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Comparatively Assessing The Use Of Blackboard Versus Desire2learn: Faculty Perceptions Of The Online Tools

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Abstract

Current trends indicate that an increasing number of Universities have been offering online classes without assessing the faculty perspective of the online learning management tools. When a University understands the faculty perception they can implement an online education environment that is both conducive to student learning and faculty engagement. This paper provides a quantitative and comparative assessment of Blackboard and Desire2Learn, two tools used to implement online classes. These tools were utilized at a small rural Mid-Atlantic university in the 2010 and 2011 academic years. A survey was distributed to the faculty populations to understand their opinions about Blackboard and Desire2learn, and to assess the difference in their preferences between these two technologies. This survey is based upon an earlier study conducted at the University of Denver in 2006. The results of this survey were analyzed to better understand the faculty perceptions of these technologies and the commonly used features.

Keywords: Blackboard, Desire2Learn, Online Classes, Online Learning, Distance Education, Learning Management System, LMS

1. INTRODUCTION

Universities and colleges regularly improve the learning techniques and methods used to educate students. Distance learning has improved accessibility of education to a larger student population and it affords students the flexibility of classes without physically stepping foot in the classroom. Online learning has become an educational alternative to traditional learning styles.

Online education is expanding at a rapid pace. Universities and colleges have implemented web based learning management systems (LMS) that enable faculty to develop and teach courses. Since 2003, enrollments in online programs have

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been growing faster than that of traditional higher education. In 2010, online enrollments grew by 21%; this growth in online enrollment rate far exceeded the almost 2% growth of the overall higher education population. Three-quarters of institutions reported that the economic downturn of the decade has resulted in an increased demand for online courses and programs (Allen & Seaman, 2010). This growing demand for online courses makes it necessary for universities to provide students with the most optimal learning environment. In this context, the researchers conducted a comparative analysis of university faculty members' perceptions of Blackboard versus Desire2Learn.

2. LITERATURE REVIEW

Advances in technology and the Internet have changed the way people access and use information. A 2010 online education study by Allen and Seaman revealed that the recent growth in online enrollments has come from existing offerings, not from institutions new to online. This study defined online courses as those in which 80% of the course content is delivered online. Sixty-three percent of chief academic officer said that online education was critical to their long-term strategy (Allen & Seaman, 2010).

As of fall 2010, the entire Pennsylvania State System for Higher Education (PASSHE) transitioned from Blackboard to Desire2Learn (D2L). After a comprehensive review and assessment of online education tools (Blackboard, Desire2Learn, e-college, and various others), Desire2Learn turned out to be the overwhelming choice. Desire2Learn provided a greater number of tools and capabilities than Blackboard and featured a friendlier user interface for both faculty and students. One of the deciding factors was that it took about a third of the clicks to accomplish tasks in Desire2Learn as compared to Blackboard (Moore, 2010).

The University of Denver's Center for Teaching and Learning's Courseware Faculty Advisory Board (CFAB) completed a study of their student's perceptions of Blackboard (The Center, 2006). Of a total of 1,821 students that completed the survey, nearly 90 percent attested that Blackboard was an excellent web-based tool. Fewer than two percent reported having a bad experience with Blackboard. The number one reason that students liked Blackboard was the 24x7 access to the course materials. They also noted that there was a high level of communication and interaction with their instructors in the Blackboard environment. Other benefits included the immediate access to their grades, improved class discussions, and the ability to view assignments anytime. Approximately 82 percent of students preferred courses that utilized Blackboard or other web-based tools as compared to 10 percent that did not (The Center, 2006).

According to Kovacs, et al., there is little doubt that changes in higher education are being driving by technological advances in communication technologies and also in the media-rich extensions of the Internet. These advances have enabled universities to implement alternatives to the traditional classroom teaching and learning methods and to develop new ways to deliver course content to students. These new developments have resulted in the growth of a new paradigm in pedagogy; technology-enabled learning environments (Kovacs, Davis, Scarpino & Kovalchick, 2010).

A 2011 study conducted by the researchers on student perceptions of Blackboard versus Desire2Learn revealed that 65% of students used more features in Desire2Learn as compared to Blackboard. They preferred Desire 2 Learn because of ease of integration, sophisticated features, and enhanced functionality. Desire2Learn was consistently ranked higher than Blackboard in every level of education (Freshman, Sophomore, Junior, Senior) (Chawdhry, Paullet, & Benjamin, 2011).

A national survey of faculty perceptions in regard to online learning was conducted by Central Michigan University's academic affairs in April 2009. A total of 174 faculty members participated in the study. Fewer than half of the faculty members surveyed indicated that they had taken (39%), taught (44%), converted (31%), or developed (32%) an online course. Fifty-one percent of faculty members rated the factor "online courses meet student needs for flexible access" as very important. Additionally, 26% believed that online learning was the best way to reach particular students that otherwise would not have attended class. It has been commonly perceived that online teaching took more effort on the part of faculty as compared to face-to-face instruction. Faculty members that

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taught online or developed courses online rated their level of effort in the online environment as compared to an equivalent course in the face-to-face environment. Eighty percent of faculty members reported that it took more effort to create an online course than a traditional class. This result was also true for teaching online; sixty percent of faculty believed that it took more effort to teach online than in a face-to-face class (Central Michigan, 2009).

A 2006 study conducted by Alexander, et al., compared faculty and student experiences with online learning courses. The study also did a longitudinal comparison of 2006 experiences with that of the 2000 study. A total of 140 faculty members responded to the 2006 study as compared to 81 faculty that responded to the 2000 study. Additionally, 300 students responded in the 2006 study as while 153 students responded to the 2000 study. The findings indicated that the faculty and students in both 2000 and 2006 reported overall satisfaction with the online learning experience. Students in the 2006 study reported significantly higher satisfaction levels as compared to faculty for online administrative support. Faculty and students in both studies agreed that two most important motivational factors for enrolling in online learning courses were accessibility and flexibility (Alexander, et.al. 2006).

In 2010, 183 two and four-year colleges and universities participated in The WICHE Cooperative for Educational Telecommunications (WCET) and The Campus Computer Project survey related to managing online education. This study found that colleges and universities engaged in online learning made major investments in faculty development. The results showed key differences between on campus and online courses. In contrast to teaching in traditional classrooms, both part-time and full-time faculty that taught online courses had to complete significant training. Mandatory training for faculty that taught online courses reflected an institutional awareness of the challenges of teaching in the online environment (WCET, 2010).

A 2010 study conducted by Stewart, Bachman & Johnson sought to determine predictors of faculty acceptance of online education. This study used an extended version of the technology acceptance model to predict intention to teach online. This study revealed that faculty who found learning management systems easy to use were likely to teach online, and that instructors who enjoyed traditional courses were reluctant to teach online. Online degree programs required faculty to commit to teaching several courses online in a strategic manner each semester. This study also found that intrinsic motivation to teach online was found to be the strongest predictor of interest in offering online degree programs (Stewart, Bachman, & Johsnon, 2010).

3. RESEARCH METHODOLOGY

The online learning environment has enabled faculty all over the world to access higher education; classes at their own convenience day or night. The purpose of this study is to compare the faculty's perceptions of Blackboard with that of Desire2Learn. This study explores the following research questions:

RQ1: What is the technology preference of faculty that have used both Blackboard and Desire2Learn?
RQ2: Is there a significant difference between using Blackboard and Desire2Learn to teach online classes?

This study compared faculty perceptions of Blackboard against that of Desire2Learn, at a small mid-Atlantic University during the months of February and March 2011. This study utilized a quantitative methodology to assess the differences between faculty perceptions of Blackboard and Desire2Learn. The response rate was about 9.85% of the total population. Of the 396 faculty members that taught during the Spring 2011 semester, 39 full-time and adjunct faculty members completed the survey.

The survey obtained information from faculty that had used both Blackboard and Desire2Learn. The survey was developed from a partial replication of a 2006 [3] Blackboard survey conducted at the University of Denver and an earlier study conducted by the researches at a mid-Atlantic University in Pennsylvania in 2010. The researchers enhanced the survey with additional questions to obtain insights that were not captured in prior studies. 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 students' preference between Blackboard and Desire2Learn. Statistical frequencies were used

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to determine the basis for the students' use of the two online learning management systems. The study was a convenience sample; it surveyed faculty from the School of Arts and Humanities, Business, Science and Match, Engineering, Computer Science, Information Technology, Criminal Justice and Psychology.

The survey instrument consisted of 26 closed-ended questions and one open-ended question. Fourteen of the closed-ended questions provided an "Other" option, which allowed faculty to provide responses in addition to predetermined responses listed in each question. The first three questions focused on faculty demographics; they included gender, age, and department. Question four, was a contingency question that asked faculty if they had taught any online distance learning classes. If the faculty answered yes, they continued on to question five which asked if the faculty had taught online classes using both Blackboard and Desire2Learn. If the faculty answered yes again, they were to continue on with the survey. If the answer was no, the faculty exited the survey. Based on the faculty knowledge and use of both Blackboard and Desire2Learn, questions 6-25 focused on their preferences between the two online learning management systems. The final question was designed so that faculty could provide additional comments or concerns related to Blackboard and Desire2Learn.

4. RESULTS

The survey responses were analyzed to assess faculty technology preferences for Blackboard as compared to Desire2Learn and to determine if the difference in preferences was significant. Faculty responses indicated that 51.3% of the respondents were male and 48.7% of the respondents were female. The demographic and background information is further detailed in relation to gender in Table 1, which depicts age, department, and prior experience with online classes broken down by gender. There were no respondents in the 18025 age brackets. In age brackets 25-35 and 36-45, female respondents outnumbered the males. In stark contrast, males outnumbered females by a factor of 2 in the 56-65 age bracket. An equal number of males and females in the 46-55 age bracket responded to the survey. Males outnumbered females in the Arts and Humanities, Business, Computer Science and Information Technology Departments. In contrast, females outnumbered males in the Education and Science & Math

Departments by a factor of 1.25 and 2.98 respectively. It should be noted that there were no females from the Business, Computer Science and Information Technology Departments. There were no male nor female respondents from the Psychology Department.

Table 1: Demographic Breakdown of Survey Participants

Demographic Information	Male	Female
Age:		
18-25	0.0%	0.0%
26-35	7.7%	12.8%
36-45	15.4%	17.9%
46-55	7.7%	7.7%
56-65	20.5%	10.3%
Department:		
Arts and Humanities	19.4%	12.9%
Business	3.2%	0.0%
Education	6.5%	19.4%
Science & Math	12.9%	16.1%
Computer Science	3.2%	0.0%
Information Systems	0.0%	0.0%
Information Technology	3.2%	0.0%
Psychology	0.0%	0.0%
Not Listed	3.2%	0.0%
Online Classes Before		
Yes	46.2%	35.8%
No	7.7%	10.3%
Total	53.9%	46.1%

After collecting demographic data, the researchers collected data about the faculty choices between Blackboard and Desire2Learn in relation to gender, age, and department. Males preferred Blackboard over Desire2Learn by a factor of 3.99; while females preferred Desire2Learn over Blackboard by a factor of 1.34. The first comparison focused on the faculty-preferred choice for online class technology; this was broken down by male and female. The result yielded a chi-square value of 2.487 with one degree of freedom. Additionally, the statistical probability was calculated to be .115 or 11.5%. Since this value did not fall below the required .05 or 5% threshold, the study did not find any statistical significance between gender and the faculty choices of technology for their online classes. Table 2 lists the percentage of faculty (by gender) who chose the specific online class technology. This table provides additional detail by subdividing gender according to the associated faculty department.

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Table 2: Technology Choice by Gender and Department

Gender/ Department	Blackboard	Desire2Learn	Total
Male	47.1%	11.8%	58.9%
Arts & Humanities	11.79%	0.0%	11.79%
Business	5.88%	0.0%	5.88%
Education	0.0%	0.0%	
Science & Math	5.88%	5.88%	11.76%
Computer Science	5.88%	0.0%	5.88%
Information Systems	0.0%	0.0%	0.0%
Information Technology	5.88%	0.0%	5.88%
Psychology	0.0%	0.0%	0.0%
Undecided	11.79%	5.88%	17.76%
Female	17.6%	**23.5%**	**41.1%**
Arts & Humanities	5.88%	5.88%	11.76%
Business	0.0%	0.0%	0.0%
Education	0.0%	11.79%	11.79%
Science & Math	5.88%	5.88%	17.76%
Computer Science	0.0%	0.0%	0.0%
Information Systems	0.0%	0.0%	0.0%
Information Technology	0.0%	0.0%	0.0%
Psychology	0.0%	0.0%	0.0%
Undecided	5.88%	0.0%	5.88%
Total	**64.7%**	**35.3%**	**100.0%**

The second comparison investigated the faculty; choice for online class technology; the variable in this case was age. There were no respondents in the 18-25-age bracket. The respondents in the 26-35-age bracket were split down the middle with 11/1% each for Blackboard and Desire2Learn. Respondents in the 36-45-age bracket preferred Desire2Learn over Blackboard by a factor of 3.01. Respondents in the 46-55 and 56-65 age brackets preferred Blackboard over Desire2Learn by a factor of 3.01 and 4.00 respectively. The results yielded a chi-square value of 2.221 with three degrees of freedom. The statistical probability was calculated to be .528 or 52.8% which is above the allowable limit of 5%. Therefore, this study did not find any statistical significance between age and the faculty choice of technology for online classes. Table 3 below lists the percentage of faculty (by age) who chose the specific online class technology.

Table 3: Technology Choice by Age

Age	Blackboard	Desire2Learn	Total
18 – 25	0.0%	0.0%	0.0%
26 – 35	11.1%	11.1%	22.2%
36 – 45	11.1%	16.7%	27.8%
46 - 55	16.7%	5.55%	22.25%
56 – 65	22.2%	5.55%	27.75%
Total	61.1%	38.9%	100.0%

The third and final comparison was between the faculty department and their choice of technology for their online classes. Respondents from the Arts & Humanities, Computer Science, and Information Technology Department favored Blackboard over Desire2Learn; while respondents from the Education and undecided departments favored Desire2Learn over Blackboard. The results of this comparison yielded a chi-square value of 5.960 with eight degrees of freedom. The statistical probability was calculated to be .428 or 42.8%, which is above the allowable limit of 5%. The study concluded that there was no statistical significance between a faculty department and their choice of technology for online classes. Table 4 displays the student's degree versus their technology choice.

Table 4: Technology Choice by Department

Concentration	Blackboard	Desire2Learn	Total
Arts & Humanities	17.65%	0%	26.6%
Business	5.88%	5.88%	13.4%
Education	0.0%	11.76%	13.3%
Science & Math	11.76%	11.76%	26.6%
Computer Science	5.88%	0.0%	6.7%
Information Systems	0.0%	0.0%	0.0%
Information Technology	5.88%	0.0%	6.7%
Psychology	0.0%	0.0%	0.0%
Undecided	17.54%	5.88%	6.7%
Total	53.3%	46.7%	100.0%

One of the questions in the survey determined if faculty used more features in Desire2Learn. Of the total number of respondents, 61.1% said they used more features in Blackboard as compared to Desire2Learn; this was in contrast to 38.9% that used more features in Desire2Learn over Blackboard. The second

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question asked those who said they used Desire2Learn more than Blackboard for their reasons for using Desire2Learn more than Blackboard. 71.4% of those who said that they use Desire2Learn more than Blackboard stated that they did so because of "Ease of Integration." Table 5 below details reasons for the faculty preference for Desire2Learn as opposed to Blackboard. Additionally, this question allowed for an open-ended response "Other;" the responses for "Other" are listed below Table 5.

Table 5: Reasons for using Desire2Learn More

D2L: More Features	% who used feature
Training Options	14.3%
Ease of Integration	71.4%
Intuitive Interface	14.3%
Other	28.6%

Other reasons why faculty used Desire2Learn more than blackboard are:
- More sophisticated features in grade book are available.
- Relying more on web-based learning opportunities than I did in previous years

Table 6: Usage of Blackboard and Desire2Learn Features

Features	Blackboard	Desire2Learn
Announcements	42.5%	40.0%
Syllabus	42.5%	35.0%
Discussion Board	35.0%	30.0%
Email	45.0%	37.5%
Digital Dropbox	32.5%	30.0%
Quizzes and surveys	35.0%	35.0%
Group Tools	15.0%	12.5%
Collaboration (chat)	7.5%	5.0%
Imbedded audio/video	17.5%	7.5%
Blackboard mobile	5.0%	0.0%
Notification System	7.5%	5.0%
Other	0.0%	0.0%

The questionnaire asked the faculty a series of questions to further determine the faculty's utilization of features in both Blackboard and Desire2Learn to better understand if one technology was used more than the other. The faculty evaluated 11 features and were allowed to provide open-ended responses in the "Other" field. Blackboard was the preferred option for all but one of the features where it was equal. This breakdown is detailed in Table 6.

Those who responded to the above did not elaborate using the "other" option.

5. DISCUSSION

The first research question determined the technology preferences between Blackboard and Desire2Learn from the perspective of the faculty. Based upon the results of the surveys discussed in the previous section, these results could be discussed in one of two ways: (1) the technology preference both overall and broken down by gender, age, and department; (2) the percent usage of similar features in both systems.

Approximately 38.9% of the respondents said they preferred Desire2Learn, while 61.1% preferred Blackboard. These results were further broken down based upon other variables. With respect to gender, Blackboard was the preferred choice for males, while Desire2Learn was the preferred choice for females. With respect to age, each of the age brackets preferred Blackboard; determination could not be made about the 26-35-age bracket since there were no respondents in this bracket. Lastly, most of the department categories ranked Blackboard as preferred over Desire2Learn with the exception of Business, Education, and Science & Math which ranked Desire2Learn higher. It should be noted that there was no statistical significance between characteristics (gender, age, and department) and the online class technology preference.

The second method to determine the technology preference for the online class compared the percent usage of similar features in both Desire2Learn and Blackboard. Of the 12 features listed, eleven features were being used more in Blackboard as opposed to Desire2Learn. The feature that was used more in Desire2Learn as compared to Blackboard quizzes; it must be noted that this feature had the same percentage for both technologies. Clearly, Blackboard was preferred by a majority of faculty who took the survey in comparison to Desire2Learn.

The second research question focused on determining if a significant difference existed between the faculty preferences for Blackboard and for Desire2Learn. The study illustrated that respondents used more features in Blackboard as compared to Desire2Learn; however, this difference between the percent usages of these two technologies was under ten percent. This

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variance was not considered as significant. We concluded that faculty as their technology choice for their online classes preferred Blackboard, but there was no statistical significance in their preferences for Blackboard as compared to Desire2learn.

6. CONCLUSIONS

The acceptance of technology is important if it is to be successful. Many faculty members chose Blackboard over Desire2Learn at this university. The percent difference between corresponding features was not significant; this led us to believe that no technology is perfect. In order to keep up with the fast pace at which technology changes, universities must be willing to implement new tools and features in their online learning environment. Not keeping up with the current technology for online education is equivalent to not having proper seating in a traditional brick and mortar school classroom. Universities should constantly enhance their online environment and provide training to faculty and students to ensure that the application is used as intended.

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