

Blackboard or Epic? Student Ratings of an Online Statistics Class Using Different Learning Management Systems

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Abstract: Recently, a university sought the assistance of a private company to provide an LMS and produce courses that had a uniform structure and appearance. This study utilized end-of-course evaluations to compare student opinions of the course composition when taught using two different learning management systems, one (Epic) produced by the private company and the other produced by the instructor on Blackboard. Analysis of the data revealed that students using the Blackboard platform gave higher mean ratings to 25 of 26 survey items and that 19 of the 25 were significantly higher. Identification of factors that led to these differences could lead to the development of more effective online instruction.

Introduction

Universities are expanding their number of online offerings annually. Students can now obtain college degrees without ever sitting in a traditional classroom. The increase in online offerings has given rise to studies regarding best practices suggested for online education. Private companies, seeing a vacuum in faculty training to teach online classes, have partnered with colleges and universities to produce online courses that reportedly incorporate these best practices. The purpose of this paper is to provide an overview of best practices suggested in the literature and to compare perceptions of students enrolled in a course developed and hosted by a private company with those of students enrolled in the same course but which was developed by and hosted through the university's LMS.

After researching the literature for best practices, the author created the first online version of a required graduate-level introductory statistics class. The class was offered during the 14-week fall and spring semesters and during the two 5-week summer sessions and was hosted on the Blackboard 8 LMS platform through the university. Two years later the university offered a Master's degree completely online and entered into a contract with a private company to provide a new LMS known as Epic and to develop courses based on instructor-provided materials that were uniform in structure, appearance and design. The university offered all classes in this new platform as five-week classes. Students who chose to pursue the degree in this format were known as Academic Partnership (AP) students. Class size for the instructor in the AP format was capped at 1500; however, the class was divided into sections with an enrollment of 25-30 students. Each section had a teaching assistant assigned to it. The teaching assistants were required to have a minimum of a Master's degree and several had a doctorate. Each section of the class received the same instructional materials in a very structured format. The teaching assistants' roles were primarily grading assignments using the instructor-generated rubrics and addressing student questions. Weekly meetings were held to review the course progress and to ensure all sections were on schedule. Blackboard (Bb) course enrollment was capped at 25 and was taught solely by the instructor.

The instructor taught the introductory statistics course through the AP program using the Epic LMS and also taught the course to non-AP students using the university's Blackboard LMS. The courses were identical in content and only differed in the platform being used. The purpose of this study was to compare perceptions of students enrolled in a course produced by a private company with that of students enrolled in the same course but which was developed and produced by the instructor through the university's LMS.

Review of Literature

Student learning is supported by effective course design which is very important and usually requires a considerable amount of time to develop (Eastmond, 2000; Smith, Ferguson, & Caris, 2003; Li & Akins, 2005). Some of the best practices for designing an online course include "thorough planning, communication between faculty and students, student to student interactions, respect for student diversity with regard to learning styles, collegial and individual activities that ensure high levels of time on task, the importance of prompt feedback, and the maintenance of high expectations" (Kosak, et al, 2004). Young (2006) identified seven items suggested by students that contributed to effective online teaching: adapting to student needs, providing meaningful examples, motivating students to do their best, facilitating the course effectively, delivering a valuable course, communicating effectively, and showing concern for student learning. Students in her study reported that the best courses were the ones in which instructors demanded high-quality work from the students.

Students appreciated instructors whose course was well organized and carefully structured so that course navigation is easy (Young, 2006). The course should be organized so that students can move quickly to a desired location. It is easy for students to get lost on a site that has extensive layers of content distributed over multiple locations. To avoid this pitfall it is recommended that materials be organized in a linear fashion with as few layers as possible. The "keep it simple" principle allows the instructor to stay focused on the core matters of the course without getting sidetracked by the inclusion of superficially appealing computer-enhanced graphics, animation, and the like (Little, Titarenko, & Bergelson, 2005).

Students want instructors to clarify expectations for the course (Brescia, Miller, Ibrahima, & Murry, 2004). Because of the reliance on text-based communication in an online class, every aspect of the course, including the syllabus, should be laid out in meticulous detail. Directions for every assignment have to be spelled out in a logical way (Smith, Ferguson, & Caris, 2003; Lauron, 2008). Examples of good and bad work should be available to illustrate the expectations.

The instructor needs to be perceived as a real person who is interested in teaching the student (Johnson & Aragon, 2003; Wallace, 2003). Quick response to student questions, timely evaluation of submitted work, and occasional contributions to student discussions help establish the instructor's online presence. In an online class, students have a tendency to expect the instructor to be available 24/7 (Hillstock, 2005). While 24/7 isn't practical, it might be a good practice to establish "course hours" when the instructor will be available so students don't feel neglected if they don't receive a response within a certain period of time.

Student to student interaction in online courses has been the topic of research recently. Several researchers have found that the greater the interactivity in an online course, the more satisfied the students were and the more they learned (Lauron, 2008; Little, Titarenko, & Bergelson, 2005; Thurston, 2005). Koontz, Li, and Compura, (2006) reported that students want to know the other students and become acquainted. Ivankova and Stick (2005) reported that their study reinforced the belief that virtual classrooms provide greater opportunities for meaningful and extensive communication among participants.

Methods

Based on a review of the literature a survey instrument was developed to assess student perceptions of what had been reported as effective components of an online course. Responses were measured on a Likert-type scale ranging from one (strongly disagree) to 4 (strongly agree). The survey was administered at the end of each course and students were provided a link to the instrument on Survey Monkey where they could voluntarily complete the instrument with the assurance of anonymity. Based on feedback from students and a further review of the literature the instrument was modified and the number of survey items was reduced from 36 to 26.

During the summer of 2010 three five-week statistics courses were taught using Blackboard 8 (BB). During the 2010 fall semester a five-week Epic (AP) course that started in August was taught. One hundred percent of the Blackboard students completed the survey compared to 51% of students enrolled in the Epic course. For statistical purposes, a computer random number generator was used to randomly select equal numbers of students from each group.

Descriptive statistics were used to identify the respondents' mean ratings for each of the 26 survey item statements and to conduct demographic data analysis. An independent samples t-test, two-tailed test of significance, was used to identify mean differences between the Blackboard students and the Epic (AP) students for each survey item statement. Qualitative responses were analyzed through data reduction methods. Data was analyzed using PASW (formerly SPSS) 18.0 software.

Results

Nearly a third of students indicated that this class was their first totally online class. Numbers were nearly evenly split between the Blackboard and Epic platforms at 22 and 23, respectively. The number of students who had taken 1 to 3 online classes was also similar. Of the seventy students in the Blackboard and Epic groups, the number of students who had taken 3 or fewer online classes was 41 and 48, respectively. Twelve Blackboard students reported having taken ten or more online classes compared to none in the Epic group. Further demographic data analysis revealed that fifty percent of students in each platform reported they were under age 36.

Students using the Blackboard platform gave higher mean ratings to 25 of the 26 survey items with 19 of the 25 being significantly higher. Students using the Academic Partnerships platform gave a slightly higher mean rating to only one of the 26 survey items with the mean being 3.27 compared to 3.25. Table 1 presents the findings of the survey.

Survey item	LMS	N	Agree	M	SD	P
The course syllabus with expectations was laid out in meticulous detail	AP	70	83%	3.03	.82	.000
	BB	70	96%	3.59	.58	
The course grading policy is clearly stated	AP	68	94%	3.34	.68	.020
	BB	70	97%	3.59	.55	
Etiquette expectations for online discussions, email, and other forms of communication are clearly stated	AP	70	94%	3.21	.64	.178
	BB	70	93%	3.36	.62	
The required textbook was easy to read and explained the material well	AP	70	83%	3.17	.74	.141
	BB	69	90%	3.35	.66	
Instructions regarding how to access online resources, such as the library, were sufficient and easy to understand	AP	69	88%	3.20	.63	.000
	BB	68	98%	3.66	.51	
The supplemental reading material from other sources enhanced my understanding of the material	AP	70	79%	2.93	.69	.067
	BB	70	83%	3.14	.69	
The self-introduction by the instructor gives me a feeling of connection with a person	AP	70	83%	3.11	.79	.000
	BB	70	96%	3.54	.58	
Having students introduce themselves to the class on the discussion board was a worthwhile activity	AP	70	59%	2.76	.91	.000
	BB	70	93%	3.39	.62	
Seeing a photograph of the student in their introduction was helpful in identifying with the individual	AP	70	44%	2.46	.83	.000
	BB	68	81%	3.18	.73	

The tests related to the material presented in the lessons	AP	69	99%	3.41	.52	.010
	BB	70	97%	3.62	.54	
The tests were fair and not designed to trick me	AP	70	81%	3.04	.73	.003
	BB	69	90%	3.41	.67	
The instructional materials had sufficient breadth, depth, and currency for me to learn the subject	AP	70	90%	3.17	.64	.004
	BB	70	96%	3.47	.58	
The course layout was organized so that it was easy to navigate and find materials	AP	70	64%	2.73	1.03	.000
	BB	70	94%	3.54	.61	
Navigation throughout the online components of the course was logical, consistent, and efficient	AP	70	67%	2.77	.98	.000
	BB	69	96%	3.48	.63	
The course design takes full advantage of a variety of tools and media	AP	70	91%	3.19	.62	.000
	BB	70	100%	3.59	.50	
The video lessons were legible and had good audio quality	AP	69	94%	3.46	.66	.011
	BB	69	100%	3.71	.46	
The video lessons were about the right length (not too long) to keep my attention	AP	69	75%	2.93	.88	.000
	BB	69	97%	3.55	.56	
I prefer video lessons be in smaller chunks of 10-15 minutes instead of long sessions	AP	70	89%	3.27	.70	.837
	BB	69	83%	3.25	.74	
The videos were helpful to my understanding of the topic being discussed	AP	70	96%	3.51	.58	.049
	BB	70	97%	3.70	.52	
Seeing the instructor in a video lesson is important to me	AP	69	35%	2.33	.85	.027
	BB	69	52%	2.68	.98	
I should be able to download the videos to another medium so I can view them offline	AP	68	69%	2.89	.83	.002
	BB	70	90%	3.29	.69	
I would like to have the lessons in a downloadable audio format such as mp3 or iPod so I can listen to them	AP	70	43%	2.40	.81	.016
	BB	69	57%	2.74	.85	
I would like the instructor to use relevant examples from newspapers, magazines, TV news reports, etc that help illustrate the concepts being learned	AP	68	72%	2.78	.64	.515
	BB	69	70%	2.86	.70	
I would prefer the instructor have set office hours when he would be available to respond immediately to questions rather than responding periodically throughout the week	AP	70	59%	2.74	.86	.321
	BB	69	49%	2.59	.90	
I would like to have more discussion topics in the course to interact with other students in the class	AP	69	19%	2.06	.71	.152
	BB	68	29%	2.24	.74	
I believe the discussion board forum where I can anonymously post and respond to questions without receiving a grade is a valuable component of the class	AP	69	78%	2.83	.73	.000
	BB	70	97%	3.59	.55	

Table 1. Student Perceptions of Course Effectiveness using Blackboard (BB) and Epic (AP)

Discussion

Previous studies regarding effective online classes revealed that students wanted a class to be organized, easy to navigate, contain detailed instructions regarding assignments, provide meaningful examples of good work, involve student to student interactions, respect different learning styles of students, and provide prompt feedback (Young, 2006; Lauron, 2008). Responses in this study suggested that students valued the same characteristics in an effective class with a major exception. Student to student interaction was not valued as much as in previous studies. Most, 81% of AP and 71% of BB, students disagreed with the statement about having more discussion topics in the course to interact with other students. However, when asked about having a discussion board where they could anonymously post and respond to questions without receiving a grade 97% of the BB students agreed that it would be a valuable component of the class while only 78% of the AP students agreed. The difference in the means was statistically significant ($t(139) = -6.948, p = .000$). This possibly suggests that students value the opportunity to

interact with their classmates but not as an assignment or in a manner that results in a grade. Students were required to introduce themselves to the class on the discussion board. Only 59% of the AP students agreed that it was a worthwhile activity compared to 93% of the BB students. They were also asked to post a picture of themselves. Only 44% of the AP students felt seeing a photo was helpful in identifying with the individual compared to 81% of the BB students. These differences may be attributed to the composition of the classes. Students in the AP classes tend to live all over the world whereas the BB students tended to be more local. AP students may have felt there was little need in knowing their classmates since the likelihood of ever meeting them personally was remote.

Students using the Blackboard platform gave higher mean ratings to 25 of the 26 survey items than did the AP students. In most cases the two groups agreed with the survey item. One area of significant disagreement pertained to the organization of the course layout. The BB students agreed that the course was organized so that it was easy to navigate and find materials while the AP students disagreed. In only one case was the AP mean rating higher than the BB mean rating and that was regarding preferring videos be in shorter “chunks”. Even then the mean rating was 3.27 for the AP group and 3.25 for the BB group which was not significant. Neither group wanted the instructor to have set office hours when he would be available to respond immediately to questions. They both preferred that he respond periodically throughout the week. This is consistent with earlier findings that students have a tendency to expect the instructor to be available 24/7 to provide feedback. Students apparently want that connection with the instructor. Both groups agreed that the self-introduction by the instructor gave them a feeling of connection.

While the study was originally designed to gather student feedback about the effectiveness of the class design certain patterns emerged while reviewing the responses. Students using the Blackboard platform gave higher mean ratings to 25 of the 26 survey items and 19 of the 25 were significantly higher. This study revealed there was differences between the perceptions of course effectiveness of students taught introductory statistics using Blackboard and using Academic Partnership’s Epic but did not offer any explanations regarding why the differences existed. Some possibilities might include the LMS platform, the sample size, the sample composition, the timing of the surveys, or the procedure of the course regarding access to the instructor.

It could be that students using the Blackboard platform were happier with the design and layout of the course. All of the Blackboard students (n=70) responded to the survey but only 51% of the 1564 AP students responded. Since the survey was voluntary it may be that the disgruntled AP students responded to the survey causing the results to be skewed. The composition of the classes may have been a contributing factor. All students in the AP course were education majors whereas the Blackboard course was open to students from multiple disciplines. Several of the Blackboard students were from the health services field and had extensive experience with online classes.

The timing of the surveys may have contributed to the differences. The BB classes were taught during the summer when teachers were not employed and could devote more time to the class. The AP class began in August at roughly the same time the public school teachers were beginning a new school year. The stress of starting a new school year and taking a five-week statistics class at the same time may have influenced the responses.

A fundamental difference existed regarding access to the instructor in the two platforms. Blackboard students had direct access to the instructor via discussion board posts and email but the AP students had a teaching assistant who responded to discussion posts and to whom the students submitted email questions. Questions which the assistant could not answer were submitted by the assistant to the instructor for a response. Often, there was a considerable time delay between the time the student asked the question of the assistant and the student received a response from the instructor. The author speculates that this connection, or lack thereof, to the instructor may have contributed to the differences in student responses. Future studies should attempt to identify why significant differences exist. Identification of the factors could lead to the development of more effective online instruction.

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