

Assessing Blackboard: Improving Online Instructional Delivery

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Abstract

Universities and colleges have been offering online classes without assessing the tools used for online learning management to determine student perceptions. An understanding of the benefits and concerns as perceived by the student population is essential to implementing an online education environment that is conducive to a student's learning. This paper provides a quantitative assessment of Blackboard, an online learning management system (LMS), at a small rural Mid-Atlantic university. A survey was distributed to 119 undergraduate and graduate students to discover their perceptions of the benefits and drawbacks of the technology. This survey was based upon a study that was conducted at the University of Denver in 2006. The results of the survey were analyzed to understand the students' perceptions of this technology and to identify areas for improvement.

Keywords: University, Blackboard, Online, Learning

1. INTRODUCTION

Universities and colleges have strived to improve instructional techniques and methodologies to enhance the learning experience for the students. Distance learning enables universities to make learning accessible to larger student populations. Online programs and courses make learning accessible to students who are unable to physically attend classes on campus. Factors such as distance, cost, time constraints, job requirements, and family demands, can preclude students from attending traditional classes. Online courses enable students to balance the

demands of their daily lives by setting their own schedule for learning.

Educational institutions all over the world offer classroom instruction via web-based learning management systems. As of March 2010, it was determined that one in every four students registers for online classes (Allen and Seaman, 2010). Given this growing demand for online classes, it is important for universities and colleges to implement online learning tools that are effective from the perspective of the students. For the purpose of this study we will assess students' perceptions of the benefits and drawbacks of Blackboard, an online learning management system (LMS).

2. LITERATURE REVIEW

Online learning is increasing at a rapid pace. Advances in technology and the Internet have changed the way people access and use information. A recent 2010 higher education study conducted by Allen and Seamon on the state of online learning in higher education in the United States revealed that over 4.6 million students were taking at least one online course during the 2008-2009 fall semesters. This reflected a 17 percent increase from the previous year. The 17 percent growth rate for online enrollments far exceeded the 1.2 percent growth of the overall higher education student population (Allen & Seaman, 2010). This trend shows that an increasing number of people are enrolling in distance learning programs to complete their degrees in order to compete in today's job market and to advance in their careers.

Dorado, et al. (2009) conducted an exploratory study of factors that influence a student's decisions to take online courses. The study examined four key elements: convenience, level of difficulty, effectiveness, and social interaction. Convenience and effectiveness were both perceived by students as a positive influence in their decision to take online courses. Level of difficulty and social interaction were perceived by students as negative influences in their decision to take online courses. The study revealed that convenience was the major factor that influenced a student to take online courses.

In her 2008 study of student perceptions of various components of the Blackboard e-learning system at a historically black, rural university, Buzzetto-More (2008) found an increased level of communications and interactions in online classrooms. Of the 121 students that completed the study, 63.5 percent indicated increased learner-to-instructor interactions, 61.9 percent agreed that there was a significant increase in the overall volume of communications in the online classroom, and 52 percent revealed that the e-learning website fostered community in the classroom. The students liked the functionality of their e-learning system: 78.1 percent of the respondents indicated that the hyperlinked calendar was particularly valuable, 79.9 percent considered lecture notes to be valuable, and 80.9 percent agreed that e-learning systems make the classroom handouts readily available and accessible. The respondents also found online learning to be

effective and accessible: 68.2 percent specified that the online discussions helped them to understand and assimilate the course content and 79.8 percent preferred submitting assignments online.

A study conducted by Hannay and Newvine (2006) indicated that students prefer online education, because it allows them to balance their life demands while going to school. The researchers sought to determine the reasons for the students' interest in distance learning. Students could select more than one option as the basis for their decision to attend an online program. Twenty percent of the participants chose distance learning, because the courses necessary to complete their degrees were only offered at limited times in the brick and mortar campuses but were scheduled more often in the world of online education. Approximately 88 percent of students chose distance learning, because they had other commitments that precluded them from physically attending courses on campus. The study also indicated that 59 percent of students surveyed reported that their grades were higher in distance learning than traditional courses, and 70 percent of students indicated that they preferred online courses. A particular interesting finding of the study was that 90 percent of students read the textbooks associated with their online courses as compared to just 60 percent of students that read the textbooks in traditional classes.

According to Blackboard (Blackboard Inc, 2000) students have enhanced learning experience when using the online tools associated with its web-based learning management system. The web-based tools available in Blackboard to enhance communication and interaction between class members and faculty include discussion boards, email, and chat rooms. The online forums enable students to share their perspectives and experiences with their peers and their instructors. Blackboard enables instructors to adapt their assignments, discussion boards, and other teaching materials to the various learning styles of the students by including interactive graphics, audio, and video. Blackboard makes course materials available to students twenty-four hours a day, seven days a week, allowing students to access their education at their convenience. Students can balance the demands on their time and also maximize the classroom experience.

The University of Denver's Center for Teaching and Learning's Courseware Faculty Advisory Board (CFAB) completed a study on their utilization of Blackboard. The Board (The Center, 2006) distributed a survey via email to approximately 8,000 students who had at least one instructor that utilized Blackboard to assist with courses. A total of 1,821 students completed the survey. Approximately 51 percent of the students reported using Blackboard in 75 percent of their classes. The students reported that the weekly announcements and grade book were the most useful tools in Blackboard. Nearly 90 percent of students attested that Blackboard was an excellent web-based tool. Fewer than two percent of the students reported having had a bad experience with Blackboard.

The number one reason that students from the University of Denver study liked Blackboard was the access to the course materials at all times. They also perceived that there was a high level of communication with their instructors. Other benefits included the immediate access to their grades, improved class discussions, and the ability to view assignments. Approximately 82 percent of students preferred courses that utilize Blackboard or other web-based tools as compared to just 10 percent of students that did not (The Center, 2006).

The Board also focused on determining the perceived faults and drawbacks of courses that use Blackboard. The major drawbacks identified were the instructors' lack of knowledge of Blackboard, the inconsistent use of Blackboard, technology problems, access issues, and lack of exploitation of Blackboards' full functionality (The Center, 2006).

The study sought to determine the features that students would like to have Blackboard change, as well as, the tools or features they would like to see implemented. The most common enhancements that students desired included email alerts when content had been changed or added, an improved digital dropbox for students to submit their assignments, and an enhanced discussion board interface.

Lastly, the students were asked to identify the Blackboard features or tools that should be implemented in the classroom. These features included the email and notification system, access to the class roster, the course calendar and the chat tool (The Center, 2006). Some of the tools that the students wanted to see added

to Blackboard already existed; this lack of knowledge indicated that additional training would be beneficial to the students.

3. METHODOLOGY

Online classes enable universities to reach students all over the world. The online environment offers unique advantages over traditional learning environments; it allows students to access the classes at their own convenience day or night. The purpose of this study is to assess students' perceptions of the benefits and drawbacks of Blackboard, an online learning management system.

This study explores the following research questions:

RQ1: What features of Blackboard are students using in their courses?

RQ2: What are the benefits and drawbacks of Blackboard?

RQ3: What modifications to Blackboard will be beneficial to the students' learning experience?

This study examined student perceptions of Blackboard, an online learning management tool, at a small rural Mid-Atlantic University during March 2010. This study utilized a quantitative methodology to assess the benefits and drawbacks of Blackboard. The population chosen for the student survey was comprised of undergraduate and graduate students.

Undergraduate and graduate students were surveyed in order to gather data from students 18 years of age or older. The survey was conducted using Survey Monkey, an online survey tool; it was made available to 9,017 students from March 18, 2010 through April 19, 2010. A total of 119 residential and non-residential students completed the survey.

The survey questions focused on obtaining information from students who had used Blackboard. The majority of the survey was developed from a partial replication of a 2006 (The Center, 2006) *Blackboard Student Survey Report* conducted at the University of Denver. The researchers developed additional questions to obtain insights that were not captured in the original study. The survey results were analyzed using SPSS, a software tool for statistical analysis. This study used Chi-square with a statistical significance at the .05 margin of error with a 95% confidence level to determine student's perceived benefits and drawbacks of Blackboard. Statistical frequencies were used to

determine the basis for the student's use of Blackboard as well as the benefits and drawbacks of using the online learning management tool. The study used a convenience sample, surveying students from the School of Arts and Humanities, Business, Science and Math, Engineering, Computer Science, Information Technology, and Psychology.

The survey instrument consisted of 15 closed-ended questions (some allowing the optional open-ended response "other") and 1 open-ended question. The first four questions focused on student demographics, which included, gender, age, education and degree program. Question five, a contingency question, asked students if they had taken any online distance learning classes. If the students answered yes, they continued to question six, which asked if they had used Blackboard in particular. If the students answered yes to using Blackboard, they were to continue with the survey. If the answer was no in either of these questions, they were instructed to stop answering the questions and exit the survey. In other words, students that had no prior experience with using Blackboard were precluded from filling out the survey. Questions 7-9 focused on the tools and features used, and questions 10-12 assessed students' satisfaction. Questions 13-15 addressed the benefits and drawbacks of using the online assessment tool. The final question was designed to elicit an open-ended response about the features that they would like to see used in added to Blackboard.

4. RESULTS

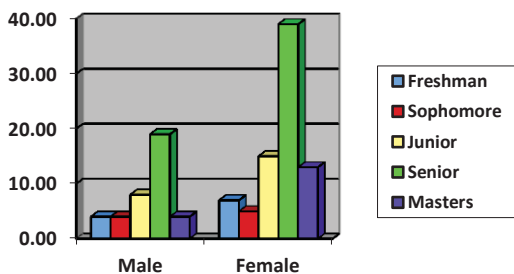


Figure 1: Education Level Categorized by Gender

The survey responses were analyzed to determine the basis for their choice of instructional format and the benefits or drawbacks of using Blackboard. The overall student demographic data indicated that 33.1% of the respondents were male and 66.9% of

were female. The demographic information is further detailed in relation to gender in Figure 1 and Table 1.

Table 1: Demographic Breakdown of Survey Participants

Demographic Information	Male	Female
Age:		
18-25	18.5%	35.3%
26-35	4.2%	10.1%
36-45	6.1%	9.8%
46-55	2.5%	10.9%
56-65	1.7%	0.8%
Education Level:		
Freshman	3.4%	5.9%
Sophomore	3.4%	4.2%
Junior	6.8%	12.7%
Senior	16.1%	33.1%
Masters	3.4%	11%
Degree:		
Arts and Humanities	2.6%	10.4%
Business	15.7%	21.7%
Education	0.9%	15.7%
Science & Math	3.5%	7.8%
Engineering	7.0%	0.0%
Computer Science	0.0%	0.9%
Information Systems	0.9%	0.0%
Information Technology	0.9%	0.9%
Psychology	0.9%	7.8%
Undecided	0.0%	2.6%
Online Classes Before		
Yes	27.1%	54.2%
No	6.8%	11.9%

Figure 1 categorizes the percentage of males and females according to their education level. For every education level, the percentage of female respondents is larger than the corresponding percentage of male respondents. For both genders, the senior and junior standing students had the highest response rate. Table 1 depicts the percentage of students for each gender in relation to age bracket, education levels, degree programs, and their prior

experience with online classes. The largest percentage of respondents for both genders is in the 18-25 age brackets. The percentage of female respondents is consistently larger than the corresponding percentage of male respondents in all age brackets with the exception of the 56-65 age bracket where male respondents outnumbered female respondents by a factor of 2:1. The most popular program for both genders was Arts and Humanities. The next set of popular programs for female respondents was Education and Arts and Humanities. On the other hand, the next set of popular programs for male respondents was Engineering and Science and Math.

Basis for Classroom Format

Survey question five asked if the students had previously taken an online class. If they answered "yes," they proceeded to provide input about the instructional format. If they answered "no," they received a "Thank You for Participating" message and did not complete the remainder of the survey. Since this survey assesses a user's experience and perception of Blackboard, it only makes sense that students who answered "no" be eliminated from participating in the survey.

Table 2: Students' Reasons for Specific Instructional Format

<i>Format Reasons</i>	<i>Online</i>	<i>In The Class-room</i>	<i>Blended</i>	<i>Total</i>
<i>Faculty</i>	5	18	22	45
<i>Format</i>	12	15	12	39
<i>Time Constraints</i>	36	8	26	68
<i>Learning Effectiveness</i>	5	29	30	64
<i>Pedagogy</i>	1	7	1	9
<i>Accessibility</i>	22	6	15	43
<i>Privacy</i>	5	0	2	7
<i>Learning Style</i>	20	32	28	80
<i>Community</i>	0	9	3	12

Of the 119 respondents that started the survey 96 answered "yes," to taking online classes and 22 answered "no." One student did not answer this question and, based upon the missing responses for the remainder of the questions for this student, it can only be assumed that the student exited the survey at that point.

Question six prompted the students to choose their preferred instructional format: 31% of the students chose "Online," 27% chose "In the Classroom", and 37% chose "Blended." The respondents were then asked to identify the reasons for their choice of instructional format and were permitted to select more than one response. The most popular reasons included: Time Constraints for Online Classes, Learning Style for In the Classroom, and Learning Effectiveness for Blended. Table 2 identifies additional reasons for each of the instructional formats. Each value in the table represents the number of respondents who selected that particular reason.

Blackboard Tools/Features Used

Table 3: Percentage of Students Using Each Feature

<i>Blackboard Feature</i>	<i>Percentage of Students Using Feature</i>
<i>Announcement</i>	89.1%
<i>Syllabus</i>	89.9%
<i>Post Content</i>	25.2%
<i>Discussion Board</i>	90.7%
<i>Email</i>	47.9%
<i>Digital Dropbox</i>	67.2%
<i>Quizzes and Surveys</i>	81.5%
<i>Group Tools</i>	32.8%
<i>Collaboration (Chat)</i>	12.6%
<i>Feedback during Grading</i>	24.4%
<i>Imbedded Audio/Video</i>	16.0%
<i>Blackboard Mobile</i>	1.7%
<i>Notification System</i>	7.6%

In order to answer research question 1, the students were asked to identify the tools and features they used in Blackboard. The top five features included Announcements (89.1%), Syllabus (89.9%), Discussion Board (90.7%), Digital Dropbox (67.2%), and Quizzes / Surveys (81.5%). Slightly less than half of the

population identified Email as a feature that was used within Blackboard. Table 3 summarizes the percentage of students using specific features.

Benefits and Drawbacks

Research question #2 sought to determine the perceived benefits and drawbacks of Blackboard. The highest ranked benefits identified by the students included the ability to readily check grades, the 24x7 access to course materials, and the overall accessibility to the Blackboard system. The least ranked responses were collaborative group projects and team development activities to build community and enhance team cohesiveness. The responses to the perceived benefits of Blackboard are summarized in Table 4.

Table 4: Benefits of Blackboard

I like Blackboard because:	Total
Checking Grades	90.8%
Ease of access to course materials	83.2%
Accessibility	73.0%
Promote group discussion	31.9%
Quality of assessments	27.7%
Access to the instructor	24.4%
Solicit feedback from peers and the instructor	23.5%
Enhance team cohesiveness	10.1%
Collaborative group projects	8.4%

Table 5: Drawbacks of Blackboard

Drawbacks	Total
Inconsistent use of Blackboard by instructors	62.2%
Professors don't know how to use it effectively	48.7%
Not used to its potential	45.4%
Problems with technology/access issues	31.1%
Have to print everything yourself	19.3%

Just like the Blackboard Student Survey Report of 2006 (The Center, 2006), this survey allowed students to identify the potential drawbacks of using Blackboard. The two highest ranked

drawbacks were a lack of standardization in Blackboard and the instructor's lack of knowledge of Blackboard. Other drawbacks identified were technology problems, access issues, and the need for students to print out the course documents for their reference. It is important to note this was a closed-ended question and many of these responses did not have additional comments from the student. These drawbacks are summarized in Table 5.

Awareness of Blackboard Features

Each respondent was asked to identify their awareness of Blackboard features such as email, notifications, audio/video/grade book, calendar, chat and integrations, whether they used them or not. The awareness of these features tends to be correlated to the features used by their instructors; however, that assessment was not within the scope of this paper. Every feature was familiar to at least 31% of the students. The feature that had least student awareness was Chat/Instant Message; this feature had just 31.1% awareness. Table 6 summarizes the features and the percentage of students who indicated their awareness of the feature.

Table 6. Student Awareness of Blackboard Features

Feature	Percent Awareness
Comprehensive Email Too	63.9%
Notification System	52.1%
Multimedia, Graphics, Audio, Video	39.5%
Mandated Gradebook	76.5%
Course Calendar	60.5%
Chat Instant Messenger Tool	31.1%
Access to Class Roster	79.8%
Integration with other Systems (library, webmail)	42.9%

The last question on the survey related to research question #3 which asked the students to identify features that should be implemented in Blackboard that will enhance their learning

experience. Three students recommended improving its overall format and giving it "Skype like" features that include a webcam for visual interactions. Another student suggested a pictorial roster to enhance student and instructor communications.

Other feature improvements that were suggested involved functionality that can be readily controlled or changed within Blackboard. A total of nine students provided feedback in this category. The suggested improvements included removing unused options or tools, a cleaner interface, standardization, interactive feedback on homework and exams, a tutorial, and alerts on assignments and exams.

5. CONCLUSION

Online education can be greatly improved when a university maximizes the benefits that are offered by learning management systems such as Blackboard. The results section captured the benefits, drawbacks, and suggested improvements from the perspective of the students. It is essential to understand the student's perspective and perceptions if the university is to effect tool modifications that will enhance learning.

Many of the drawbacks identified by the students and many of the modifications suggested relate to the university's implementation of Blackboard. These changes included a cleaner Blackboard course interface without unused sections/options, a standardized Blackboard shell for all instructors, tutorials on using Blackboard, alerts for upcoming exams and assignments and interactive feedback on assignments and exams. The university can currently implement these features. The university can adopt standardized procedures and institutionalize a standard Blackboard course shell for all instructors. Additionally, the university can provide a video tutorial or just in time Camtasia/Captivate screen interactions for students and instructors. With adequate training, instructors can hide unused Blackboard tools and features to enhance the learning experience for the students. In some cases, it may be more effective to have the department or university as a whole develop a standard that the professors follow for teaching online courses.

On the other hand, some suggested features require software modifications to the Blackboard application. Two such areas of improvement are discussion board and rosters. The roster or student profile should be enhanced to allow the

students to update additional information and to include a picture to their profiles. This will allow the students to connect better with their other peers in the classroom. Also, the discussion board should be enhanced to incorporate a webcam for interactive chat or discussions. Currently, the university would have to use third party tools such as Elluminate or Wimba to fill this gap. Blackboard, Inc. just initiated an acquisition of Elluminate, Inc. and Wimba, Inc. This acquisition could potentially address this suggestion in the next release of Blackboard. The effective implementation of the existing features in the online learning management system and the development of new features can improve community, critical thinking, and communications, and enhance the learning experience for the student.

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