the due date. Nineteen percent of students that responded to this question liked class notes to be posted in a timely fashion and for professors to email them when the class notes were available. Many students appreciated professors posting class notes and PowerPoints far enough in advance so they had time to print them before class. Nineteen percent of students appreciated professors that used the announcement feature in Blackboard to remind them about class changes, grades being posted, and assignments coming due. They also liked professors who posted regularly, and kept announcements updated and logically organized.

Conversely, responses to open-ended items about practices students did not like included issues dealing with (a) grades, (b) quizzes, (c) assignments, (d) announcements, (e) syllabus, and (f) class notes. As for grades, students did not like it when professors *did not* use the grading center, posted grades very late, did not use the weighted grade feature correctly, and did not know how to make *Blackboard* show the final breakdown of their grades. Students did not like the quiz feature for essay and open-ended questions. For such questions, students stated there were too many technical problems with the quiz feature, causing their computers to crash and lose large amounts of data they had spent a considerable amount of time writing. Furthermore, some professors would make quizzes available for only a short period of time and students who worked evenings often could not find time to take them. When it came to assignments students did not like it when professors did not use the assignment feature, when they posted assignments in different locations, and posted assignments right before they were due. In addition, students did not like it when a professor did not send an email notifying them of assignments being posted. They did not like it when professors did not use the announcement feature in *Blackboard*, did not keep the announcements in any type of chronological order, and posted right before class or right before something was due. They also did not like it when professors did not notify them by email when an announcement was posted. In addition, several students commented that they did not

like it when the announcement feature was overused. Three students mentioned receiving forty announcements in seven days for one class! Last, students did not like it when professors did not post their syllabus or made changes to the syllabus after the semester had begun. Many commented they had professors who would make numerous changes to the syllabus without any notification to students. In addition, students did not like it when professors did not post class notes, did not post them in a timely fashion, or posted them only an hour before class. Students stated that they did not have time right before class to print out the notes and would appreciate them being available far in advance since printers may not always be readily available in all buildings or be functioning properly.

A theme emerging from this data was that students liked professors who used Blackboard, were cognizant of students' time, and posted promptly, consistently, and in a timely fashion. Moreover, they liked it when professors emailed them about changes, and kept information in an organized, central location.

Discussion Board

Unlike providing access to grades, assignments, and class materials, which students commended overwhelmingly, the responses to the use of forums were considerably more varied. Sometimes forums were reported to be a good way to start conversations or continue conversations that began in the classroom, other times, forums were said to duplicate what already happened in class or resulted in students participating in ways that seemed forced, unnatural, or unnecessary. Seventeen percent of students answered an open-ended question asking what they liked about online discussions. Students liked for professors to use the discussion board to (a) discuss readings, (b) discuss homework, (c) review for tests, (d) practice foreign language, (e) extend and expand on class discussions and lectures, (f) extend and expand on key concepts and key points, and (g) allow students to post questions for the professor or other students to answer.

Ten percent of students responded to the question about discussion board uses they disliked. Student dissatisfactions were indicated by comments like "I did not get my questions answered," "many students did not participate," "professors did not participate," "students did not stay on topic," "discussion was about an unrelated topic not pertaining to class," (Pfaffman, McCoy, & Sutton, 2009, p. 14). Also, students who were required to post and reply a certain number of times frequently reported that it was "busy work," especially when the professor did not bother to comment on their posts. Finally, students stated that often the discussion had already been carried out in class and they felt it was a waste of time to repeat the same discussion online.

The theme indicated by this data is that students liked the discussion board if professors used it to extend and expand on a class discussion, key concept, and/or lecture and not as a repetition of topics already covered in class. Students also appreciated it when professors acknowledged the amount time students had to spend posting, replied to students' posts, and kept the discussion focused and organized.

How Blackboard Enhances Learning

The next section of the survey asked students to comment on how *Blackboard* enhanced and/or did not enhance their learning. Students stated *Blackboard* enhanced their learning when professors posted study guides, a course syllabus, an assignment sheet, and key concepts of lectures. Qualitative analysis of the open-ended items about how *Blackboard* enhances learning again supported the findings of the quantitative analysis. In addition to feeling that the posting of grades enhanced their learning by keeping them up to date and informed about their grades and standing in the class, students valued having notes and information about assignments posted on *Blackboard*.

How Blackboard Inhibits Learning

In their overall comments made about how Blackboard is used in ways that does not enhance learning students stated they did not like it when professors did not post grades, the syllabus, assignments, class notes, and/or use the announcement feature. Students were especially critical of professors who did not use the grading center, did not post grades promptly, did not enter grades correctly, did not use proper headings in the grade book, or did not weight grades properly.

Students had several concerns with and when professors posted class notes. They did not like for professors to post notes after class, when they were not posted far enough in advance, and when they were posted in different

areas of *Blackboard*. In addition, students said it was problematic when professors did not post assignments, posted them too late to be completed, did not email the students to notify them an assignment had been posted, posted assignments inconsistently, and did not clearly state due dates. Students also commented that blogging did not enhance their learning and felt like it was busy work especially when the professor did not bother to comment on their blogging. Finally, students commented that WebAssign did not enhance their learning because the interface was too confusing, it was time consuming, frustrating, and annoying to use. They believed additional training for students and professors would help improve the use of this tool.

Conclusions and Recommendations

Students would like for all professors to use *Blackboard*. They felt that *Blackboard* helped them manage their course activities, helped them be better organized, and facilitated communication between students and instructors. They would like the grading center to have easier access, perhaps by putting a button on the main page that links directly to the grades. They would like to see grades for all courses they are taking during a semester to be on one page, and maybe have an informal type of transcript so they can see their grades for all courses attempted/completed. They would like it if the grading center would automatically email them or, better still, send a text to their phones when professors posted grades. Additionally, they would like the Blackboard calendar to be easier to use and to sync with their calendars in Outlook, Google, email and mobile devices. Students would like a chat or instant message feature they could use through Blackboard with all students. Finally, students want the registrar, email, and *Blackboard* all to be on one page rather than many different pages because they are what students use the most. The emerging themes from this data show that students want information in one central location, organized, posted promptly, and easy to access.

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