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Academic Computing and Educational Technology
- Learning Management System Pilot Committee report

Learning Management System Pilot Committee
Final Report

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Executive Summary and Recommendation

The Learning Management System (LMS) Pilot Committee recommends that Binghamton University move forward with a request for proposal (RFP) to procure a new LMS. Although no LMS platform was an overwhelming leader in the results of the pilot, Brightspace and Canvas were clearly preferred over Blackboard Ultra. The pilot also showed both faculty and students would like to explore an alternative to myCourses (Blackboard Learn). Given all the data sources reviewed, the committee recommends Canvas as the best possible LMS for Binghamton University pending an RFP.

Purpose of LMS Pilot

There are numerous LMSs available on the market, including open source platforms, self or managed hosted proprietary vendor platforms, or software as a service (SAAS) solutions. Binghamton University has been using a proprietary vendor platform, Blackboard, since fall 2000. Binghamton's current version of Blackboard is Blackboard Learn 9. It is a managed hosted environment rebranded as myCourses since the transition to managed hosting occured in spring 2017.

myCourses is governed by the myCourses Users' Group, under the leadership of its executive sponsor, Vice Provost James Pitarresi. myCourses is an enterprise system that impacts all university stakeholders – students, faculty, and staff.

Binghamton University has enjoyed a productive partnership with Blackboard and did not seriously explore other vendor solutions until spring 2018 when the myCourses Users' Group surveyed faculty and students regarding LMS requirements (results are available online). Responses to this survey showed approval of myCourses from students, but varying levels of dissatisfaction were expressed by instructors. Both students and instructors conveyed significant interest in a number of features that are noticeably lacking in Blackboard.

The decision to pilot other systems was made in part to better understand what other LMS platforms have to offer. Additionally, since the LMS is an enterprise system, it is important to conduct periodic reviews on the effectiveness of the product to ensure maximum efficiency and consistent quality experiences.

Process

A committee was formed in spring 2018 consisting of faculty, undergraduate and graduate students, and staff from across campus. Initially, the committee selected two options to bring to campus – Canvas and Brightspace by Desire2Learn. These two options were selected as they both are used on a large number of campuses and are hosted by the company, two qualities deemed most important to the committee. Representatives from Blackboard reached out to the committee requesting their newest LMS, Blackboard Ultra, be included in the pilot. Blackboard Ultra had not originally been considered because it had just been released and there were many features not working properly at the time. However, the committee ultimately decided to include Blackboard Ultra due to Binghamton's long-standing relationship with Blackboard.

Campus demonstrations of the of selected LMS options were held in the fall of 2018. After attending the demonstrations live or watching the recordings, instructors applied to be part of the pilot and selected which system they would like to pilot. With the assistance of the vendor and staff from the CLT and ITS, instructors built their spring 2019 courses in the pilot platforms.

During the spring 2019 semester, 39 faculty taught 53 classes (cross-listed classes and all sections of a class are counted as one class for these purposes) in the three piloted platforms. A total of approximately 4,140 students experienced the piloted platforms through these courses.

	Faculty*	Courses	Students
Canvas	16	28	1806
Brightspace	18	18	1715
Ultra	5	7	619

*one faculty member taught in two pilot systems

Faculty Pilot Participants

First Name	Last Name	Department	Platform
Jeffrey	Becker	Classical and Near Eastern Studies	Brightspace
Magdala	Bedrin	Romance Languages	Brightspace
Megan	Benson	Libraries	Brightspace
KarenBeth	Bohan	Pharmacy Practice	Brightspace
Anne	Clark	Biological Sciences	Canvas
Bill	Culverhouse	Music	Brightspace
Lauren	Dula	Public Administration	Canvas
Alison	Dura	Nursing	Blackboard Ultra
Peter	Gerhardstein	Psychology	Canvas
George	Homsy	Public Administration / Sustainable Communities	Canvas
Clarice	Kelleher	Chemistry	Blackboard Ultra
Youn Soo	Kim	Translation, Research, and Instruction Program	Brightspace
Kyung-Ah	Kim	Asian and Asian American Studies	Canvas
Rebecca	Kissling	Chemistry	Canvas
Michael	Lawler	Physics	Canvas
Caitlin	Light	Freshman Research Immersion	Canvas
John	MacDonald	Management Information Systems	Brightspace
Marisol	Marcin	Romance Languages	Blackboard Ultra
Claudia	Marques	Biological Sciences	Brightspace
Nahed Nadia	Noureddine	Romance Languages	Canvas
Xingye	Qiao	Math	Brightspace
Mark	Reisinger	Geography	Brightspace
Sara	Reiter	Accounting	Canvas
Patti	Reuther	Decker School of Nursing	Brightspace & Canvas
Paula	Russell	Public Administration	Brightspace
Alessandro	Segalini	Art and Design	Brightspace
Michael	Sharp	English	Brightspace
Stacey	Shipe	Social Work	Blackboard Ultra
Amber	Simpson	Teaching, Learning and Educational Leadership	Brightspace

Natesha	Smith	Student Affairs Administration	Brightspace
Simon	Tong	Chemistry	Canvas
Ozlem	Tonguc	Economics	Canvas
Benjamin	Turnpenny	Chemistry	Brightspace
Ruth	Van Dyke	Anthropology	Canvas
Jonathan	Williams	Math	Canvas
Wei	Xiao	Economics	Canvas
German	Zarate	Economics	Blackboard Ultra
Harald	Zils	German and Russian Studies	Brightspace

Data Sources Consulted

Several sources of data were used to inform the committee's recommendation:

1. Two faculty panels
2. End of term survey results from faculty and students
3. Focus group interviews of faculty and students who participated in the pilot
4. Technical review by ITS staff
5. Estimated five year cost based on initial pricing provided by vendors
6. Accessibility review by SSD and ITS staff
7. Observations from pilot support staff

Faculty Panels

Faculty panel subcommittee: Mike Allington, Sam Christ, and Andrea MacArgel

Two panel presentations were held on April 4 and 5, 2019, where instructors teaching courses in the pilot spaces shared their experiences thus far with an audience of faculty and staff and answered questions from the audience. Recordings of the panels are are available online.

Neither Brightspace nor Canvas was clearly preferred by the instructors at the panel presentations. Unfortunately, we were only able to hear the opinion of one instructor using Blackboard Ultra, who deemed it worse than our current myCourses system in almost all respects aside from a cleaner looking interface.

Similar to the initial survey conducted in spring 2018, many of the complaints from faculty panel participants revolved around not knowing how to complete a task and not that they were actually unable to do so in the piloted LMS. Occasionally, panel participants would incorrectly state that a product could not do something, when in actuality it could but they just were not aware how. It is clear from both panels that neither product is so obviously simple that faculty would be able to use it effectively without any training or assistance and that the university would need to invest heavily in this training should we decide to switch LMSs.

However, both Canvas and Brightspace were described as mobile-friendly, flexible, and easier to use than our current myCourses. Content creation was described as much more streamlined for both platforms. Tools such as the calendar in Brightspace and Speedgrader in Canvas were spoken of positively. The online documentation for both platforms was deemed outdated at times, but in general, faculty found it easy to figure out how to accomplish most tasks with limited assistance. Those who did have more complex requests and reached out to the support they were provided were able to obtain an answer.

End of Term Faculty Survey

End of Term Surveys subcommittee: Andrea MacArgel and Cherie van Putten, edited by Julia Glauberman

The survey was distributed to all 39 instructors who participated in the LMS pilot. Responses were received from 29 instructors (Canvas 10/16, Brightspace 17/18, Blackboard Ultra 2/5). Due to the low response rate for Blackboard Ultra, data about that platform has been excluded from this report. Percentages given in this report are rounded to the nearest whole number.

Ease of use

The pilot ran for entire spring semester. During this period, the majority of instructors (66%) spent 1–5 hours per week using the pilot LMS, with a significant minority (24%) spending more than 10 hours per week. Based on this experience, the vast majority of instructors found their pilot LMS to be either extremely or somewhat easy to use (Canvas 80%, Brightspace 88%) and extremely or very effective in meeting their teaching needs (Canvas 90%, Brightspace 71%).

Feature satisfaction

The survey asked about satisfaction with specific LMS features instructors commonly use (see Table 1). It should be noted that not all instructors used all of the features. In Canvas, discussions and tests were each used by 40% of instructors. Similarly, in Brightspace, discussions and tests were also used less heavily compared to other features (53% and 47%, respectively) and the inbox feature was used by 65% of instructors.

Almost all instructors were satisfied with Canvas features, except for 10–11% who were dissatisfied with five features and 25% being dissatisfied with one feature – test and quizzes. Similarly, instructors were satisfied with Brightspace features, but less satisfied than Canvas instructors. In seven of the 11 Brightspace features, 80% were satisfied but no category scored over 88%. Only one Brightspace feature ranked higher in satisfaction than in Canvas – tests and quizzes. Unlike Canvas, Brightspace instructors reported dissatisfaction levels over 10% in five of the 11 features with the grade center reaching a 31% dissatisfaction rate.

Table 1: Satisfaction and Dissatisfaction with LMS Features

Feature	Canvas			Brightspace		
	Used	Satisfied	Dissatisfied	Used	Satisfied	Dissatisfied
Activity Feeds / Activity Stream	N/A	N/A	N/A	82%	86%	7%
Announcements	90%	100%	0%	94%	88%	6%
Assignments	100%	90%	10%	94%	75%	19%
Calendar	80%	100%	0%	76%	85%	0%
Discussions	40%	100%	0%	53%	78%	11%

File Uploading and Management	100%	90%	10%	100%	88%	12%
Grades / Grade Center	90%	89%	11%	94%	69%	31%
Inbox / Messages / Email	60%	100%	0%	65%	82%	0%
Modules / Folders	100%	90%	10%	100%	82%	6%
Pages / Files / Documents	90%	89%	11%	88%	87%	0%
Tests / Quizzes	40%	50%	25%	47%	75%	13%

Performance of common tasks within the LMS

For the majority of tasks that instructors typically perform in an LMS, instructors preferred the pilot LMSs over our current myCourses system (see Table 2). Preference for the pilot LMSs was more common among Canvas instructors than Brightspace instructors in all but two tasks – creating/posting/organizing course content (Canvas 80%, Brightspace 82%) and creating and managing quizzes and tests (Canvas 83%, Brightspace 100%). No preference between myCourses or the pilot LMS was an option.

Table 2: Preference of platform over myCourses

Task	Canvas	Brightspace
Navigating course settings and features	80%	76%
Creating/posting/organizing course content	80%	82%
Creating and managing assignments	90%	63%
Creating and managing quizzes/tests	83%	100%
Managing grades in the grade center	67%	56%
Communication with individual/groups of students or the entire class	70%	60%
Posting announcements	88%	65%
Average	80%	72%

Benefits to Teaching and Learning

Instructors were asked to rate their agreement with a series of statements about the LMSs effect on teaching and student engagement. Among instructors using Canvas, 80% believed their teaching benefited, and 70% felt the Canvas toolset enabled them to expand their teaching approaches. Brightspace instructors responses on these measures: 65% believed their teaching benefited, and 53% felt the Brightspace toolset enabled them to expand their teaching approaches.

In contrast, Brightspace instructors rated the effect of the pilot LMS on students more positively than Canvas instructors did. When asked whether student engagement benefited, 65% of Brightspace instructors and 50% of Canvas instructors agreed. The difference was less significant on the matter of assessment, with 76% of Brightspace instructors and 70% of Canvas instructors agreeing their ability to assess student work benefited.

Overall reaction

Instructors were overwhelmingly positive about their experience using the pilot LMS and preference for the pilot LMS over the current myCourses system, with 90% of Canvas instructors and 75% of Brightspace instructors agreeing to each of those statements. Notably, 80% of Canvas instructors strongly agreed to both statements as compared to 56% of Brightspace instructors. Six percent of Brightspace users strongly disagreed they prefer Brightspace over myCourses.

Finally, when asked if Binghamton University should adopt the pilot LMS, 90% of Canvas users said yes and 75% of Brightspace users said the same.

End of Term Student Survey

End of Term Surveys summary: Andrea MacArgel and Cherie van Putten, edited by Julia Glauberman

The survey was distributed to all students who had one or more courses in one or more of the pilot LMSs, and 832 students responded (Canvas 341, Brightspace 416, Blackboard Ultra 75). A majority of the students were first- or second-year undergraduates (65%) and a limited number were graduate students (10%). A sufficient number of students provided feedback on Blackboard Ultra, so that platform was not excluded as it was in the summary of faculty survey responses.

Overall ease of use

During the pilot period, the majority of students (57%) spent 1–5 hours per week using the pilot LMS. A majority of students used a laptop or desktop computer to access the platform (63%). Of the students who accessed the LMS via mobile app, a majority found the app to be an effective way to access the platform (Canvas 80%, Brightspace 56%, Blackboard Ultra 85%).

Based on this experience, the majority of students found their pilot LMS to be either extremely or somewhat easy to use (Canvas 64%, Brightspace 64%, Blackboard Ultra 57%). Many students felt that the pilot LMS did not have an impact on the quality of the class or indicated that they did not have an opinion on the matter (Canvas 48%, Brightspace 45%, Blackboard Ultra 52%). Among those students who felt the pilot LMS did have an impact, significantly more students reported a positive impact than a negative impact for Canvas (35% positive, 16% negative) and Brightspace (43% positive, 20% negative). Students' opinions on Blackboard Ultra were more mixed (26% positive, 21% negative).

Ease of feature use

The survey asked about the ease of use of common LMS features (see Table 3). It should be noted that not all respondents used the pilot LMS to complete these tasks. Students' use mirrors that of instructors in all features except assignments. The assignments feature was used by the vast majority of instructors (Canvas 100%, Brightspace 94%) compared to a much smaller proportion of students (Canvas 46%, Brightspace 54%, Blackboard Ultra 81%).

Many respondents found most features easy to use. In Canvas, submitting assignments, looking up grades, and taking a quiz/test were ranked the highest in ease of use. In Brightspace, looking up grades, taking a quiz/test, and accessing course content were ranked the highest in ease of use. In Blackboard Ultra, taking a quiz/test was ranked the highest in ease of use. Much like instructors, students using Canvas rated features as easy more often than their counterparts using Brightspace and Blackboard Ultra.

Table 3: Ease of use ease of features to complete common student LMS tasks

Feature	Canvas			Brightspace			Blackboard Ultra		
	Used	Easy	Difficult	Used	Easy	Difficult	Used	Easy	Difficult
Take a quiz/test	35%	77%	11%	50%	70%	17%	37%	71%	14%
Look up my grades	98%	74%	13%	97%	71%	22%	98%	55%	29%
Submit assignments	46%	79%	15%	54%	68%	20%	81%	65%	22%
Communicate with instructor or classmates	41%	53%	30%	51%	50%	28%	67%	53%	24%
Access course content and/or documents	98%	64%	26%	98%	67%	25%	98%	55%	32%
Participate in discussion forums	25%	66%	18%	48%	59%	24%	68%	54%	28%
Access video content	51%	61%	24%	82%	60%	23%	58%	48%	30%

Overall reaction

When asked if their overall experience with the pilot LMS had been positive, over half of the students strongly or somewhat agreed (Canvas 64%, Brightspace 62%, Blackboard Ultra 56%). However, when asked if they preferred the pilot LMS to myCourses, less than half strongly or somewhat agreed (Canvas 43%, Brightspace 40%, Blackboard Ultra 30%).

In reviewing the open-ended responses provided by students, it is clear that some of the dissatisfaction was related to the pilot itself, such as using more than one LMS at a time and not having a direct link at the top of the myBinghamton portal. Should a new LMS be adopted, these concerns will not be an issue. Some of the preference for the current myCourses also stems from the fact that students are already familiar with the LMS. This would eventually become a non-issue once students graduate and new students enter the university.

When asked if Binghamton University should adopt the pilot LMS, 36% of Canvas and Brightspace respondents said yes compared to only 25% of Blackboard Ultra respondents. In all, 37% of respondents said the University should not adopt the pilot LMS and 28% indicated they had no opinion on the matter. While student opinion was quite mixed, it is worth noting that Blackboard Ultra performed less positively on nearly all measures.

Faculty Focus Group

Faculty interviews subcommittee: Sam Christ, Don Loewen, Brendan McGovern, Amber Stallman, and Ben Turnpenny

Brightspace
There were four faculty members who piloted Brightspace who participated in the focus group interviews. All were very comfortable with the platform and used multiple features. Three out of the four had previous experience with other LMS platforms. Each of the classes that piloted Brightspace had up to 20 students. Each of the participants used or checked in on the LMS on a weekly basis.

Some faculty expressed difficulty with the integration between the LMS and Learning Tools Interoperability (LTI) which is a standard protocol that allows other applications, such as Turn-It-In and Grammarly, to integrate with the LMS.

The faculty found the mobile platform to be useful for reviewing student submissions. One participant responded, "Yes - love it!" - and felt it was much more convenient to be able to review papers and assignments on his iPad.

Help and support for Brightspace was only used a handful of times by the focus group participants. When they did use it, they generally found it to be "fairly helpful".

In general, focus group participants felt positive about their experience with Brightspace, in comparison to myCourses. They also felt that the look and design for Brightspace was nicer than myCourses.

Canvas
There were four faculty members who piloted Canvas who participated in the focus group interviews. Two were generally comfortable and used basic features, while two were very comfortable and used multiple features. Each of the classes in which Canvas was piloted had approximately 20 students. The participants for Canvas were using the LMS on a weekly or daily basis.

Regarding features, one faculty member found the grading and gradebook to be cleaner. The same individual incorrectly perceived the categories did not allow for assignments to be weighted differently.

The faculty used the mobile platform to respond to messages, but felt that it was limited.

One faculty found the online documentation was not helpful and others did not need much support other than a few emails to resolve a problem.

In comparison to Blackboard Learn, the participants found the quiz tools and module structure easier to set up but the gradebook more challenging. All participants really liked how easy it was to embed content and media.

Blackboard Ultra

There was only one faculty member who piloted Blackboard Ultra who participated in the focus group interviews. They were very comfortable with using an LMS, but used only the basic features. They also described themselves as able to figure things out quickly by clicking around. Their class had around 20 students, and they access Blackboard Ultra on a daily basis for posting announcements, communicating with students, and uploading course content. This faculty member is also enrolled in a degree program using Blackboard Ultra as the platform, so they have experienced the LMS as both a student and an instructor.

They opted not to turn on the Ultra course look, feeling that it would be too shocking to the students. They also did not use the mobile app or mobile browser version to access the platform, other than one instance when they attempted to look up something for a student, but found it too confusing.

In general, the faculty member found Blackboard Ultra to be fine. Everything worked as it should. Nothing was difficult, as they had experience with Blackboard Learn. Nothing was impressive either. They did not understand the purpose of the Activity Stream feature, but thought is may be useful for students.

In comparison to Blackboard Learn, the faculty member found Blackboard Ultra to be acceptable and thought other faculty would not object to its adoption. However, they did remark how many of their coworkers were excited about the possibility of switching to something new, as they are not as satisfied with the Blackboard Learn platform.

Canvas and Brightspace

One instructor with 150 students used both Brightspace and Canvas. She was able to compare her experiences in both platforms. She reported needing assistance to initially setup the course in Brightspace, but found Canvas to be more intuitive, and she did not require any assistance with setup. This instructor reported that "making content flow and look nice in Brightspace was a challenge and more work than it was in Canvas." Lastly, she noted that both Brightspace and Canvas look better, are more visually appealing and modern, and a "better experience" than myCourses.

Recommendation

While neither Brightspace nor Canvas stood out as a clear favorite, the faculty focus group agreed the move away from the current platform of myCourses would be beneficial to the faculty.

Student Focus Group

Student interviews subcommittee: Elise Cook, Denise Dedman, Alexandra Laletina, and Shannon Hilliker, and Cherie van Putten

This focus group comprised of six students chosen from students who indicated on the Post Pilot Student Survey that they would be willing to take part in a focus group. Students were selected based on the LMS they piloted with the intent to have equal representation of all platforms. One student represented all three LMS platforms. Two students piloted Canvas, four piloted Brightspace, and two piloted Blackboard Ultra.

Brightspace

This group was made up of four seniors, one being both student and TA. All had used myCourses before this pilot.

When asked how they felt about navigating the platform, they felt that the interface was easy to use but finding content could be difficult. Items could get easily buried with too many menus and drop downs. All students in this pilot indicated difficulties experienced could be due to the professor's use of the platform. All felt the LMS had the potential to be good.

There were a variety of answers regarding what they most liked about the LMS platform. Several liked the announcement tool and the ability to upload files. The student who also served in a TA role liked the gradebook capabilities.There was general consensus that there were too many tabs and at times too much going on. The student involved in all three pilots felt the time tracking feature did not really make sense. The TA felt the gradebook rounding could cause possible issues down the road. The grading decimals were different between the TA view and the student view. A couple students indicated the LMS was overall, underused by the professor.

When asked about what specific features enhanced their learning, one student responded there were no specific features of the platform that enhanced their learning, but there were aspects of the platform that were easier to use or just aesthetically more pleasing. Images were better and submitting files were much easier and intuitive. The student/TA liked that TAs only see their announcements and not the other TAs' announcements. Some of the students had used the mobile site but not the app. Consensus was that it was significantly better than Blackboard mobile platform.

No students had technical difficulties except for a few glitches, such as feedback on paper assignment disappearing and a couple quizzes that did not immediately grade. No one reached out for technical support.

All students in the focus group preferred Brightspace over myCourses. Three of the students stated that the University should move to Brightspace, and one thought the University should move only if it were less expensive.

Canvas

This group was made up of two students, a senior and a junior who had used myCourses before this pilot.

When asked how they felt about navigating the platform, the students responded the interface was clean looking, easy to use, and very searchable. They indicated it was difficult initially since it was a new platform, but becomes easy to use when learned.

When students were asked about what they liked and disliked about the LMS platform, the search function, the modern and clean look, and the mobile app stood out as positives. One student felt there was not much that he did not like about Canvas; the other student indicated there were very minor issues, such as too many tabs that could potentially be useless. It was clear their professors had not removed unnecessary items. Improperly rendered PowerPoints files caused one student to have to download the file because the link would not work properly and slides would either not show up or looked "weird".

When asked about specific features that enhance their learning, assignments and announcements were described as being really nice, and they felt the discussion feature was better. Overall, the platform was described as more intuitive and straightforward than myCourses with the grade notifications and predictions being highly desirable.

In regards to the mobile platform, one student did not use it at all and the other said they did use it but his standards were low based on Blackboard and that the Canvas mobile platform works.

The students did not indicate experiencing problems except for a few "glitches" like the improperly rendered PowerPoints. Neither student reached out for support.

Students preferred Canvas or felt it is on par or better than myCourses. Finally, both of the students stated that Binghamton should move to Canvas, and specified, "we need a change".

Blackboard Ultra

This group was comprised of two students, a senior and a junior, both had used myCourses before this pilot.

When asked about navigating the platform, one student described it as a mix of the current version of Blackboard we use on campus and the app, but not a good mix. The other student "hates" Blackboard. Both felt it was confusing to navigate and it appeared to just be an overlay over our current system with no benefits except slight design improvements.

When students were asked what they most liked and disliked about the LMS platform, one student said there was nothing he liked and the other said some design elements were "not horrible". One student said he did not like Blackboard at all and felt it was categorized weird. There were two sets of tabs and no logic as to the location of content. Both students had issues logging into the LMS.

When asked about specific features to enhance their learning, one student indicated there was nothing that "enhanced" learning. The other student liked the discussion feature but felt it was the same as our current Blackboard, which they stated was antiquated and not great, but still a feature that was positive. Both students indicated Blackboard Ultra was not a good platform and appeared to be just a mix of myCourses with some new features.

In regards to the mobile platform, one student was not aware there was an app but did like the regular Blackboard app which no one else seemed to use. The other student did not use the mobile platform.

Both students experienced login issues throughout the course. One student said as of a week ago (interview May 14, 2019) he could no longer access nor see his course. This is most likely due to course end dates set by professor. Neither used nor reached out for support.

Both students preferred myCourses over Blackboard Ultra, and stated the University should not move to Blackboard Ultra as a new LMS. However, both had heard good things about Canvas at the focus group interview and at other universities through friends and felt it would be a good idea to change to something new.

Overall Feedback and Recommendation

Finally, we asked the students out of all three pilot LMS platforms, was there one they wished they could have tried. Almost all that did not try Canvas wished they had the opportunity as they heard good things. The two students who did get to use Canvas liked the platform, and the one student who piloted the other two platforms as well, preferred Canvas. One Canvas student thought it would be interesting to try out Brightspace and the one student that piloted Blackboard Ultra said they wished they could have piloted Canvas or Brightspace. It was clear to the interviewers the students all felt the University should move away from Blackboard Learn, with a slight preference for Canvas.

Technical Review

Technical review subcommittee: Mike Allington, Mike Hizny, Scott Geiger, Tamara L Regulski, and Michael Vermilyea

The objective of our technical evaluation is to ensure that ITS is able to provide the same or similar integrations and support for the LMS systems evaluated in the pilot as is currently provided for myCourses/Blackboard. For the pilot, ITS did not complete a full ILP (real-time) integration for each LMS but used flat files and daily uploads to maintain course enrollments.

Single Sign-On
CAS setup for each system was very straightforward, and ITS did not encounter any problems.

Ellucian Intelligent Learning Platform (ILP) (Real-time Integration)
While each system supports Ellucian ILP, there will need to be a significant amount of development and testing to ensure the ILP integration provides the expected results with the selected LMS. Each LMS interprets the information provided through ILP slightly differently so we will need to make sure ILP and the LMS are configured for the desired results.

ITS did experience challenges with cross-listed course names after the manual enrollment process. They were able to rectify these issues by manually manipulating the course names in the upload file- depending on how the LMS interprets information from ILP, some course names may reflect a different naming scheme than expected.

There will likely continue to be "Post Bulk Load" action required for all three systems similar to what takes place currently in myCourses. These actions include updating cross listed parent names, provisioning of staff, and updating email addresses

Data Access
ITS heavily relies on access to day-old-data in our current Blackboard LMS. ITS will need to develop methods to access the data in any new system, either directly (through database access) or through REST APIs. If an LMS does not have direct database access, ITS will need to develop new tools to access the data through REST APIs. This should be a consideration when estimating the time to implement a new LMS if there is not direct database access.

Archiving Course/Student Material
At the end of the pilots, the pilot support staff discovered there is no way to bulk download course material from Canvas and Brightspace. The individual faculty would need to download the material from each student for each course if they are going to store it for record keeping/archival purposes. Blackboard allows faculty to "archive" a course that can include all of the content, including student work.

Technical Documentation
Documentation is very important for developers and application administrators to understand how an application is designed and what is expected. Canvas has very good technical documentation that we found to be better than Brightspace or Blackboard.

Summary
In summary, all three systems (Blackboard Ultra, Canvas, and Brightspace) can use CAS for Single Sign-On and are supported through Ellucian ILP. All current LTI integrations are supported in each LMS.

Estimated Five Year Cost Based on Initial Pricing

Platform	Five Year Total Cost (w/o 24x7 Support)	Five Year Total Cost (w/ 24x7 Support)
Current Blackboard Learn	$1,521,582	$1,643,782
Brightspace	$797,050	$1,048,639
Canvas	$1,123,970	$1,339,364
Bb Ultra	$1,319,041	$1,441,241
Bb Ultra with Analytics	$1,760,531	$1,882,731

Five Year Total Cost by Platform
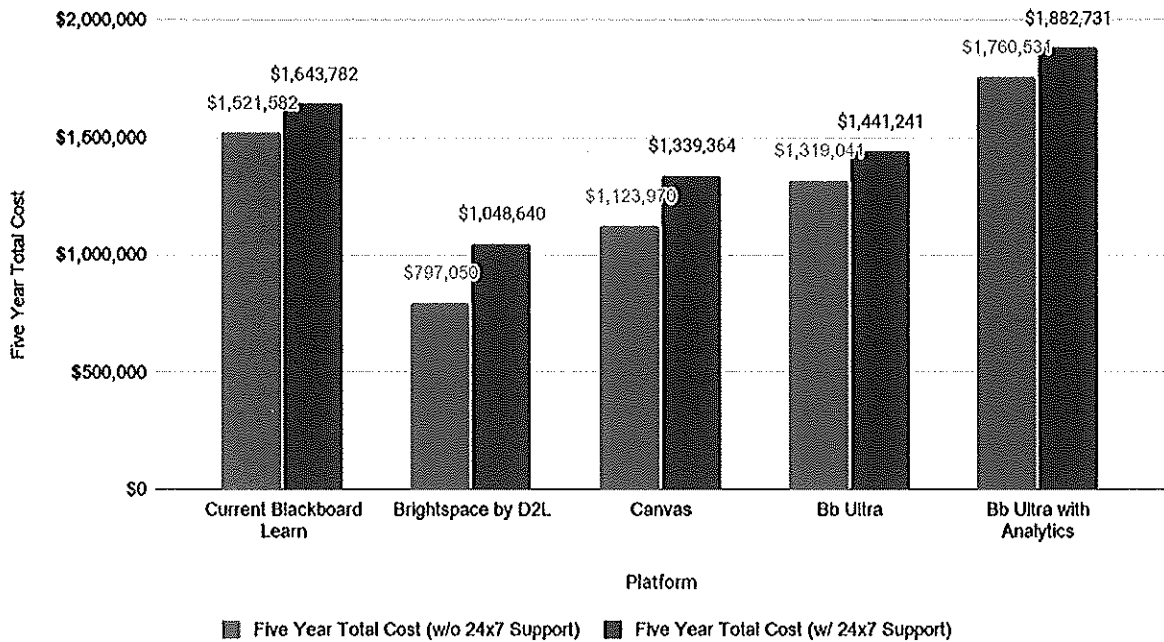
Note: Red bar indicates our current configuration - Blackboard Learn without 24x7 support

Current Blackboard Learn

	Year 1	Estimated Year 2	Estimated Year 3	Estimated Year 4	Estimated Year 5
FTE	17,351	17,351	17,351	17,351	17,351
Software Licenses*	$125,597.00	$129,364.91	$133,245.86	$137,243.23	$141,360.53
Managed Hosting	$161,000.00	$165,830.00	$170,804.90	$175,929.05	$181,206.92
Subtotal	$286,597.00	$295,194.91	$304,050.76	$313,172.28	$322,567.45
24x7 End user Support	$22,140.00	$22,140.00	$22,140.00	$22,140.00	$22,140.00
24x7 Support Implementation	$11,500.00				
Subtotal	$33,640.00	$22,140.00	$22,140.00	$22,140.00	$22,140.00
TOTAL	$320,237.00	$317,334.91	$326,190.76	$335,312.28	$344,707.45

Canvas

	Year 1	Year 2	Year 3	Year 4	Estimated Year 5
FTE	17000	17000	17000	17000	
Cost per FTE*	$11.93	$12.29	$12.66	$13.04	$13.43
Software	$202,810.00	$208,930.00	$215,220.00	$221,680.00	$228,330.40
Implementation	$47,000.00				
Subtotal	$249,810.00	$208,930.00	$215,220.00	$221,680.00	$228,330.40
24x7 End user Support	$40,562.00	$41,786.00	$43,044.00	$44,336.00	$45,666.08
TOTAL	$290,372.00	$250,716.00	$258,264.00	$266,016.00	$273,996.48

Brightspace

	Year 1	Year 2	Year 3	Year 4	Year 5
FTE	17351	17351	17351	17351	17351
Cost per FTE	$9.75	$9.75	$9.75	$9.75	$9.75
Software	$169,172.25	$169,172.25	$169,172.25	$169,172.25	$169,172.25
Implementation	$35,775.00				
Discount	-$84,586.13				
Subtotal	$120,361.12	$169,172.25	$169,172.25	$169,172.25	$169,172.25
24x7 End user Support	$50,317.90	$50,317.90	$50,317.90	$50,317.90	$50,317.90
TOTAL	$170,679.02	$219,490.15	$219,490.15	$219,490.15	$219,490.15

Blackboard Ultra

	Year 1	Estimated Year 2	Estimated Year 3	Estimated Year 4	Estimated Year 5
FTE	17,351	17,351	17,351	17,351	17,351
Software Licenses*	$121,939.00	$125,597.00	$129,364.91	$133,245.86	$137,243.23
Learn SaaS Advantage (replaces Managed Hosting)	$124,625.00	$128,363.75	$132,214.66	$136,181.10	$140,266.54
Implementation	$10,000.00				
Subtotal	$256,564.00	$253,960.75	$261,579.57	$269,426.96	$277,509.77
24x7 End user Support	$22,140.00	$22,140.00	$22,140.00	$22,140.00	$22,140.00
24x7 Support Implementation	$11,500.00				
Subtotal	$33,640.00	$22,140.00	$22,140.00	$22,140.00	$22,140.00
Analytics for Learn License Cost	$33,110.00	$33,110.00	$33,110.00	$33,110.00	$33,110.00
Analytics for Learn Annual Managed Hosting	$45,900.00	$45,900.00	$45,900.00	$45,900.00	$45,900.00
Analytics for Learn Implementation	$46,440.00				
Subtotal	$125,450.00	$79,010.00	$79,010.00	$79,010.00	$79,010.00
TOTAL	$415,654.00	$355,110.75	$362,729.57	$370,576.96	$378,659.77

*3% increase per year

Accessibility Review

Accessibility subcommittee: Tim Cortesi and Dianne Gray

Legal Landscape
Institutions are legally obligated under Section 508 to provide equal access to electronic information technology. Section 504 requires equal opportunity to participate in programs and services. The ADA requires title II entities (State and local governments) communicate effectively with people who have communication disabilities. The ADA covers colleges and universities, but not their software vendors. Although the language of the ADA does not explicitly mention the Internet, the U.S. Department of Justice has taken the position that title II covers Internet Web site access.

The past few years have seen significant increases in legal action regarding accessibility of online and video content for users with disabilities. It is critical for Binghamton University to remain proactive in complying with SUNY System and Federal mandates/policies with regards to its public-facing content.

Recommendation
It is safe to say all of these tools offer a much-improved accessibility experience over our current Blackboard Learn. With that being said, the following can be concluded:

Brightspace and Canvas seem to both provide a very good accessibility experience, with Brightspace edging out Canvas due to their more comprehensive responses in the WCAG Analysis, and other anecdotal conversations with the vendors.

Blackboard Ultra, by contrast, seems to take an oddly lackluster approach to accessibility, whereby they recognize their shortcomings but have not translated that recognition into making a more accessible product.

Notably, and critically, it is important to note the accessibility analysis above only pertains to the way in which these applications function on their own, and says nothing of the content which may be uploaded into each of these platforms by an instructor during normal use of the LMS. Content created outside of the LMS and then uploaded into the LMS (Word documents, PDFs, etc.) is the university's largest concern when it comes to accessible course content. While some of these platforms assist in creating "accessibility friendly" media for content which originates within that LMS (Brightspace as built-in functionality and Canvas through the and Universal Design Online Content Inspection Tool (UDOIT) created by the University of Central Florida), none of these platforms contain a mechanism for checking the accessibility of uploaded content or automatically converting any/all content into an accessible format.

As a result, a product such as Sensus Access is recommended for migrating and generating accessible content. The Sensus Access LTI, "makes alternate media conversion directly available from within popular learning management system and virtual learning environments." Currently, Brightspace is not supported by the Sensus Access LTI.

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Observations from pilot support staff

Both Canvas and Brightspace
The out of the box analytics provided are significantly better than what is provided currently by Blackboard. Various reports can be created easily on the administrator and instructor level on login, clicks, usage, grades, etc. To have this same functionality with Blackboard, we would need to purchase an additional product called Blackboard Analytics for a significant cost.

All third-party tools the support team integrated (Panopto, Turnitin, Google Drive) were implemented easily.

One of the greatest attributes for both systems, are administrators have the ability to impersonate any user, which makes troubleshooting much easier.

Canvas
User and course management was very easy and intuitive. At the admin level, it is easy to search for courses based on instructor and course name, and the interface has much of the needed information on a course highly visible and filterable on the main courses screen without additional clicks into buried menus.

Turnitin LTI integration was confusing with using Canvas' Speed Grader rather than Turnitin's Feedback Studio. Should we chose to use Canvas, we would need to look into the Turnitin integration more closely.

Canvas is an open-source platform, which will allow us to build onto it's code and add functionality that may be missing.

Brightspace
Administering Brightspace was challenging at times due to its overly complicated backend interface. The admin interface is very similar to Blackboard in that it has many areas with unclear titles and processes take several steps on multiple screens. We had to consult D2L support quite often during the initial setup and throughout the pilot to seek clarification on how to complete certain tasks due to non-intuitive interfaces. D2L support was exceptionally responsive, and at times were able to build added functionality into the product quickly.

In addition, there are many options when it comes to course, user, and access creation and management. The university could potentially give specific units (school, depeartment, etc.) a personalized look and feel to the system based on their needs and preferences. This could be seen as a benefit, because it allows for greater control and personalization over the system. This could also be a drawback, as the quantity of choices required to be made during implementation and the potential for mistakes due to human error may be high due and the potential for issues for support staff due to differing interfaces.

Blackboard Ultra
Although Blackboard Ultra is an improvement from the current Blackboard Learn interface in terms of mobile accessibility and general aesthetics, the product is not where it needs to be yet. It is missing some features that are available in Blackboard Learn, some of which are on the product roadmap, others are not.

Blackboard Ultra conducted a second demo at the end of the spring 2019 semester, and it was clear the product is being improved upon, even from the first demo in fall 2018. Should we decide to not move to a different LMS entirely, it may be worth investigating the implementation of cloud hosted Blackboard, if not Ultra as well.

Final Evaluation Summary

Data Source	Result
Faculty Panels	No preference
End of Term Surveys	Only the faculty clearly indicated the university should move away from Blackboard Learn. The students were mixed.
Faculty	Slight preference for Canvas
Student	No preference
Focus Groups	Both faculty and student indicated the university should move away from Blackboard Learn.
Faculty	No preference
Student	Slight preference for Canvas
Technical Review	No Preference
Estimated Five Year Cost Based on Initial Pricing	Brightspace
Accessibility Review	Slight preference for Brightspace
Observations from pilot support staff	Canvas

Appendixes

Appendix 1: Faculty Panel Comments

Brightspace

Pros

<u>General</u>
- Overwhelmingly positive user experience
- Mobile friendly
- Resizes to the screen size nicely to accommodate various screen sizes (tablet and mobile included)
- The option of adding a banner to customize the course is a nice feature, able to introduce the topic of the course
- Built course in myCourses and Brightspace - students chose to use over myCourses when given choice
- TAs find it easier that myCourses

<u>Communication</u>
- Easy to access announcements
- Able to add discussion threads to content modules is very easy and fosters dialogue in the classroom.
- Printing discussion posts is uncluttered and useful
- If an update is needed, it's possible and easy to notify students that the content/file has changed, and add a summary of the changes.
- Automatically receive email alerts for # of "Unread Discussion Posts" in discussion forums.
- In the Course Home, Activity Posts, it is possible to attach a link to existing activities, e.g. an event in the Calendar, and it gets nicely displayed, visible and accessible.
- Separated areas for each lab within the course allows for the conditional release of announcements by lab section
- Able to generate canned emails based on algorithms (i.e. having logged in [x] days, haven't submitted an assignment, etc.)
- It is very quick to create "Events" posts, they look friendly and accessible straight from the Course Home page.

<u>Content Creation</u>
- Very accessible and easy to set up the calendar, links nicely to course content, discussions, links to Google Calendar
- Easy to bring in content, drag and drop content creation. Smooth, streamlined, quick content creation - able to do everything at once place
- Table of contents automatically created and easy to move around content using drag and drop
- The material opens directly into the system without having to download, renders well
- Default to add linked resources as an internal resource with the option of "Open as External Resource."

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- Direct links within Brightspace vs frames within Blackboard - can just email a link versus having to tell students how to navigate to an item
- Calendar
  - Easy to use
  - Can add lectures and discussions directly
  - Due dates appear automatically
  - Conditional release is easy to manage
    - Only see assignments based on when they complete another assignment
    - Can send out announcements based on if assignments are complete
    - Can set up reminder emails based on activity
- Able to breakout sections so TA only have access to their section
- Built-in video preferred over Panopto

Assignments, Tests, and Grading
- Grading is easy to use, intuitive
- Annotation of assignments for grading seemed easier than Bb
- Can see what students are doing easily via the Class Progress area
- Better management with sections in Brightspace and was able to see all grades while also allowing TAs to work with their lab section.
- Easier to monitor student progress under Class Progress as compared to Bb's Retention center

Cons

General
- There were mixed feelings from students
- Had to contact support because the documentation didn't have what was needed
- The web version and mobile version looks quite different, do not like app icon and name (Pulse)

Content Creation
- Needed to clean up materials when you import them in, not a real challenge but not super easy either

Canvas

Pros

General
- Canvas support was immediately helpful; chat support worked well
- Graduate students were able to learn this very quickly
- Student experience on the phone was better than Bb; students really liked Canvas
- One course, multiple sections
- Time-saving (roughly half the time)

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Communication
- Discussion Tool is simple to use

Content Creation
- Easy to upload and arrange files in a separate area for files
- Linking and uploading much smoother than Bb
- Was able to use Canvas instead of Google Drive for sharing files
- Multiple views of the same content
  - Organization (Modules) by topics
  - Assignments (Just assignments)
- More flexibility with course content and navigation.
- The conditional release has potential but did not use
- Working with modules and appreciated flexibility in structure

Assignments, Tests, and Grading
- Excited about the idea of markup for assignments, but has not used yet
- Mobile grading
- Overall easier to grade
- Speedgrader interface is better than the TII interface with Bb
- Gradebook - Plugin projected grades
- Grading is more straightforward than Bb

Cons

General
- Outdated answers online
- Instructions are not clear
- No photo roster (not available in myCourses as well)
- Test student use was not easy
- Not a lot of control on the main page

Communication
- No anonymous discussion
- The download of the discussion board is not pretty
- Can't send emails without the course being turned on

Content Creation
- Could not figure out to have students generate content easily (said it wasn't possible, but it is possible, she just was unable to figure it out)
- Many layers in canvas
- Hard to envision how to adjust the formatting of content to fit into Canvas's structure and tools that differ in some ways from how they are handled in Blackboard.

Assignments, Tests, and Grading
- No ability to hide grades - can mute, but need to remember to unmute
- Cannot hide columns in the grade book
- Cannot remove the total column

- Can't view grade stats easily, unable to figure out to do this if it is available
- Exams - not great; Canvas recommends making an exam in Blackboard and importing into Canvas, not able to import exams directly from a spreadsheet
- Mobile app is underpowered - Can't enter grades in the mobile app, just a wrapper for viewing content
- Quizzes have shortcomings

Blackboard Ultra

Pros

- Cleaner interface
- Attendance was a nice function
    - The feature will be pushing to Learn platform in a future update
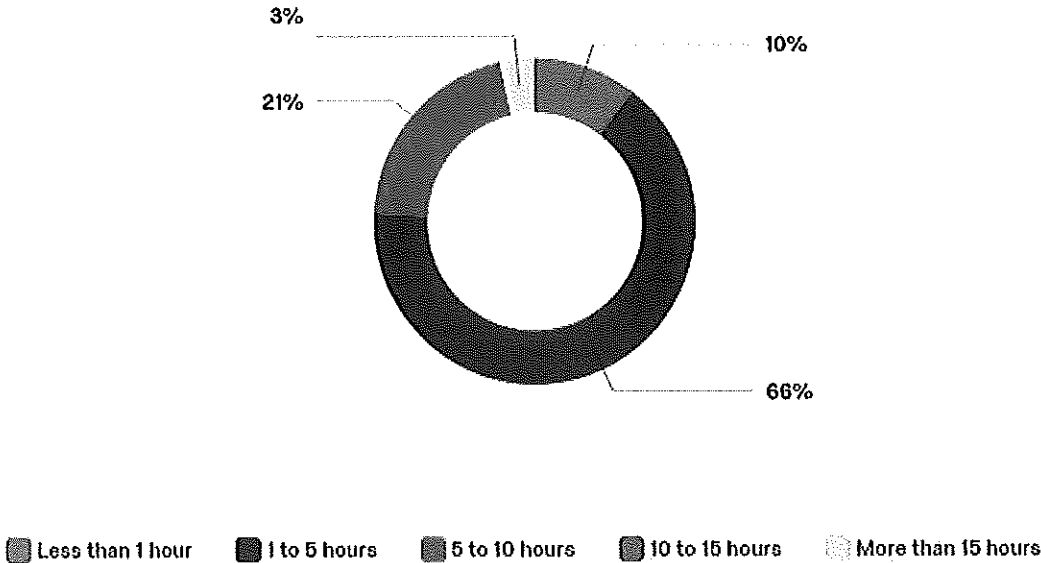
Cons

- Tedious transfer of content in each term
- Language (only English)
- Grades
    - Too many clicks to comment
    - List of students too many rows
- Doesn't always take you to the right place for grading
- Terrible mobile interface
- Discussion document export unorganized
- Child course is not as easy to use
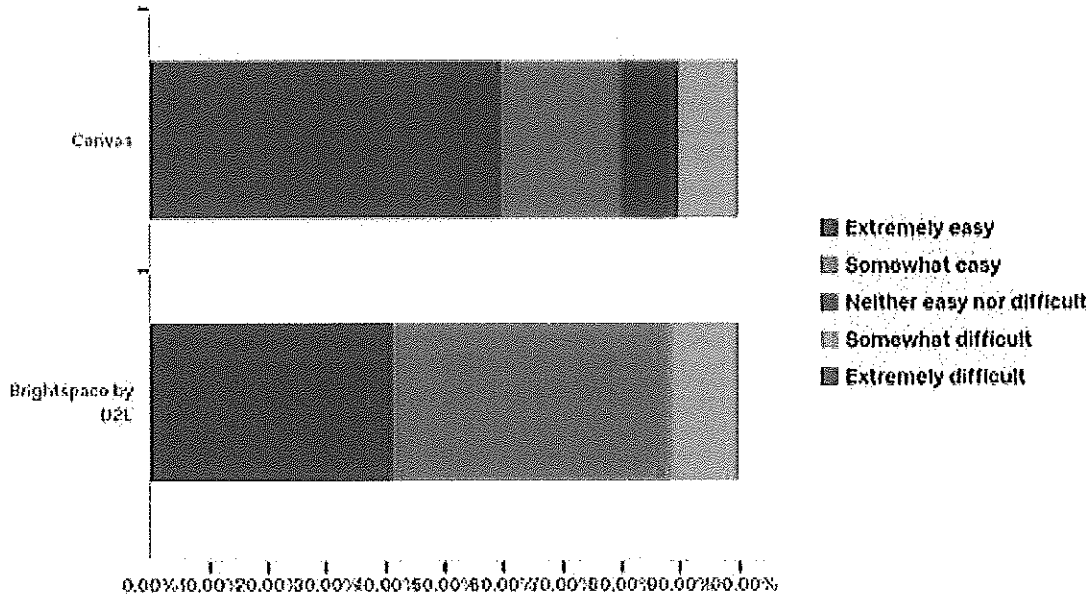
Appendix 2: Post Pilot Instructor Survey

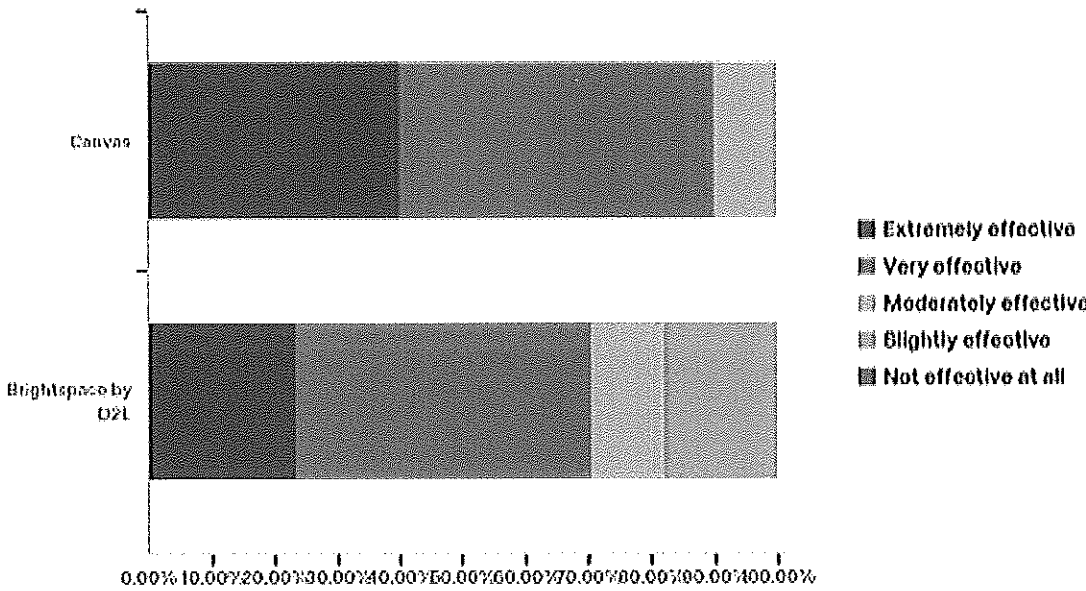**Which LMS did you pilot this semester?**
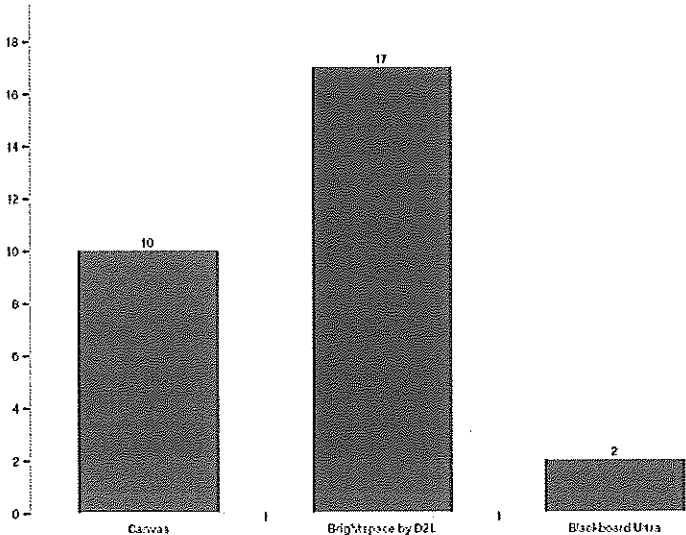
On average, how many hours per week did you spend per week using the pilot platform for your course this semester?

Less than 1 hour   1 to 5 hours   5 to 10 hours   10 to 15 hours   More than 15 hours

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Please rate the overall ease of use of the pilot platform in meeting your teaching needs.

Legend:
- Extremely easy
- Somewhat easy
- Neither easy nor difficult
- Somewhat difficult
- Extremely difficult

Categories: Canvas, Brightspace by D2L

0.00% 10.00% 20.00% 30.00% 40.00% 50.00% 60.00% 70.00% 80.00% 90.00% 100.00%

Please rate the overall effectiveness of the pilot platform in meeting your teaching needs.

Legend:
- Extremely effective
- Very effective
- Moderately effective
- Slightly effective
- Not effective at all

Categories: Canvas, Brightspace by D2L

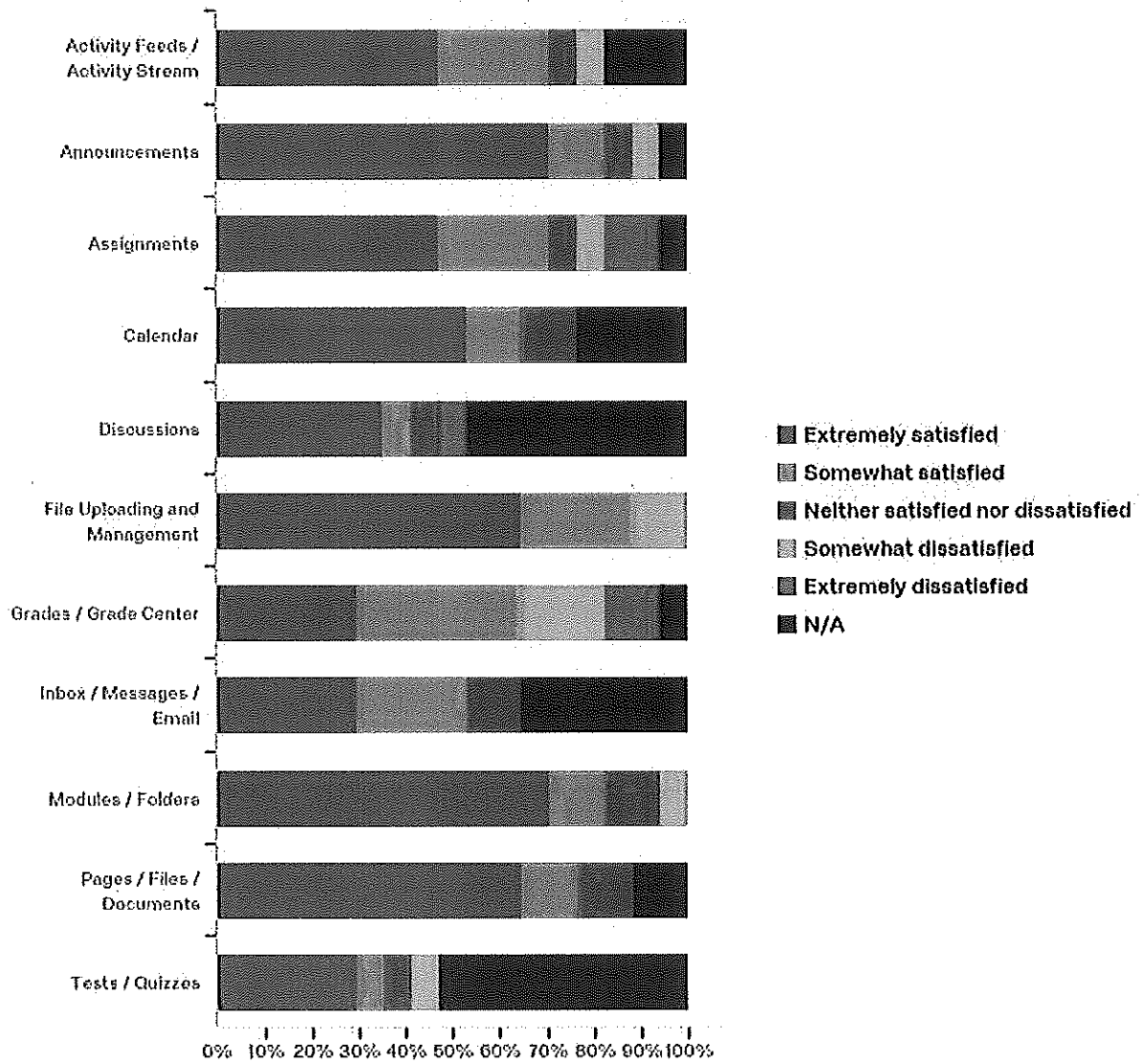0.00% 10.00% 20.00% 30.00% 40.00% 50.00% 60.00% 70.00% 80.00% 90.00% 100.00%

Please rate your experience with the following pilot platform features. LMS specific labels for features will be indicated where applicable. If you did not use a feature or this feature does not apply to the LMS you were using, please select "N/A."
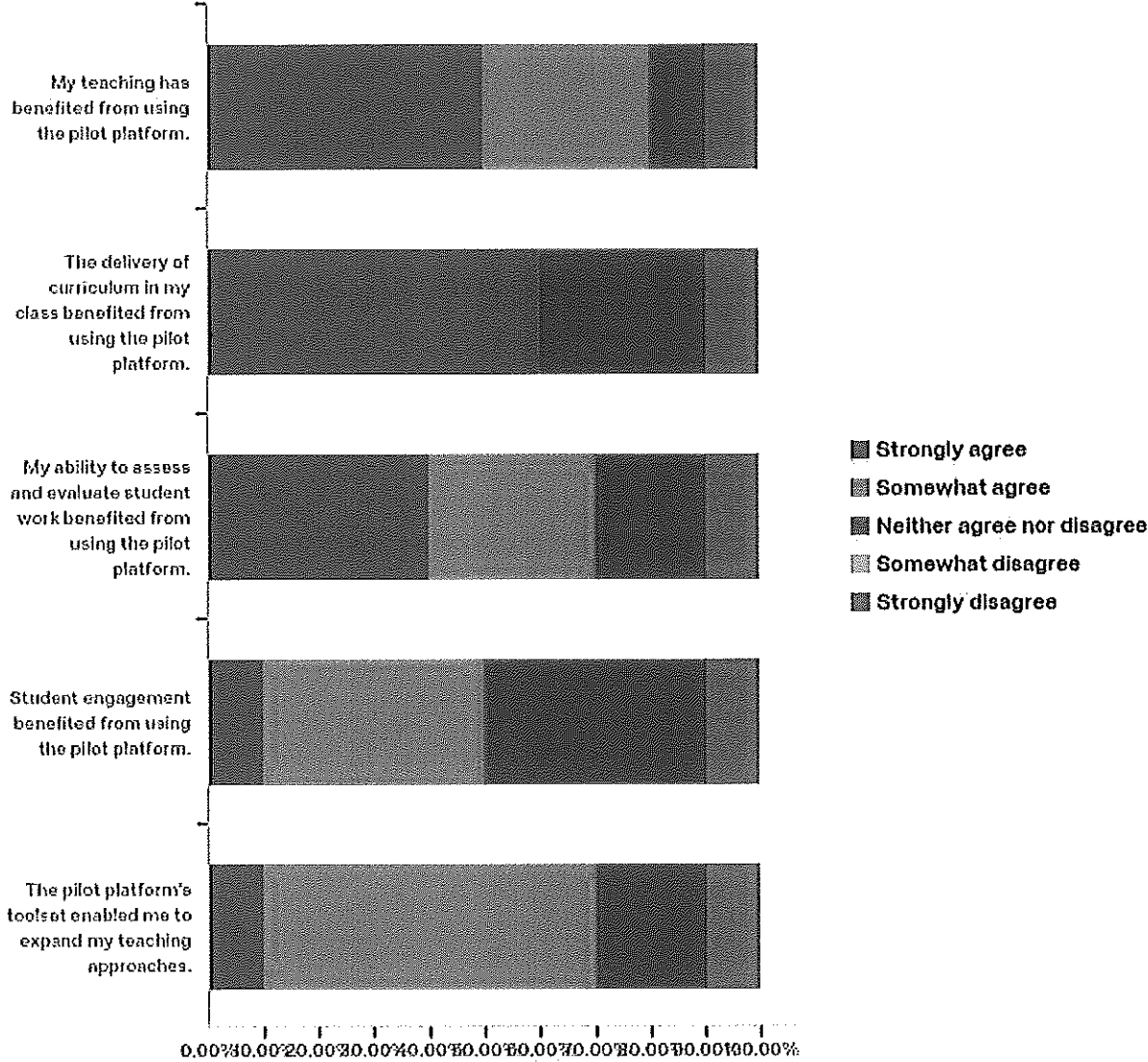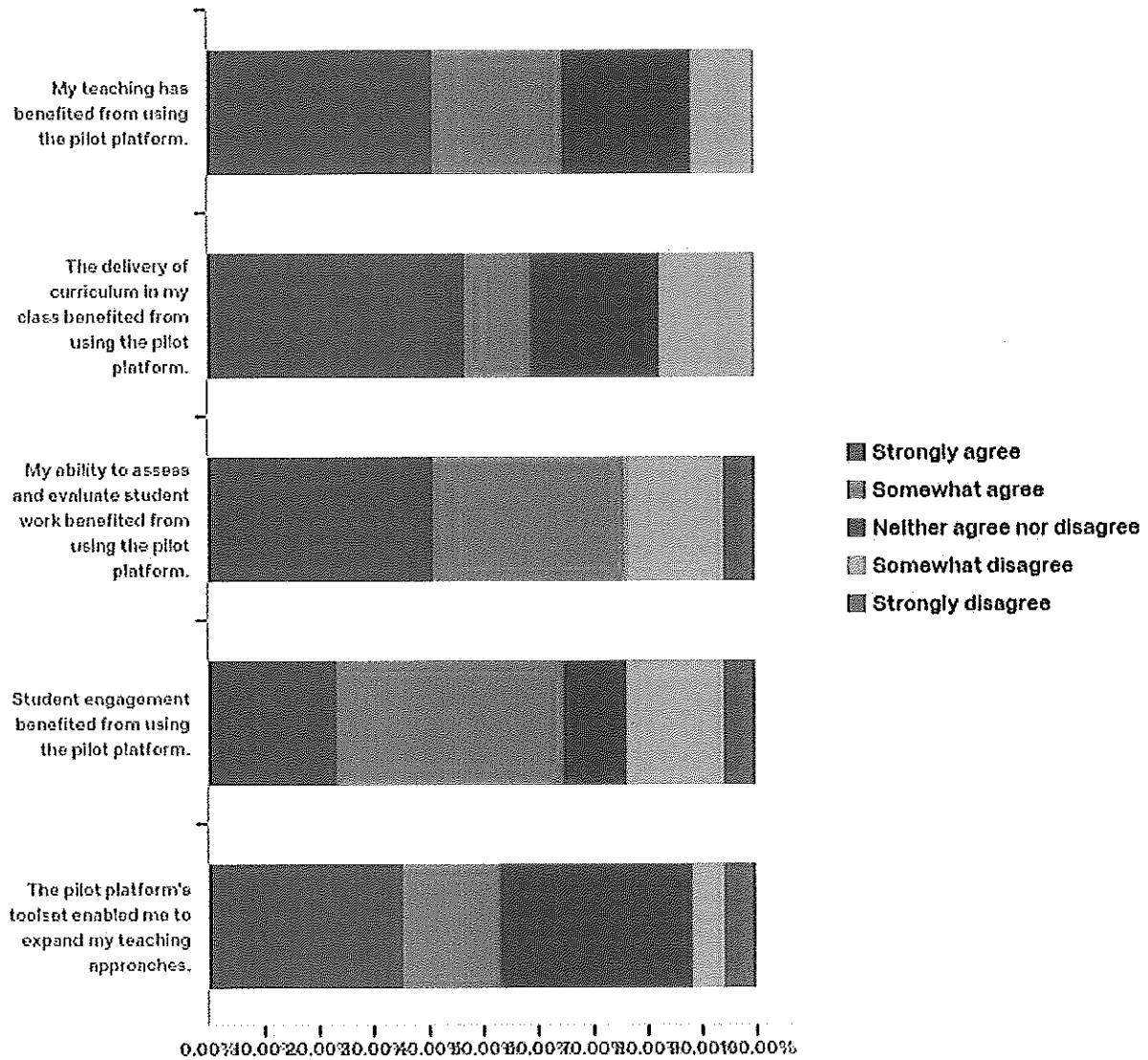
Canvas

- Extremely satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Extremely dissatisfied
- N/A

Brightspace by D2L

Stacked bar chart showing satisfaction ratings for Brightspace by D2L features. Categories (top to bottom): Activity Feeds / Activity Stream, Announcements, Assignments, Calendar, Discussions, File Uploading and Management, Grades / Grade Center, Inbox / Messages / Email, Modules / Folders, Pages / Files / Documents, Tests / Quizzes. X-axis from 0% to 100%.

Legend:
- Extremely satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Extremely dissatisfied
- N/A

Please rate the extent to which you agree/disagree with the following statements.

Canvas

Legend:
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Categories (y-axis):
- My teaching has benefited from using the pilot platform.
- The delivery of curriculum in my class benefited from using the pilot platform.
- My ability to assess and evaluate student work benefited from using the pilot platform.
- Student engagement benefited from using the pilot platform.
- The pilot platform's toolset enabled me to expand my teaching approaches.

x-axis: 0.00% 10.00% 20.00% 30.00% 40.00% 50.00% 60.00% 70.00% 80.00% 90.00% 100.00%

Brightspace by D2L

My teaching has benefited from using the pilot platform.

The delivery of curriculum in my class benefited from using the pilot platform.

My ability to assess and evaluate student work benefited from using the pilot platform.

Student engagement benefited from using the pilot platform.

The pilot platform's toolset enabled me to expand my teaching approaches.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

0.00%10.00%20.00%30.00%40.00%50.00%60.00%70.00%80.00%90.00%100.00%

For each of the following tasks, please indicate if you prefer the current myCourses system or the pilot platform. If you did not use a feature or the statement does not apply to your usage, please select "N/A."

Canvas

Legend:
- Prefer the pilot platform
- Prefer myCourses
- No preference for one over the other
- N/A

Bar chart categories (top to bottom):
- Navigating Course Settings and Features
- Creating/Posting/Organizing Course Content
- Creating and Managing Assignments
- Creating and Managing Quizzes/Tests
- Managing grades in the grade center
- Communication with individual/groups of students or the entire class
- Posting announcements

X-axis: 0.00% 10.00% 20.00% 30.00% 40.00% 50.00% 60.00% 70.00% 80.00% 90.00% 100.00%

Brightspace by D2L

Legend:
- Prefer the pilot platform
- Prefer myCourses
- No preference for one over the other
- N/A

Categories (top to bottom):
- Navigating Course Settings and Features
- Creating/Posting/Organizing Course Content
- Creating and Managing Assignments
- Creating and Managing Quizzes/Tests
- Managing grades in the grade center
- Communication with individual/groups of students or the entire class
- Posting announcements

X-axis: 0.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00%

Please rate your level of satisfaction with the following support resources available during the pilot. If you did not use a resource, select N/A.

Canvas

Legend:
- Extremely satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Extremely dissatisfied
- N/A

Brightspace by D2L

Legend:
- Extremely satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Extremely dissatisfied
- N/A

Categories (y-axis):
- Binghamton's Center for Learning and Teaching
- Binghamton ITS Help Desk
- The pilot platform's Support
- The pilot platform's online guides and support resources

X-axis: 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Have you tried any tools in the pilot LMS that you have not used in myCourses? If so, please indicate which tool or tools.
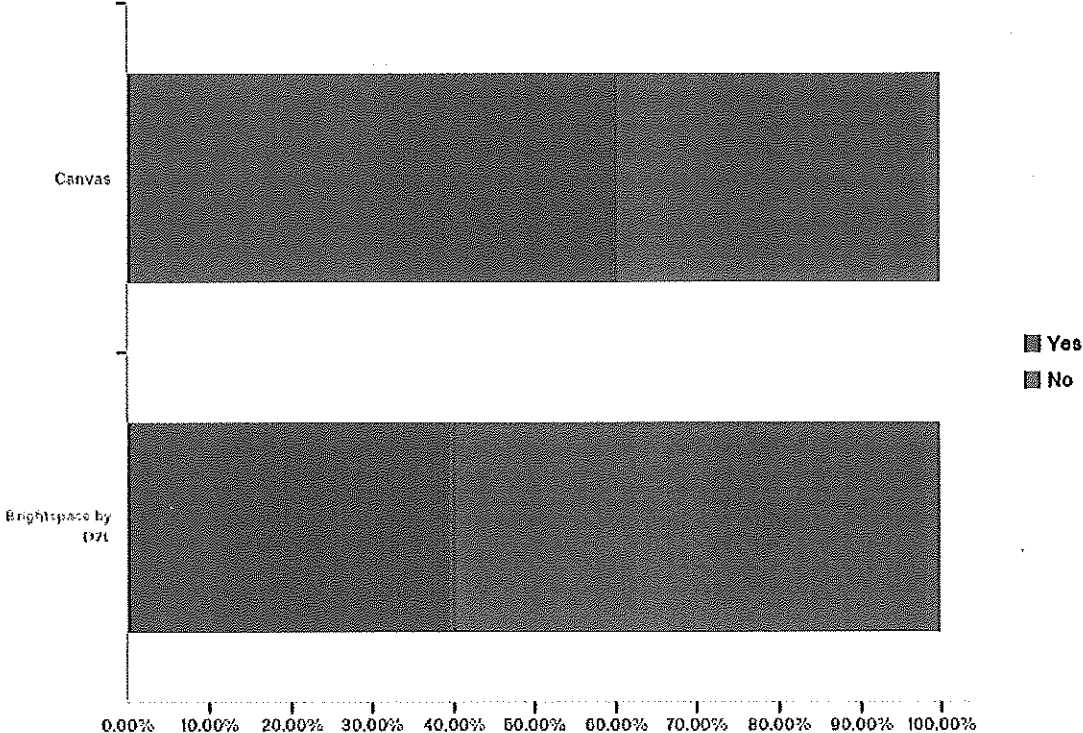
Canvas	Brightspace
quizzes, modules	I never used the calendar before
attendance	Grades
Quizzes	Discussions, surveys, class progress, checklists, activity stream
Modules	Discussion threads.
Module, discussion	Panopto

As compared to myCourses, what aspects of the pilot platform worked well?

Canvas

- modules
- Speed, ease of organizing files, overall look
- Posting materials, especially using external links. The module structure also works well.
- Just easier to use and navigate. More intuitive and visually appealing.
- I liked the modules, the ease of setting up grading, and creating pages.
- Everything is better. In particular, quizzes are awesome. Uploading is so much easier.
- Everuthing (sic)
- Design looks nicer and cleaner. A big problem with myCourses is that it simply does TOO much, with too many options - it's confusing.
- Announcements, file organization, assignments

Brightspace

- so much easier to navigate, create modules, upload docs, gradebook
- announcements, leave messages for students, easy to upload files
- The visual presentation to the students is much more effective and up to date.
- The variety of instruments offered in the system makes it easier for our students to obtain information and to give them information using difference sources.
- The interface is much nicer
- The gradebook and assimilating all of the lab sections under one course really helped to improve my setup of the course. Also, the mobile use of Brightspace for when students had a question after class could be addressed right away, rather than waiting to set up an appointment to discuss something like their grade.
- The general user interface is cleaner and top-level features are easier to navigate.
- The content feed and announcements on the same screen is an appealing feature.
- See previous responses, but basically everything is easier in D2L than myCourses
- Overall look and user experience
- Managing grades, seeing new assignment submissions, grading
- Grading assignments and being able to upload files.
- Grade on the screen and port the grades directly to grade center
- Content modules & TOC especially.
- Conditional releases are great tools; providing outside content and administrating assignments is much easier
- Brightspace is much more visibly appealing. I liked that you could email students that did not submit and assignment directly from the submissions page.

As compared to myCourses, what aspects of the pilot platform could be improved?
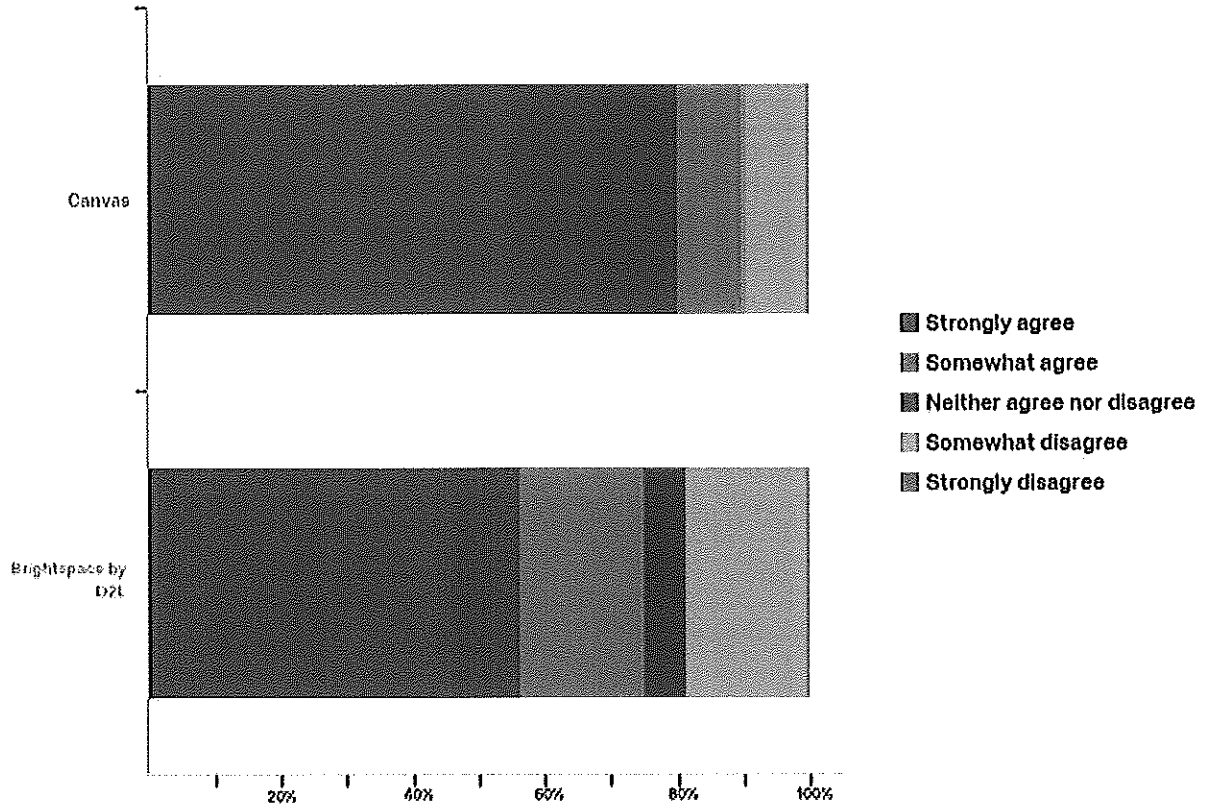
Canvas

- I did not like that the Discussion submission were not time-stamped, and the only way to set a due date was to close the discussion entirely. TurnItIn needs to be better integrated as well. I use that to grade all student papers and it is difficult for them to find how to access my comments (I still don't know exactly where to tell them to go).
- ease of navigation
- Testing; I did not try to use a test, but had reason to construct one. Test construction is clearly easier in myCourses/Bb
- Online quizzes. Also, there are no options for students with special need.
- Posting grades was a disaster - extremely counterintuitive - took us many hours to figure it out and we had many problems. Canvas seems to be designed more for online courses than for simply communicating with students and posting grades.
- Nothing as compared to myCourses. I have other possible upgrades for Canvas, but its way better than myCourses.
- NA

Brightspace

- I loved all of the parts I utilized!
- The grading, the external sources interface
- The activity stream is a bit confusing at first for users coming from myCourses, but works well if seen as its own.
- The announcements being sent as emails as well was easy with Blackboard, but with Brightspace, I or my TAs need to send both and announcement and an email to ensure that the students receive the information.
- Complicated set-up for assignments and syncing with gradebook. Issues with TurnItIn integration. Students had challenges navigating site - esp. finding course content and seeing feedback on assignments entered in TurnItIn.
- Not sure. They have similar functions but just different methods of doing them.
- I think Brightspace is already an improvement; myCourses interaction is cluttered.
- Embedding content such as images in the body of the email did not work well.
- It requires linking the assignment with the grade center, which was unknown to me and I have to figure out after 30 minutes battle.
- none
- Clarity about putting in grades in Turnitin versus into the gradebook. I think I had the same problem with myCourses, but it was a little more confusing for D2L because of the different places where I could enter grades when I linked assignments to Turnitin.
- None
- It is far to clicky.
- Linking assignments to grade items was more cumbersome in Brightspace than in MyCourses. Panopto integration was more difficult in Brightspace.
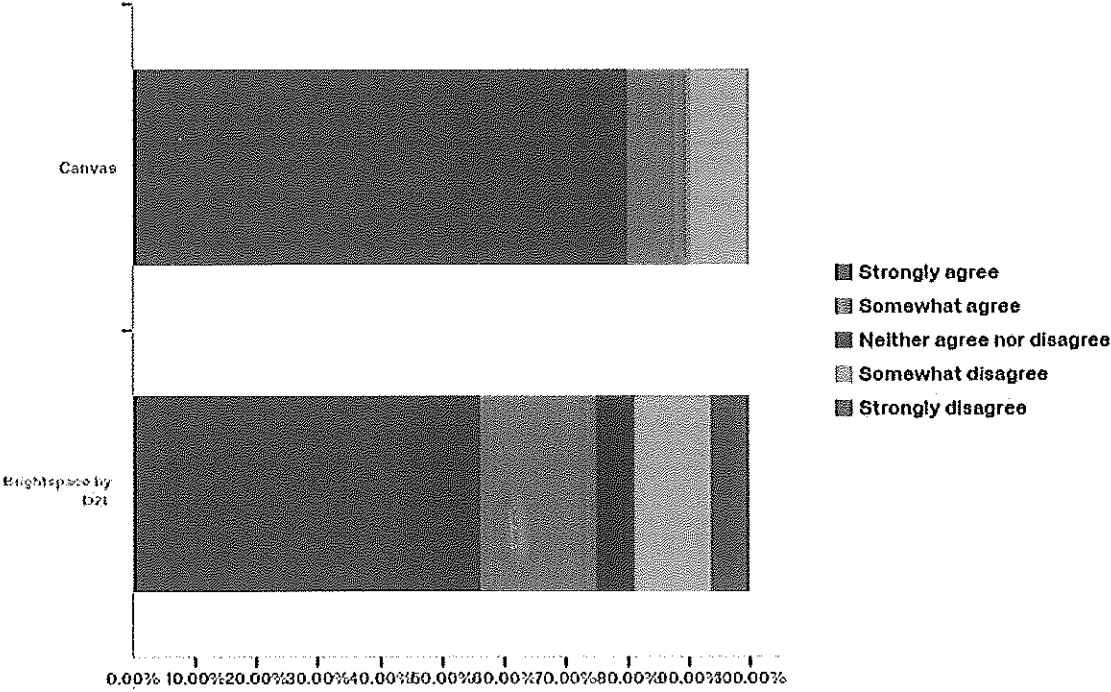
46

- Grading could be improved only slightly - slow to load with a large class

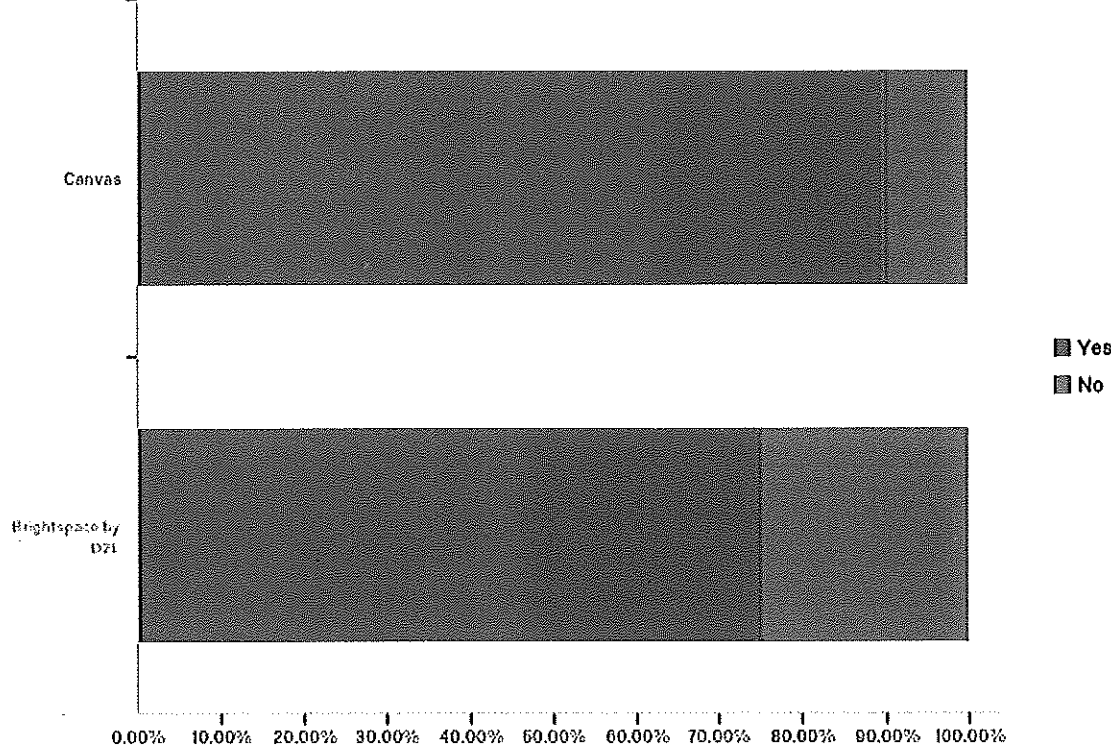## Overall, my experience with the pilot platform has been positive.

Legend:
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

I prefer the pilot platform to Binghamton's current myCourses LMS.

Legend:
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

X-axis: 0.00% 10.00% 20.00% 30.00% 40.00% 50.00% 60.00% 70.00% 80.00% 90.00% 100.00%

Categories: Canvas, Brightspace by D2L

Binghamton University should adopt the pilot platform as our LMS.

Legend:
- Yes
- No

X-axis: 0.00% 10.00% 20.00% 30.00% 40.00% 50.00% 60.00% 70.00% 80.00% 90.00% 100.00%

Categories: Canvas, Brightspace by D2L

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Appendix 3: Post Pilot Student Survey

Which LMS did you pilot this semester? Select all that apply.
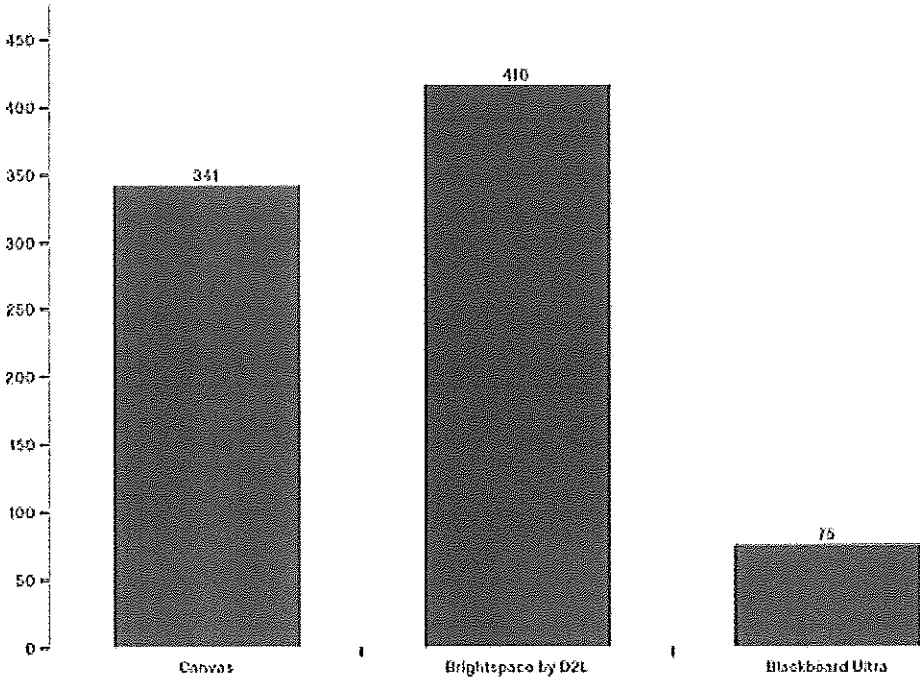
What is your current academic level?

First-year undergraduate   Second-year undergraduate   Third-year undergraduate

Fourth-year undergraduate   Masters student (MA, MS, MBA, etc.)   Doctoral student

Other
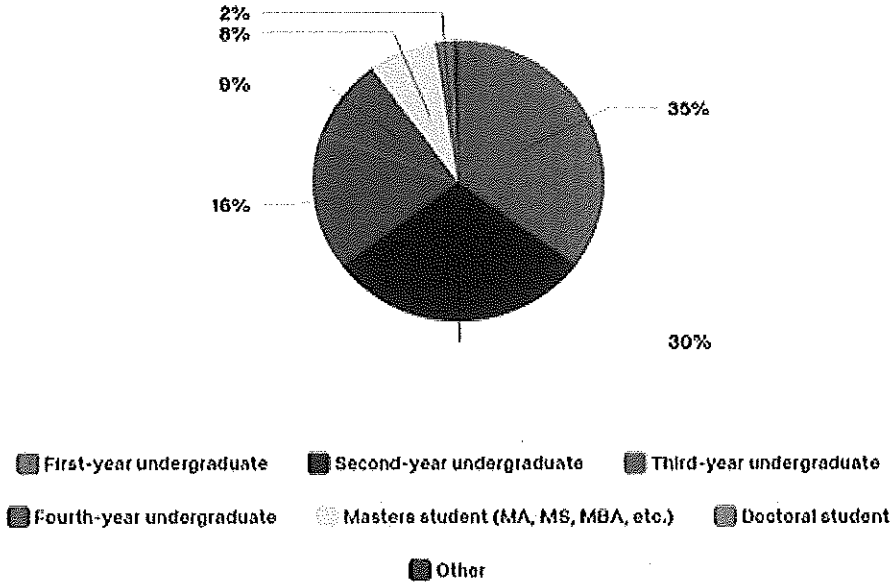
On average, how many hours per week did you spend using the pilot LMS for your course this semester?

Canvas

3%
10%
33%
53%

Never   Less than 1 hour   1 to 5 hours   5 to 10 hours   10 to 15 hours
More than 15 hours

Brightspace

2%
3%
13%
22%
60%

Never   Less than 1 hour   1 to 5 hours   5 to 10 hours   10 to 15 hours
More than 15 hours

Blackboard Ultra

4%
2%
4%
30%
60%

⬛ Never ⬛ Less than 1 hour ⬛ 1 to 5 hours ⬛ 5 to 10 hours ⬛ 10 to 15 hours

⬛ More than 15 hours
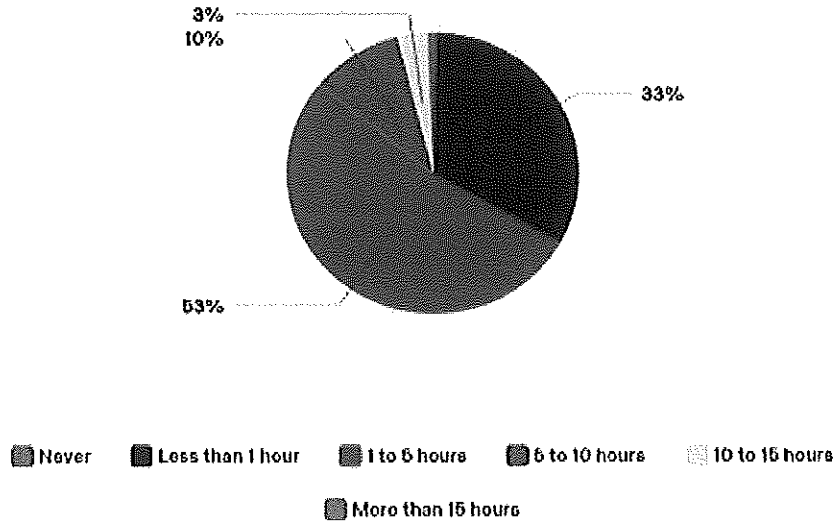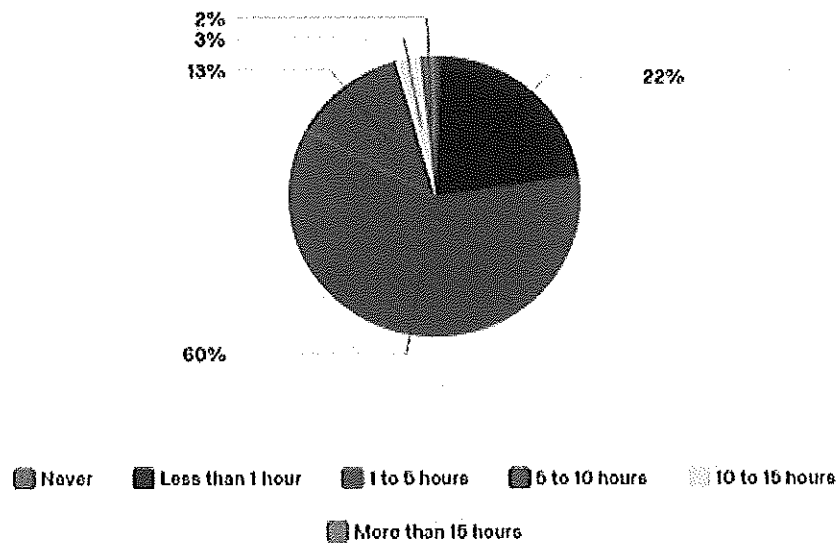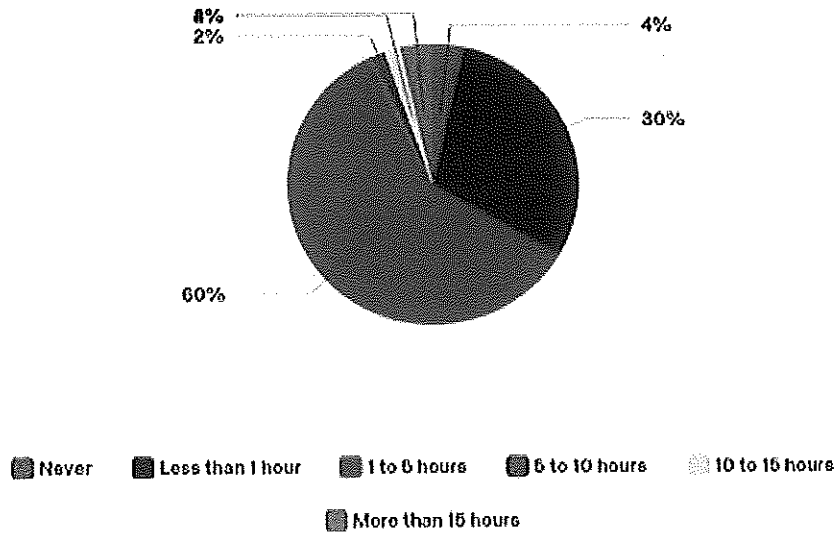
How would you rate the overall ease of use of the pilot LMS?

Canvas

5%
15%
25%
16%
39%

⬛ Extremely easy ⬛ Somewhat easy ⬛ Neither easy nor difficult ⬛ Somewhat difficult

⬛ Extremely difficult

Brightspace

0%
18%
11%
22%
42%

■ Extremely easy   ■ Somewhat easy   ■ Neither easy nor difficult   ■ Somewhat difficult

■ Extremely difficult

Blackboard Ultra

4%
25%
16%
18%
39%

■ Extremely easy   ■ Somewhat easy   ■ Neither easy nor difficult   ■ Somewhat difficult

■ Extremely difficult
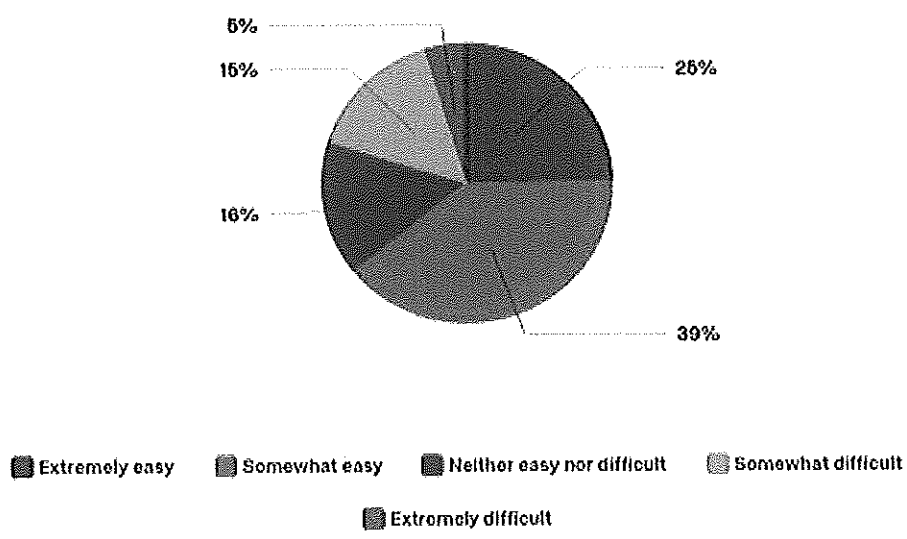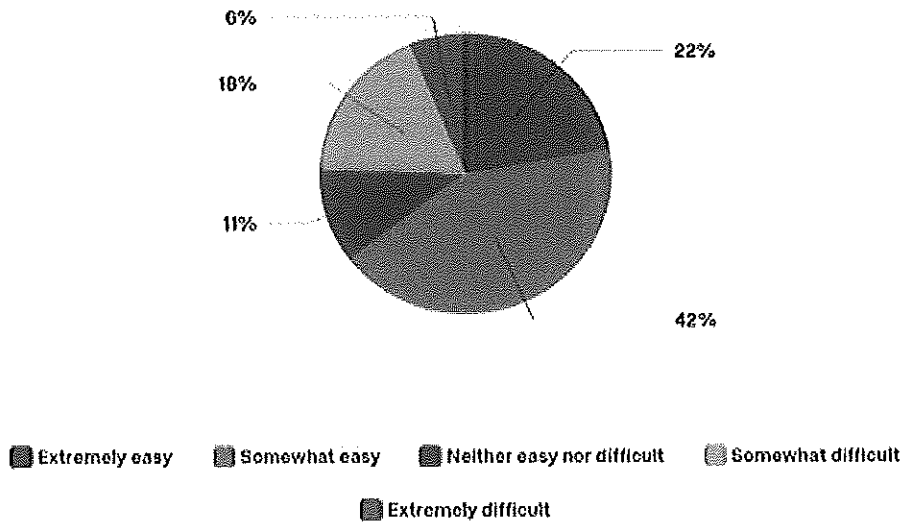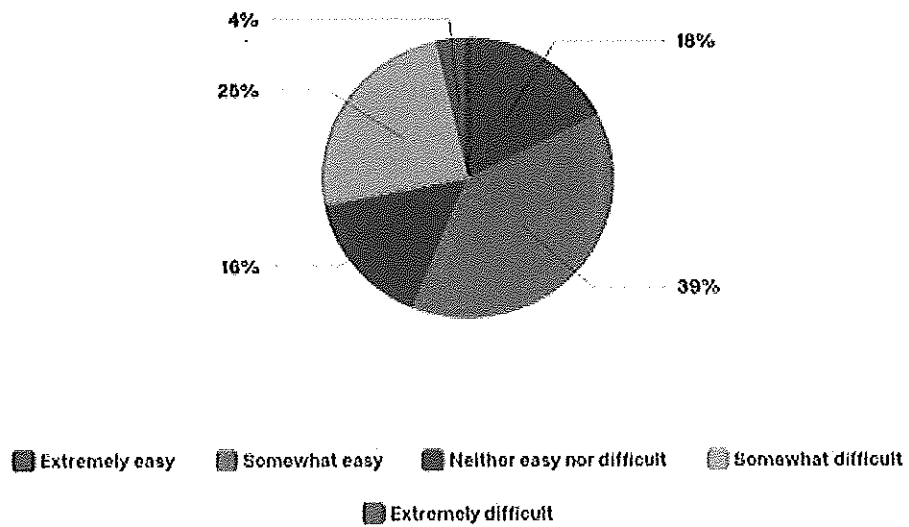
Do you think that the use of the pilot LMS had an impact on the quality of the class?

Canvas
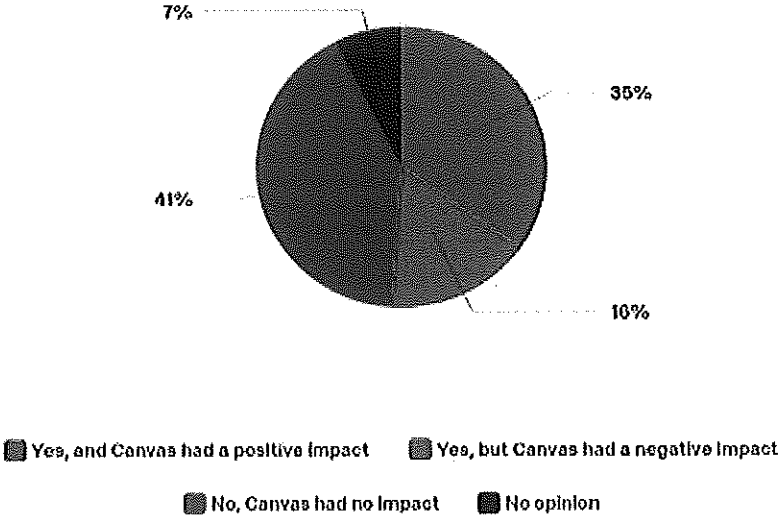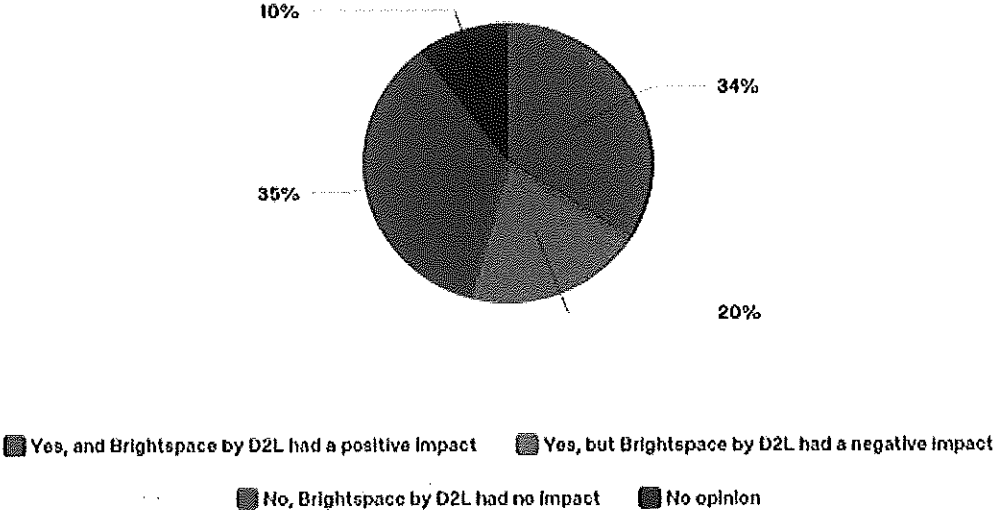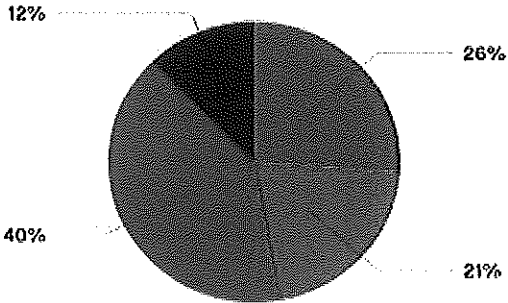
7%

35%

41%

10%

🟦 Yes, and Canvas had a positive impact   🟦 Yes, but Canvas had a negative impact

🟦 No, Canvas had no impact   🟦 No opinion

Brightspace

10%

34%

35%

20%

🟦 Yes, and Brightspace by D2L had a positive impact   🟦 Yes, but Brightspace by D2L had a negative impact

🟦 No, Brightspace by D2L had no impact   🟦 No opinion

Blackboard Ultra

12%

26%

40%

21%

Please indicate which of the following you used to access the pilot LMS during this semester. Select all that apply.

Canvas
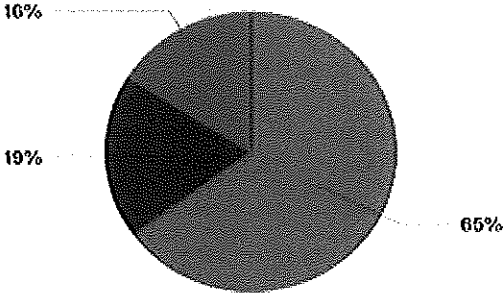
10%

19%

65%

Brightspace

12.83%

20.97%

60.20%

■ Laptop or desktop computer   ■ Web browser on a smartphone or tablet

■ Brightspace by D2L's app on a smartphone or tablet

Blackboard Ultra

8.43%

24.10%

67.47%

■ Laptop or desktop computer   ■ Web browser on a smartphone or tablet

■ Blackboard Ultra's app on a smartphone or tablet
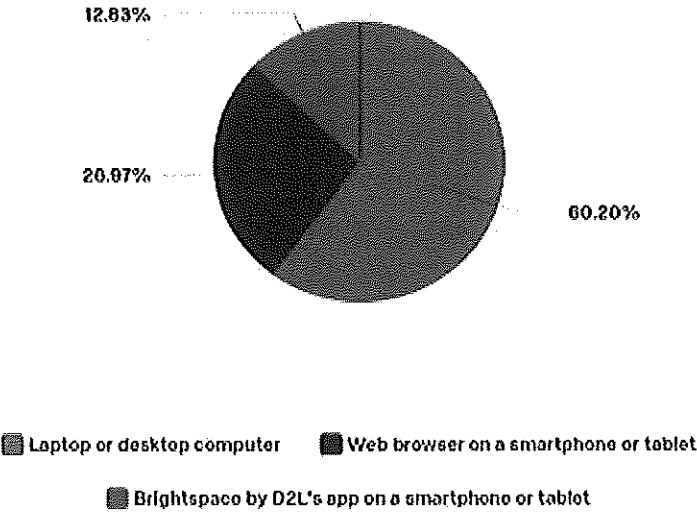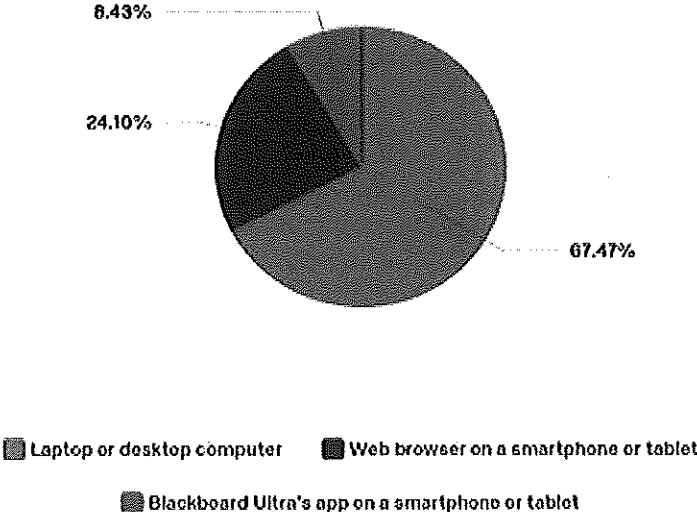
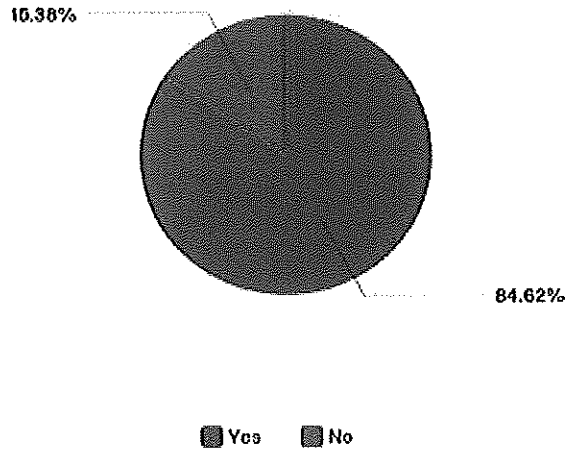**If you used the pilot LMS app, was it an effective way to access the platform?**

Canvas

20.39%

79.61%

☐ Yes   ☐ No

Brightspace

44.14%

55.86%

☐ Yes   ☐ No

Blackboard Ultra

15.38%

84.62%

Yes   No
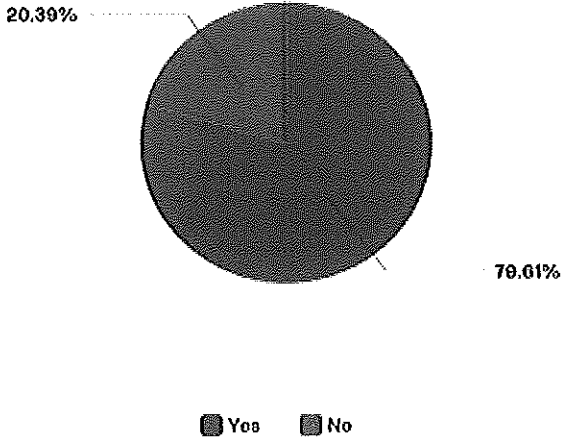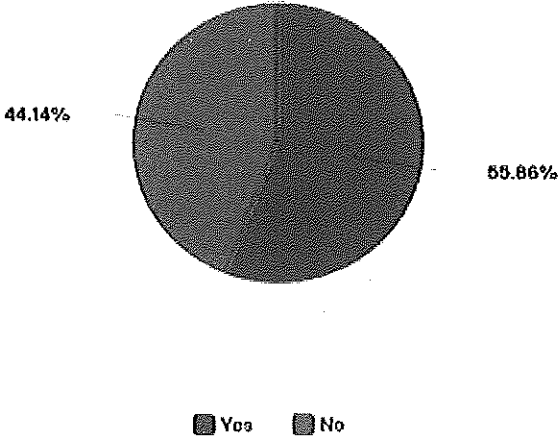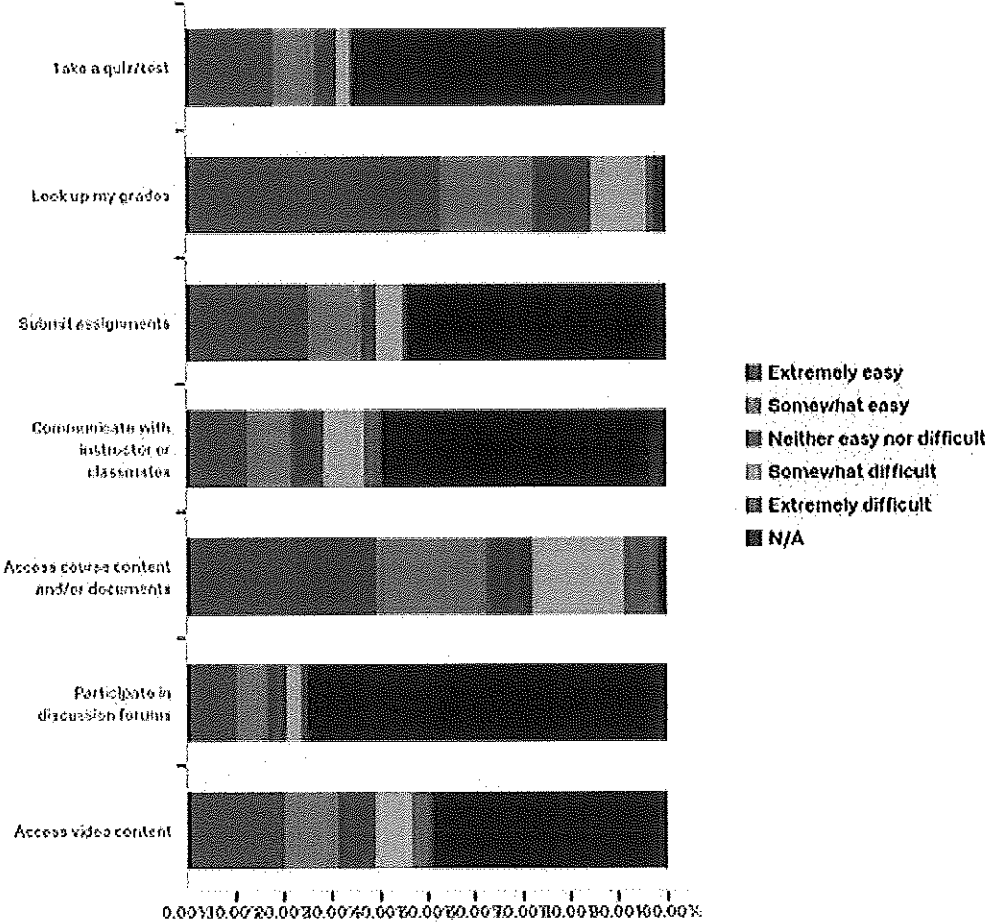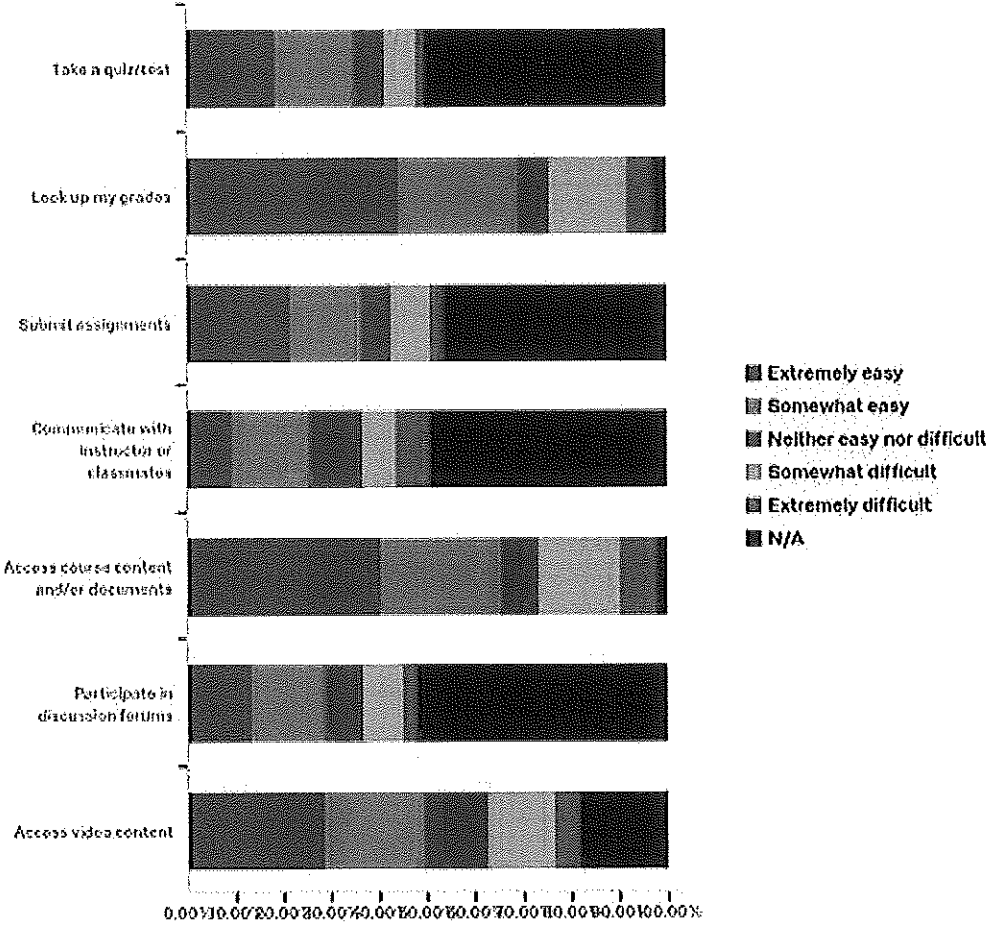
Please indicate how easy or difficult it was to use the pilot LMS to accomplish each task. If you did not use this feature, please select "N/A."

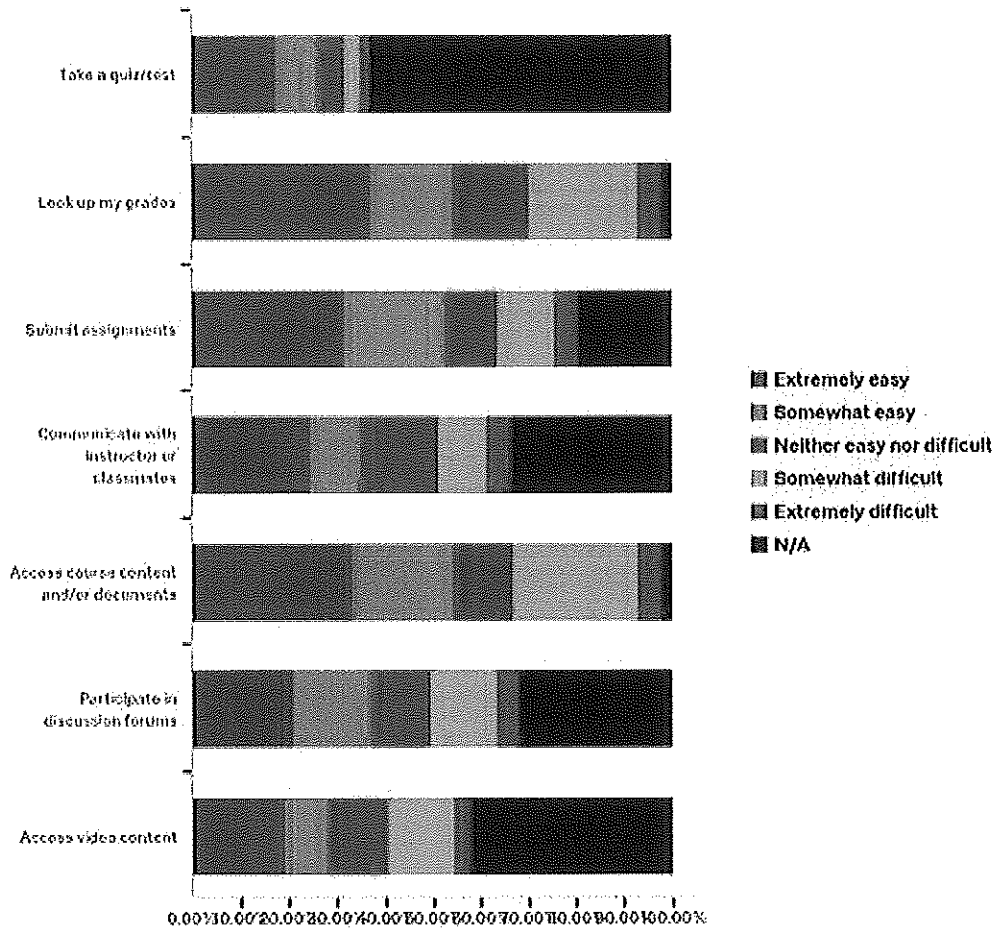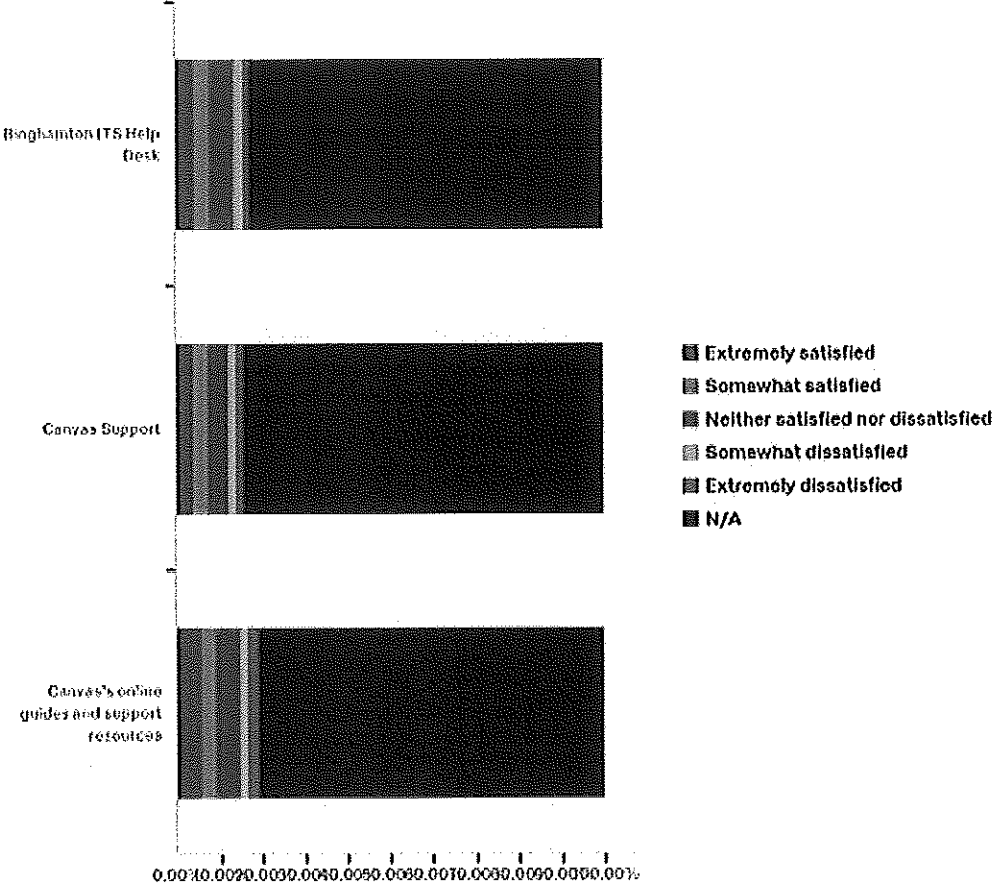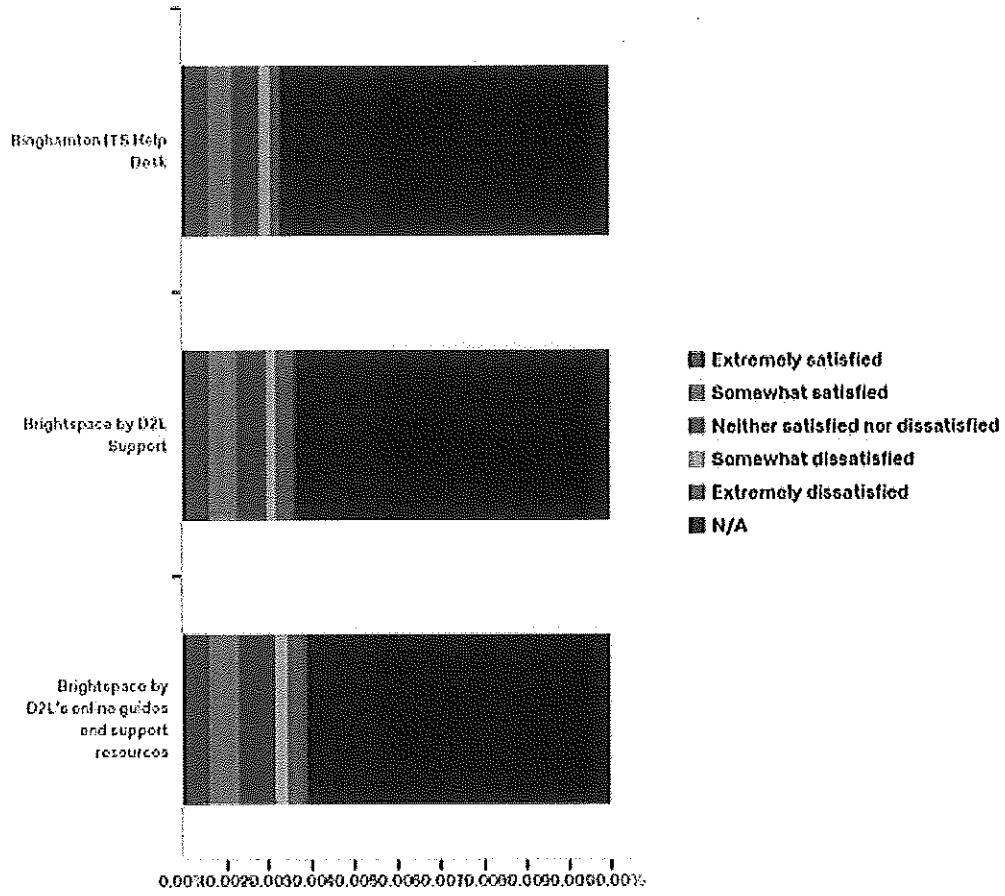*Canvas*

Legend:
- Extremely easy
- Somewhat easy
- Neither easy nor difficult
- Somewhat difficult
- Extremely difficult
- N/A

Brightspace

Legend:
- Extremely easy
- Somewhat easy
- Neither easy nor difficult
- Somewhat difficult
- Extremely difficult
- N/A

Categories:
- Take a quiz/test
- Look up my grades
- Submit assignments
- Communicate with instructor or classmates
- Access course content and/or documents
- Participate in discussion forums
- Access video content

Blackboard Ultra

Take a quiz/test

Look up my grades

Submit assignments

Communicate with instructor or classmates

Access course content and/or documents

Participate in discussion forums

Access video content

Legend:
- Extremely easy
- Somewhat easy
- Neither easy nor difficult
- Somewhat difficult
- Extremely difficult
- N/A

0.00% 10.00% 20.00% 30.00% 40.00% 50.00% 60.00% 70.00% 80.00% 90.00% 100.00%

Please rate your level of satisfaction with the following support resources available during the pilot. If you did not use a resource select N/A.
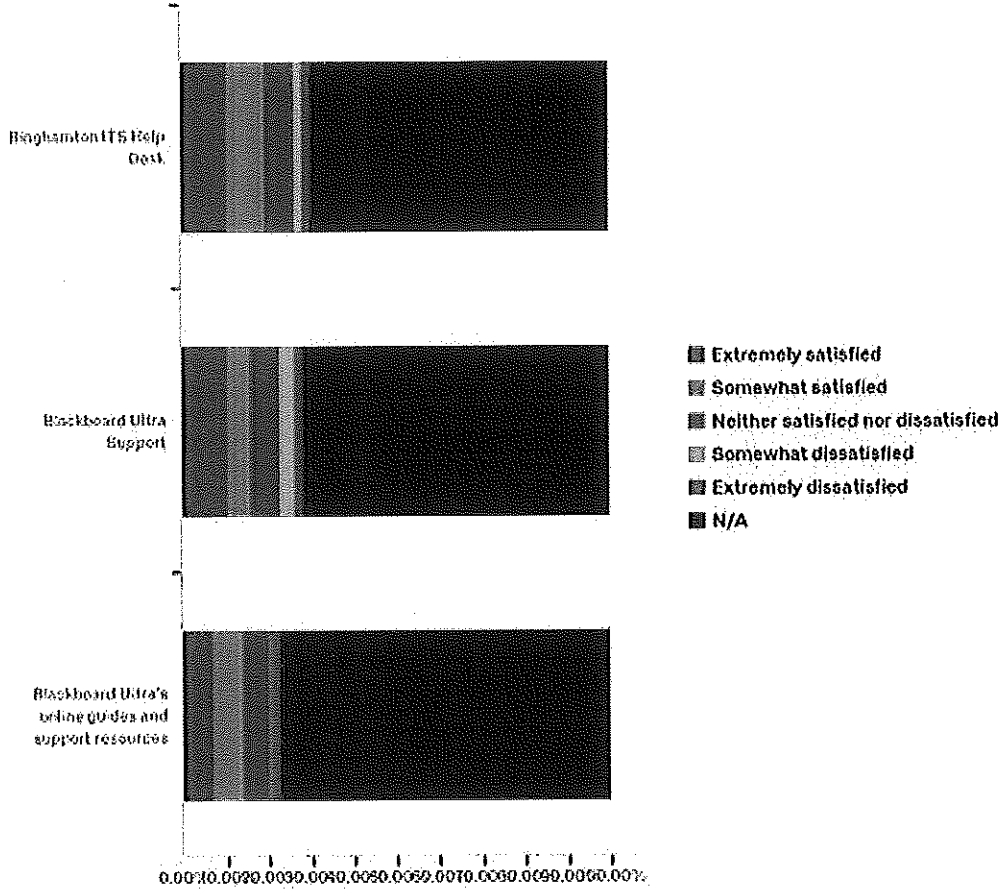
Canvas

Legend:
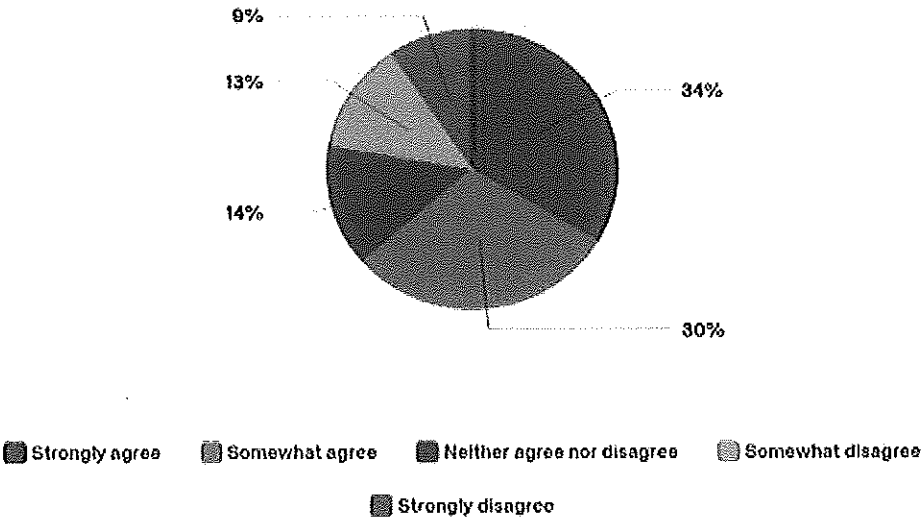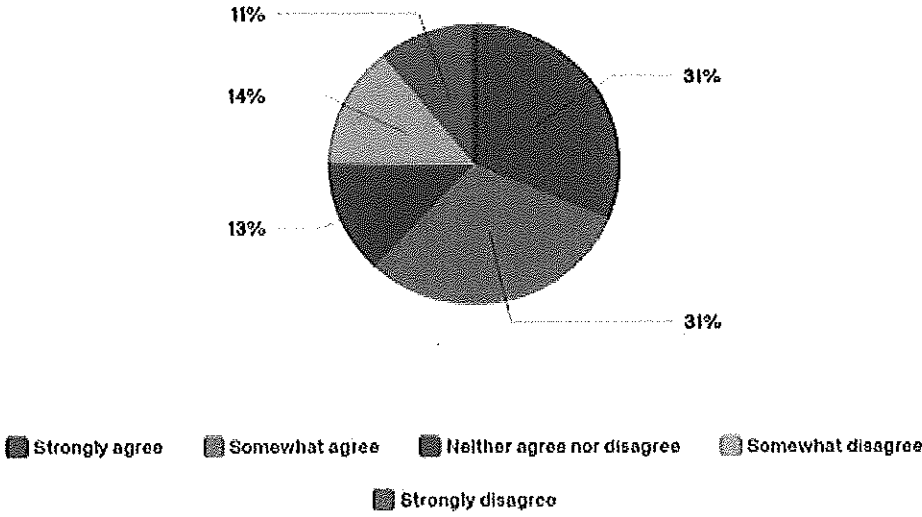- Extremely satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Extremely dissatisfied
- N/A

Brightspace

Legend:
- Extremely satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Extremely dissatisfied
- N/A

Categories:
- Binghamton ITS Help Desk
- Brightspace by D2L Support
- Brightspace by D2L's online guides and support resources

X-axis: 0.00% 10.00% 20.00% 30.00% 40.00% 50.00% 60.00% 70.00% 80.00% 90.00% 100.00%

Blackboard Ultra

Legend:
- Extremely satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Extremely dissatisfied
- N/A

Overall, my experience with the pilot LMS has been positive.

Canvas

9%
13%
14%
34%
30%

◼ Strongly agree   ◼ Somewhat agree   ◼ Neither agree nor disagree   ◼ Somewhat disagree

◼ Strongly disagree

Brightspace

11%
14%
13%
31%
31%
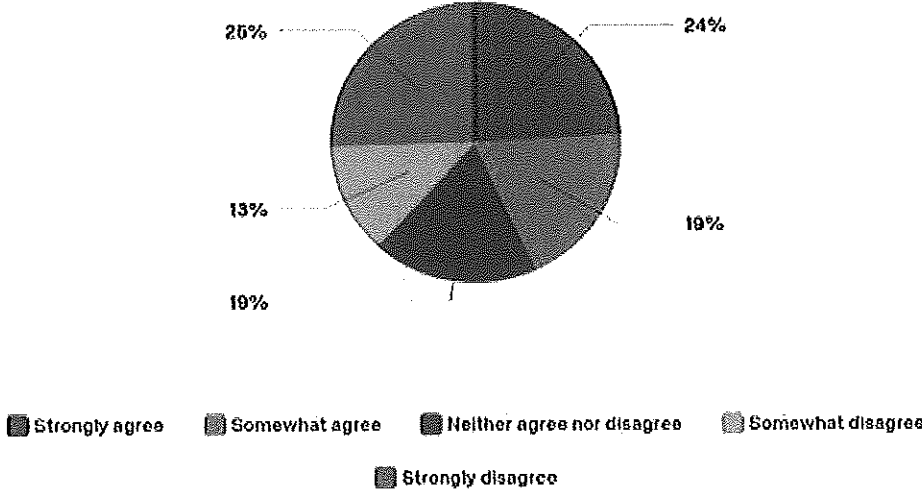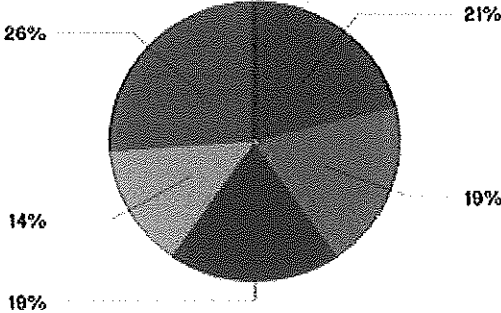
◼ Strongly agree   ◼ Somewhat agree   ◼ Neither agree nor disagree   ◼ Somewhat disagree

◼ Strongly disagree

Blackboard Ultra
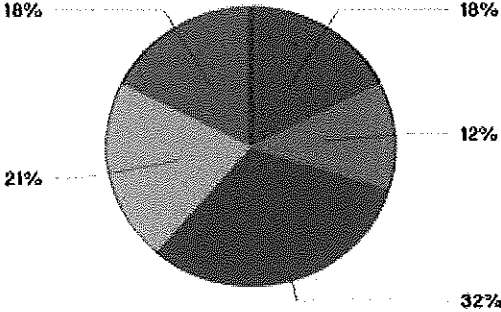
9% ---------
19% ---------
                    26%

16% ----------
                    30%

■ Strongly agree   ■ Somewhat agree   ■ Neither agree nor disagree   ■ Somewhat disagree

■ Strongly disagree

I prefer the pilot LMS to Binghamton's current myCourses LMS.

Canvas

25% ---------
                    24%

13% ---------
                    19%

19%

■ Strongly agree   ■ Somewhat agree   ■ Neither agree nor disagree   ■ Somewhat disagree

■ Strongly disagree

Brightspace

26%   21%

14%   19%

19%

Blackboard Ultra

18%   18%

    12%

21%

    32%

Binghamton University should adopt the pilot LMS as our LMS.

Canvas

27%

36%

36%

Yes   No   No opinion

Brightspace

26%

36%

37%

Yes   No   No opinion

Blackboard Ultra

39%
25%
37%

■ Yes   ■ No   ■ No opinion
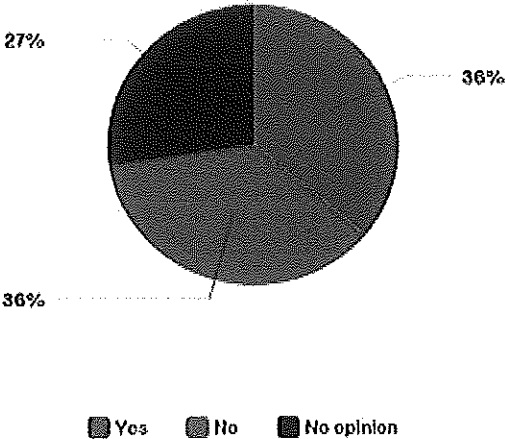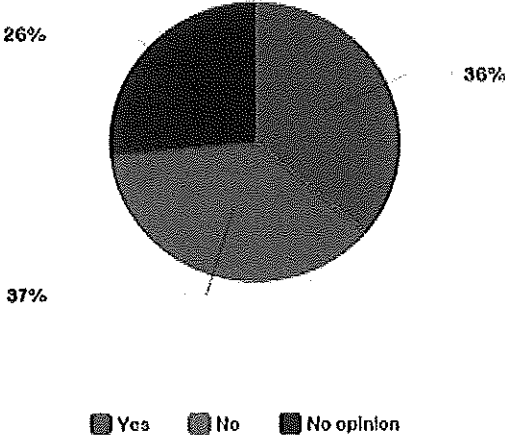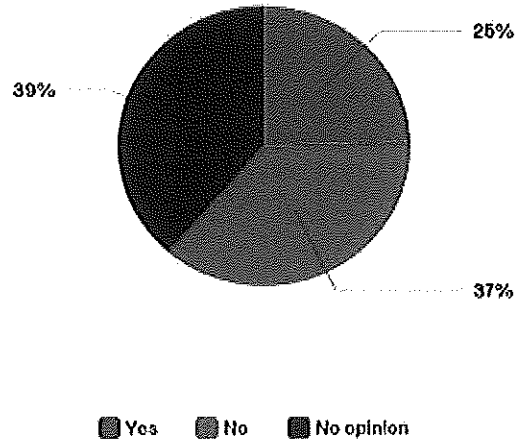
As compared to myCourses, what aspects of the pilot LMS worked well?

Note: Comments stating N/A were removed. All errors in spelling and grammar are preserved.

Canvas

- Ability to view grades on phone
- Acting materials and the fact that there was a modules section which was great! I definitely like how you can see word and pdf documents without it automatically downloading which was annoying on blackboard.
- Aesthetically pleasing, mostly easy to navigate
- alerts when assignments were due
- All
- all
- all of the pages were much more easily accessible. Easy to go from one thing to another without having to go through multiple tabs like how you need to with myCourses
- app
- App is better than my-courses
- Assignments and quizzes

- Backboard isnt brokw dont fix it
- Being able to access my grades was easier
- Being able to input test values for certain grades
- being able to view the powerpoints without downloading them. being able to see the modules of powerpoints
- Better layout
- better organized into categories and modules, easy to find course material
- better visuals, faster, friendlier
- Calculates your grade throughout the course for you!!
- Calculating grades and assignments.
- Calendar
- calendar feature
- Can have homework problem sets online without paying for a secondary program

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- Canvas allows students to see test averages and the highest and lowest grade which is helpful for motivating students.
- Canvas contains a lot more information.
- canvas has a better look and structure to it which I guess makes it better to navigate for me at least
- Canvas is broken up more cohesively. Its easier to have online assignments.
- Canvas is faster, easier to visualize and makes navigating around course contents very easy.
- Canvas is more neatly structured than myCourses.
- Canvas made no difference and it was irritating to use in addition to myCourses instead of using just one platform.
- Canvas seems much more modern and has a better ease of access. The Canvas grading system works much better than Blackboards'.
- Canvas was good at displaying files. Mycourses is better.
- Canvas was more organized than myCourses in terms of the layout of information.
- Canvas was super easy to look at grades and realize where I stood in the class. Additionally accessing files was much easier on Canvas than on myCourses.
- Canvas was very organized and it helped put notes in modules or forms that were easily accessible.
- Cleaner interface
- Cleaner UI made it easier to navigate
- Communicate with professor and TAs.
- Determining individual and overall grades and seeing potential averages
- Downloading documents. Easier to write on
- Ease in seeing future assignments, grades, and explicit scheduling.
- ease of seeing grades
- ease of use in browser on smartphone, myCourses is unusable on a smartphone
- Easier to find documents and was easier to navigate
- Easier to navigate
- easier to navigate
- easily accessible, aesthetic
- Easy to access, well organized
- Easy to navigate
- Easy to see feedback for submitted work
- easy to use the app and get to courses
- Easy to use, easy to see grades and assignment
- Estimating your grade in the course
- Everything
- Everything had a set place
- Everything is very streamlined, easy to find, and straightforward. Having the app on my phone was also a huge help, as I would get messages and grades sent to my phone immediately. Also, my favorite part was the grade tab, where you could see the break down of the grading criteria and put in different grades for future assignments to see where you stand in the class.
- Everything that was bad about myCourses was made up for with Canvas
- Everything was better managed and easier to use
- everything was organized
- Everything, it is well organized.
- Everything.
- Feedback, grades, calendar
- Finding Assignments
- Finding files were easy with the search function. Files were opened in a viewer first without automatically downloading.

Easy to use on mobile. See when new files are posted with notifications on my phone from the Canvas app.
- Finding grades
- Grade section
- Grade system is very clear and easy to see
- Grades
- grades and calendar
- Grades automatically appeared immediately for all assignments, lecture slides were easy to access
- grades tab
- Grades, notifications of assignments being graded
- Grading
- Grading and due date calendar
- Grouping modules and the physical calendar helped
- Having a day-to-day schedule helped keep things clear
- having assignments within the program was a good way to streamline
- Honestly, I don't think anything worked well.
- How easily grades were accessible and how everything was categorized well so that you knew exactly where to look for course related content
- I can't think of anything that Canvas did better
- I could estimate my grade
- I didn't like any of it
- I enjoy how you can see the average and mean of grades.
- i enjoyed the grade breakdown a lot, I always knew my grade and i also liked how I got an email each time an assignment was graded
- I guess it was nice that everything was in one place, but MyCourses does the same thing

- i like seeing test data depicted in the grades section
- I like that canvas allows me to see the distribution of grades
- I like that you can do the homework directly in Canvas.
- I liked being able to see the expected grades
- I liked how easy the platform was to navigate
- I liked that all of the material for one test were grouped together into modules
- I liked that Canvas had a "modules" section where every unit was divided into a folder, and each folder was a drop down menu, so there was not a bunch of clicking back and forth to open and close folders when I wanted to get to a specfic document.
- I liked the access to an app and the google calendar linking capabilities.
- I liked the aspect of canvas where you can see your grades within the class, rather than my courses where you have to click "my grades" and you see all your classes together. I also like how everything seems to be more accessible with canvas. I thought it was easier to find documents and assignments. Canvas also allows you to see your projected grades by allowing you to input an expected grade and I really liked that aspect of it.
- I liked the calendars and modules
- I liked the easy-to-read timeline of when assignments were due and the calendar feature.
- I liked the fact that you could test out different scores on assignments and you could track how well you were doing easier than on my courses. This was a much more effective way of viewing your grade as they are put in and a whole, on

- my courses you really can not do this or it is hard and confusing.
- i liked the grading concept better as well as the overall format better
- I liked the grading section and the statistics it gave on how the class did as a whole.
- I liked the module organization and the syllabus view (sort of--it is most useful at the beginning of the semester, I wish it automatically showed today's events.)
- I liked the way the documents were organized and the search tool.
- I likes the calender aspect
- i loved the grades section how you could put in optional grades and see where you stood
- I prefer MyCourses
- I preferred myCourses in every way. Using canvas become a hassle
- I really like how on canvas you can see the statistics of quizzes/tests, for example you can see your classes test average
- I really liked how the calender showed every assignment for the class as well as the overall schedule.
- I saw no beneficial features compared to my courses
- I think just the app
- I think the modules of Canvas were better set up than the ones on myCourses
- I thought it was user friendly, and I really liked the aspect of putting in hypothetical grades to see where our overall grade stood.
- It did not work well
- It didn't really improve on anything
- It doesn't look like it's from 1994
- It had a better interface.
- it had a more updated formatting and included a calendar with all the
- assignments and an overall nicer way of looking at the assignments.
- It has a more straightforward layout which makes it easier to find things. It seems more intuitive to use than mycourses.
- It is better in every way
- It is much easier to find things on canvas.
- It is much more compatible on my phone
- it seemed the same to me
- It shows class averages so you know how well you did
- It was easier to find everything and it was neatly labeled.
- It was easier to look up my grades and sent me emails when something was uploaded which mycoses doesn't always do
- It was less cluttered than mycourses and had a simpler interface
- It was more organized
- it was the same
- It's more organized with Blackboard
- It's much easier to navigate and the layout, overall, is just cleaner.
- Its organizational aspect is just more streamlined and better in my opinion.
- Its relatively organized.
- its the same
- Its visually appealing and easy to use
- Layout mostly
- Less clicking to go through folders
- less things to click before I got to where I wanted to be within the website itself
- Looked cleaner, and was easier to navigate
- Looking at grades
- Looking up grades
- Loved the file access, so much easier to find what I need to find than going through mycourses
- Many areas of organization

- modules
- Modules and assignments were easy to find
- More capabilities than myCourses
- More organized and easier to navigate.
- Much easier to navigate
- much more simple and straightforward
- my courses has a barely functioning mobile page that doesnt work for half its features where canvas worked perfectly
- Navigation
- None
- None of it
- None, did not enjoy it
- not much else
- not user friendly, hard to navigate quickly
- Nothing
- Nothing
- nothing really
- Nothing worked on Canvas and myCourses functioned much better
- Nothing, I did not like it
- Nothing.
- online quizzes
- Organization
- Organization of different categories worked well.
- Organization, clean, sleek look
- quizzes
- Really liked that there was a to do list of assignments that were not yet completed
- Same
- seeing what your grade was is a lot more clear on canvass
- So easy to check things
- submitting assignments
- tabs
- That items were broken up day by day.
- the ability to access everything in one place, very organized
- The ability to open files in the web browser and not have to download them. The grades tab online.
- The app was much nicer, and I thought that the set up was easier to use.
- The app was useful
- the breakdown of my grades and the showing of class statistics worked wll.
- The calendar
- The calendar tab
- The calendar was really useful, and being able to plug in possible grades was a good perk to see how my Course average would be affected.
- The different organization tabs were helpful
- the different sections are very easy to use (files, modules, etc)
- The ease of viewing grades.
- The fact that I could access my grades easier and see how I compared to other students in the class (average)
- The feature that allows the entire semester to be listed with course content and grades. Very encouraging to maintain participation and satisfying watching each week be check led off. Also there is a aspect that shows assignments which makes sure I am completing all work even when things slip thru the cracks! Best feature yet!
- The general layout is easy.
- the grade area was nice
- The grades are added up better and shown easier.
- The grades portion is better. The box and whisker plot is a nice touch.
- The grades section, the modules part, the calendar
- The grouping of documents was easy once you got used to it. Uploading was easier for professors
- the layout

- The layout looks better. This could change with the addition of more courses added.
- The layout was a lot cleaner and much easier to use than myCourses, easier to see grades, and easier to do assignments
- The layout/design and interface is so much easier to use. I like how it goes by Week # rather than Content, Discussion, etc. It is so much clearer to use and it is so much prettier to look at.
- the links
- The many different tabs to categorize all the information in the course was helpful for navigating
- The module function that brought the various aspects together, made navigation faster. Also having a side bar with upcoming assignment submissions made submissions go faster too.
- The modules portion of Canvas worked well
- the modules section
- the organization
- The organization is better
- The overall layout made it easier to find things
- the predict grade option
- the schedule section. very organized

Brightspace
- a lot more organization
- About the same
- Absolutely nothing this is the least user friendly, worst platform I have ever used in my life. Every time I used it it took at least five times longer to use than mycourses would have. I have waited all semester to complete this survey so that they get rid of this, it made my life unnecessarily difficult and aggravating.
- Access to grades

- the schedule was organized
- the simpler layout
- The spot to see grades is easier
- The text was easier to read.
- The transitions are smoother and there is less loading
- there is an option to download into the device easily at the top of the page
- There was much better and more visible organizations of all aspects of the class e.g. grades, quizzes, assignments, modules/class notes
- There were no significant differences.
- Things were organized
- Very easy to view grades and it was helpful that there is a tool that can used to put in hypothetical grades and calculate a hypothetical class average.
- Very organized
- Viewing grades and accessing professor feedback work extremely well compared to mycourses.
- well organized
- worked on mobile
- Worked well on mobile
- yes
- You can scroll through the grades.
- You could see grades better

- Access to grades and lecture slides.
- Accessing assignments and grades
- Accessing assignments was simple and easy for the user
- Accessing course content
- accessing different lecture notes/ sidebar tasks
- accessing documents posted by professors.
- Accessing grades and announcements

- accessing the lecture slides and finding grades
- all
- All aspects in which I interacted worked well
- All aspects of class are reachable from one page.
- all documents in one place
- All of them
- All worked as well as mycourses but brightspace had an app which was good
- being able to access grades, look at assignments, and announcements on a single page works well compared to myCourses which had grades as a separate area from course content.
- Better access to grades
- Better looking
- better looking, easier to use
- better on mobile
- Better visual design
- Blackboard isnt broken dont fix it
- Bright space works well on a mobile device.
- Brightspace had more accessibility to different facets of media it seemed compared to MyCourses.
- Brightspace gave the same information as MyCourses but in a much different manner
- Brightspace has a more modern layout/flow. It is overall less ‚Äûglitchy‚Äù.
- Brightspace is more organized then myCourses.
- Brightspace is visually more appealing
- Calendar
- Calendar tool was cool, I'm not sure if myCourses has this
- Checking grades
- Cleaner web face and easier user interface
- Clear look at grades
- Color scheme was nice
- design was more visually appealing
- Design. The UI (user interface) is very nice and clean.
- Discussion forum was good, clear division of units on the website
- Discussion, chapter content
- Discussions
- Downloading files.
- Ease of access
- Ease of ui.
- Easier access to tabs
- easier to find content. Less steps
- Easier to find grades, and course material.
- easier to navigate
- Easier to navigate and get to specific information
- Easier to submit homework online
- Easier to use on a smart phone
- Easy and interactive platform
- Easy Layout. Very easy to access assignments and class schedule.
- Easy to access grades and content
- Easy to check assignments and view lecture slides
- Easy to find content/lecture slides
- Easy to view Grades and lectures
- easy to view grades, organized into folders
- Everyone's grades were graphed, which was interesting to be able to see.
- Everything
- Everything being in one spot
- Everything is easy to find
- Everything seemed to have a clear purpose like there were different sections for grades and content
- Everything was all on one website instead of clicking and opening multiple tabs
- Everything was clearly labeled and the lecture slides had annotated versions.

- Finding grades
- Finding the content
- Going online to bright space on my phone was so much easier
- Grade checking is very clear and easy
- Grades
- grades
- Grades automatically drop (if you‚Äôre on a browser to view them).
- Group Discussions, Videos, Grades
- Gtades
- Had all the due dates on the side
- having everything on one website
- How grades are inputed makes it easier to assess how well you are doing throughout the semester, making it easier to know how you‚Äôre doing through tour the semester
- How organized the website is
- I appreciated the organization of Brightspace and accessing course materials was not difficult.
- I don't thuink it had any change.
- I enjoyed the outline as well as set up of bright space.
- I felt it was easier to navigate
- I had an easier time seeing my grade in Brightspace.
- I hated having so many tabs open because my courses has different pages for each module rather bright space had everything on the homepage just making looking up notes easier faster and more streamlined.
- I like how everything pertaining to my course was clearly listed in the tab bar. It was very uncluttered and the large text made it easier to read.
- I like how the design wasn't as harsh as myCourses, a little easier on the eyes
- I like how you have tabs at the top and it tells you what you're looking for.
- I like that the grades were integrated into each course.
- I like the access to content without going to a new tab
- I like the layout better it‚Äôs less confusing and just nicer to look at
- I like the overall aesthetic appeal of it more than myCourses and how it shows you are a certain percentage done with an assignment.
- I liked being able to check things off once I viewed them.
- I liked how it was organized and the checklist aspect
- I liked how organized Brightspace is
- I liked literally nothing about Brightspace. MyCourses works way better in every aspect.
- I liked that you can subscribe to emails about certain updates on the course.
- I liked the ability to access grades, and that the announcements were shown as soon as you opened the page.
- I liked the calendar aspect
- I liked the chronological order of things.
- I liked the grading better
- I liked the notification feature for grades on the app. I liked how you were able to view ALL your grades in the website (mycourses does not allow me to do this).
- I liked to format of quizzes/homework.
- I loved that you could divide the content into weeks and you could see a calendar and the professor can update it so make sure you‚Äôre on top of your things. Additionally, I love how it was a much smoother system than blackboard. I also really enjoyed that you can download documents if you want, it doesn‚Äôt automatically download it for you.
- I prefer myCourses.

- I prefer myCourses. The only aspect of Brightspace that I enjoyed was that the grades were uploaded in formatting based on the grade percentage of the course.
- I saw no benefits to using Brightspace over Mycourses. I prefer mycourses.
- I think that brightspace is more user friendly than blackboard, in my opinion. it was alittle hard to naviigate at first, but that's only because we got a very basic tutorial and then was asked to do many more things VIA brightspce. But it has y9our content and tabs for every page more readily available and i think easier to check.
- I thought it was better organized.
- I was able to see a wholistic view of what the course would look like, which helped.
- In Brightspace, powerpoint lectures were easier to access.
- It doesn't crash like myCourses does
- It had a cleaner appearance
- It had a lot more information, but was not nearly as organized as myCourses.
- It had a much better user-interface and it actually worked on a phone.
- It had a nice format
- It has a cooler name
- It is easy to submit work to, and I liked the calendar feature and the reminder emails it sent about upcoming assignments.
- It looked cleaner than mycourses.
- It looked pretty and set out all the assignments for the semester before hand
- It looks better
- It marked off things you viewed and had a bar showing what percent of tasks you have viewed/completed. This made it easier to keep track of getting things done
- It seemed easier for the instructor to tailor it to their likings but the whole format is confusing and flows poorly
- It was an easier grade layout
- it was easier to access grades
- It was easier to access grades and calculate final grade through Brightspace
- It was easier to access on my phone and it was less glitchy
- It was easier to upload documents and find course materials. It was all on a front splash page in addition to being on its own page that could be found under different subheadings.
- It was easier to use than myCourses
- It was easier to use.
- it was easy to access lots of the tools and lectures
- It was easy to access the slides quickly and all
- It was easy to find my way around the website.
- It was more available on mobile devices.
- It was more organized than myCourses and very easy to use
- It was nice to have a place to submit all assignments and have the exact time and date they were due listed
- It was not much different.
- It was organized well
- It was smoother and allowed you to sign in without it being a hassle
- It was very easy to look at all of my grades and my totals.
- It was way easier to see grades and just looked more aesthetically pleasing than myCourses
- It was well organized
- it worked a lot better on mobile
- It worked better on my iPhone screen.

- It worked well, but myCourses is just fine and the university should stop spending time and money fixing things that arent broken.
- It's easy to navigate and the layout is visually pleasant.
- It‚Äôs clear and there‚Äôs more pages
- Its less ugly
- Layout
- Layout is much nicer, UIX and UI are much cleaner. Notifications function effectively and grade area is clear and useable.
- liked the overall menu on top and then subject work to the left
- Loaded faster
- Loading docs
- Loading time for content was faster.
- Looked more modern, but did the same thing
- Looking at my grades and seeing what assignment is due
- Looks nicer
- Mobile compatibility
- mobile use
- Mobile use and was easy to use
- More modern and user friendly. Smartphone Friendly.
- More organized
- more organized and clear
- Much clearer assignments
- Much nicer, more modern interface. Think it could be much more streamlined than myCourses if used correctly.
- my coursesis better
- mycourses is hard to grade the quizzes
- mycourses works better
- Navigation of site was much more straightforward.
- nice interface, better laid-out course sections
- no
- No, it was horrible. I prefer my courses

- None
- None
- None really. myCourses is a lot better!!
- None were better
- None.
- Not much of an imporvment, I guess it looks better
- Not much, initially it had a much better interface, but that quickly changed.
- Nothing
- Nothing
- nothing better than myCourses
- nothing different. annoying to look back and forth from myCourses for my other classes and Brightspace for a diffferent class.
- Nothing it was trash
- Nothing really, it just looked prettier
- Nothing was good about it it was extraneous and unnecessary to have more than one platform
- Nothing. myCourses is 100 times better.
- Organization
- Organization
- Organization of bright space works better
- Organization of content
- Organization of different tools
- Organization of materials
- Organization of subtopics/topics in the course
- posting video
- Really easy to figure out based on the layout.
- seeing my grades is a lot easier
- simple
- Simple interface, easier to find grades.
- Simpler navigation
- Smoother system
- submission of assignments
- Submitting group assignments.
- sure
- Taking quizzes

- Taking quizzes and posting discussions
- Taking the quizzes were more efficient.
- The ability to use it on my phone
- The announcement bar on the side until you clicked the "X" for it to go away was helpful.
- The announcements section pops right up and its easy to see and access everything for a class.
- The announcements were more organized and it was better for accessing on the phone
- The appearance of Brightspaces was generally more pleasing. Receiving feedback from my professor and reviewing the feedback was significantly easier than Brightspaces. Specifically because my feedback was provided "in-line". Additionally, grades were easy to view.
- The assignments were much easier to see
- The built in quiz and test functionality was convenient and easy to use
- The cleanliness of the site in appearance and organization
- the colors
- the comprehensive formatting
- The discussion board
- The division and layout of the course was convenient
- the easy way it was to learn how to use it and find all the documents or resources/grades you need to look up
- The funtionality of accessing content was easier and it was clear where content was stored.
- the grade book organization
- The grade percentage was shown and was shown in the notification bar drop down without having to go find the grade manually
- The grades were easily displayed.

- The interface is very new and interactive which I like
- The interface was far simpler than Blackboard/myCourses, and a lot nicer to look at.
- The lay out
- The lay out of Brightspace makes it easier to know where things it. I also like the calendar with the due date of assignments at the button left corner.
- the layout
- The layout is organized better
- The layout of assignments
- The layout was more visually appealing.
- The layout was nice
- the lecture slides
- The menu was easy to read and understand
- The modules are well organized and content is easily accessed.
- the organization is better
- The organization of the course content was nice. It helped us to know where were in the course.
- The organization of the course contents, and how easy it is to access the grades
- The organization of weekly schedules, chapter modules, and lectures. It was very easy to search up notes from different modules. I was also able to keep track of any updates from the professor with text message notifications. I don't know if that is available in myCourses, but it was very easy to sign up for these notifications in Brightspace.
- The organization was a lot better
- The quiz and grading features
- The sections were more clearly shown, and shows whether you have clicked on content before or not.
- The setup is clear

- The site was more accessible , but the grades don't average themselves as they are entered so I have to do all the math myself anytime I want to check up on my standing. I prefer the grading on blackboard
- The user interface was cleaner and the app made things fairly easy.
- The website's organization was very clear and easy to navigate.
- The white aesthetic was pleasing. (not much worked well)
- There was no significant improvement over myCourses.
- There were less bugs and glitches
- Uploading/submitting assignments
- using brightspace on my phone
- Very easy to access content such as lecture slides
- very easy to view the content; more friendly and welcoming platform

- Very nicely organized.
- very organized
- Very organized! Really liked the calendar aspect of Brightspaces.
- Very well organized and easy to access everything
- Viewing grades
- Viewing lecture
- Viewing lecture slides
- Visually, Brightspace is more appealing. Navigation was different than Mycourses but in many ways better.
- When you submitted an assignment you immediately received an email to know it was successful.
- worked better on the mobile website
- worked the same
- yeet

Blackboard Ultra

- It was easier to navigate, more aesthetically pleasing, and a more efficient way to see what I had going on/announcements/etc.
- It looks more moderns and simple than regular blackboard
- Blackboard Ultra looked nicer, and it was super easy to see grades.
- Honest opinion, the myCourses platform is easier to navigate.
- Like grading policies
- Easy Interface
- homework
- Not sure, didn't use it that much
- Can't recall
- nothing
- everything
- Blackboard Ultra is MUCH more functional on a phone than myCourses
- the grading system and tests

- You can view ALL (not just the most recent) of your grades for a course on the webpage. MyCourses doesn't allow me to do that
- Color coded grades.
- Sent push notifications
- Viewing grades worked great
- It was familiar and it is easy to find assignments
- nothing
- yes
- It had a nice look to it
- Viewing Grades
- There was no real difference
- I did not like it
- everything
- the design
- The interface was much more aesthetically pleasing, the font larger and easier to navigate.

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- It is much more organized and the app (even though I did not use it) is helpful
- Faster, more sleek, easy to see all aspects of a course
- Most pages look slightly nicer
- None
- Nothing
- I like that I was warned when I had something due soon and that I could see

upcoming assignments for all my classes at once.
- It looks nicer
- Easier access to grades
- can use on your phone
- Better mobile layout on phone/tablet

As compared to myCourses, what aspects of the pilot LMS could be improved?

Canvas

- Always asks me for cookie access even though I have cookie access turned on
- I did not notice anything that needed to be improved
- all
- all of it
- The organization. I'd click files, but it was too confusing so I learned I had to go to modules to see my professors content and then scroll through everything.
- make modules a less confusing category
- I did not like that I only got notifications at the end of the week rather than per assignment that I get with my courses. if this is a setting I was unable to find a way to change it.
- Organization of files
- Make printing documents easier. I shouldn't have to download the doc to print when blackboard can just let me print straight from source.
- Confusing interface to navigate because of how things are set up on the sidebar; the app was not able to be used because of the way the class was inputted so i couldnt look at any files my

professor uploaded or check my overall grades. I do this often with mycourses to keep track of where I am so it was very frustrating. I also think that MyCourses has been more universally used so it is second nature to navigate.
- Access to the content of the course.
- too much going on
- everything
- None
- Canvas is too cluttered and has too many tabs that it made it difficult to access the information I needed. Canvas should decrease the amount of tabs to only essential tabs and then give the user the option to add on tabs if they so choose.
- not having to open a separate website for only one course.
- having the tabs in a more organized fashion, everything was easy to access after getting used to the site, but it was difficult to understand in the very beginning.
- none so far.
- Specifics of what each tab is would be helpful.

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- having a direct login into canvas like how we do for myCourses that is linked to my.binghamton.edu homepage.
- An explanation of what each tab brings me and
- Not that professors know how to use mycourses that well, but Canvas is very different and had a huge learning curve
- go back to mycourses. this platform makes no sense and made an extremely difficult class more difficult
- too cluttered needs to be more streamlined
- It was difficult to navigate sometimes, grades were harder to appreciate
- There were some parts of the sight that were just harder to navigate compared to myCourses.
- how the tabs are organized
- if an instructor left notes on an assignment, that window was often a little small
- Easy to browse, easier log in, it always had problems with cookies etc....
- takes some getting use to, not an easy way to post identification numbers for students if you do not want to list them as grades
- Too many places I need to click to access what I need
- nothing
- Ability for TA's to make announcements to their respective discussion sessions only. Ensure that the quizzes are graded properly. There were a few times where the instructor had to manually change my grade.
- All of it. Grades are hard to find and overall myCourses is set up much better.
- none
- finding files
- no

- too many tools, make more simple
- files
- nothing, overall is good
- getting into Canvas
- nothing
- None
- finding course grade and files easier
- Too many different places to look and open things. Condense!!
- wish it was linked to my binghamton account on homepage
- the canvas app for smartphones is not easy to work with when it comes to assignments and the format. Also when i have more than one attempt on homework, it creates a whole new blank homework instead of keeping the answers I got right from previous attempts.
- being able to access it easier
- submitting homework
- Needs more options with trying to look up grades and test different scores
- The ease and the attractiveness
- A lot of the documents and power points were harder to access because they were in so many locations options but it was not bad. The syllabus I also could not download but it was fine.
- Tools for communication between students and instructors could be improved.
- App did not work for checking grades.
- Being able to view grades in Blackboard
- the calendar was confusing in addition to the syllabus tool.
- since only 1 course involved, hard to compare, the content page and assignment/ module page sometime makes me confused
- Considering myCourses and BUBrain are in the same place, it'd be easier if canvas was located there

- it was hard to find assignments and files, myCources works way better
- canvas almost works just as well as mycourses, so not really any improvements in comparison
- nothing, its better and easier to use than myCourses
- nothing
- Improve movability and ui
- the layout was confusing compared to mycourses
- Nothing, it is better in every single category.
- none. i liked this a lot
- Everything
- its the same
- who knows
- The only thing was it was difficult to find the rubric to my lab reports.
- It just seems slower when I use Canvas
- There are just so many tabs to navigate.
- Literally everything
- clutter
- Unsure, I just prefer blackboard because all my other classes are there. I don't like having to go to a completely different website to access course materials
- I did not like the select-course menu.
- answers
- Opening more than one window at a time would be nice. I swit h between powerpoints a lot
- Nothing
- all
- Finding files
- none
- It took me a while to figure out that "Modules' was where all the handouts & notes were
- Better layout

- I think some of the headings on the side are confusing but overall Canvas was very good.
- I accidentally deleted one of my grades.
- It is sometimes hard to find course content on Canvas since the files tab is out of order.
- don't use canvas
- Nothing that I noticed from my usage.
- I feel like there were roundabout ways of getting to things. But I feel like my instructor could have made it simpler to use, not Canvas itself
- Kind of hard to review submitted assignments
- It could look better.
- everything
- The announcements part could be more efficient. Always say unread even if viewed though the app
- all of it
- Don't put things all the assignments in one section, separate them from each other. Put the completed and uncompleted assignments in different sections.
- homepage that gives you access to other binghamton websites
- Nothing.
- less steps to access each module
- The overall user interface was vertical compared to MyCourses (which is horizontal), and the experience just didn't feel natural while navigating the site.
- nothing
- None
- There were no significant differences.
- N/a it's pretty much better in every way
- none
- I really dislike the "files" page and how the syllabus main page always started from the very first day of the semester,

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- so at this point it is difficult to navigate that page. I also am just very frustrated having my grades on two different platforms. I like myCourses because I'm used to it and because that's what all of my other classes use.
- I'm not a fan of the way files are presented to the user my only problem with it was it was annoying using this and my school's blackboard but i preferred canvas
- The homework's were often programmed wrong and had to be fixed a lot!
- repeated areas of files because of the organization
- I did not really like the "announcements" section. You had to click on each announcement to read the entire thing as opposed to on Blackboard where the announcements all show up in full at once.
- Not much organization.
- Videos sometimes had issues displaying upon initial open of canvas
- accessing files
- Nothing it was a lot better
- Looking up feedback on uploaded assignments is difficult to find.
- It sucked, give us blackboard
- Assessing everything is annoying
- when a quiz is over, let the student see all possible answers again, not just the one they chose
- Canvas can be better at showing grades.
- Canvas is much better than mycourses
- none
- sometimes it was a little slow
- Accessibility, like how mycoses can be accessed through my.binghamton.edu
- Canvas seems to be a little bit more unorganized than myCourses. It is harder to find things in my opinion.
- The organization of files
- bigger screen to view comments for graded papers, or make a page that doesn't take up the entire screen like the full size does
- The syllabus
- Not sure, I think it is much better than blackboard.
- the class always opened up to teh syllabus, and it was very cluttered because the professors put a lot of things on the syllabus. I like it better when the class opens to announcements
- sometimes things were put into so many different folders that it was hard to find them
- Trying to access the syllabus and things better
- location of content
- The area where courses are listed
- It needs to be more organized and easier to find documents
- myCourses is generally more user-friendly, intuitive, and clear in its use. It also has less bugs, which was an issue with Canvas.
- Grade posting
- not sure
- harder to get around
- Posting content for professors
- consolidation
- The content was confusing- there was a "files" section and a "modules" section that sometimes had the sameness information, and sometimes didn't. It made finding material more difficult.
- Having all my classes on Canvas

- It can be confusing when there are a lot of documents in one page. More folders would make functionality better
- Make it MyCourses
- I like that MyCourses automatically generates an announcement when files, grades, and announcements are uploaded. With canvas, I am left searching through the files looking for a document that doesn't even exist there yet. Also, Canvas requires me to download all of the files instead of being able to view them in my browser whereas MyCourses doesn't.
- Canvas is hard to use at first. Getting a hang of the layout is tricky
- I definitely did not like the fact that when we received a notification on my iPhone or my email, you couldn't really open it, it just brought you to the home screen of Canvas, and you had to look for the documents. I wish it would just open to that specific document when you click on it.
- I think overall myCourses is better in all aspects besides the modules section
- kind of hard to find files
- The syllabus tab was just a schedule of upcoming due dates, but did not have the actual schedule. Navigating the files was difficult at times as they were not in order by date posted. Files with "ink" written on them from in class presentations did not show ink sometimes or messed up the powerpoint slides.
- Nothing, I really enjoy the platform.
- Accessibility of files and other systems.
- It's very awkward to use. Very glitchy. Things are hard to find
- I'm just not used to use Canvas. Using different LMS system was extremely unpleasing

- Sometimes hard to find course content, a lot of extra features that weren't ever used
- it was just never updated enough for my class. i never know what my grades are. i can never find the right links to powerpoints and stuff.
- Power points do not open in canvas correctly
- Some functions would take you from the course back to the main page unexpectedly so all functions within a course should be for that course only. Also navigating between courses could be easier for both MyCourses and Canva.
- Don't know difference between announcements and notifications, lose track of announcements easily because they get buried.
- I did not take multiple courses only the one using canvas so I can not compare the "dashboard" to my courses. Which I think my courses has a comprehensive dashboard with academic support services easily accessible. Which I am unsure if canvas is equipped to offer. That is a very important tool for you toting, academic advising and taking surveys :)
- Organization could be a little easier
- Nothing
- I like how myCourses can show you assignments and announcements from every class in the same place. I only used Canvas for one of my classes so I am not sure how it works while taking multiple classes.
- Everything
- allow google drives to be directly turned in

- difficult to find things, difficult to access it (cookies required, can't just type in the google search)
- Nothing
- Could not log into canvas directly from their website. Had to go from my courses to access the canvas page which was annoying
- Organization
- It's slow, difficult to navigate, and gave useless notifications
- It was hard to navigate. I wasn't sure where the powerpoints were placed, had to look in almost every folder to find. When out professor would message a specific student, everyone would get the message. Overall, Canvas seems messier than mycourses.
- Why couldn't the platform let my professor integrate the syllabus into the page itself? I had to download it each time as a temp file (or look through my downlaoded files) every time I wanted to view it in my browser
- Canvas could be more organized and more intuitive for use.
- More organized within the dashboard
- Grading was a little less organized
- the organization and its connection to myCourses so that they could more easily be used interchangeably.
- None, I hate myCourses.
- I do not believe there is anything on canvas that mycourses does better than canvas.
- Canvas could use a better course organization system.
- i would receive LMS notifications about upcoming assignments a week after they were due
- Not much, my courses is not better in any aspect
- Bad layout

- When you submit a homework and get certain questions wrong, it erases all of your choices and makes you plug them all in again to try over, which can be annoying at times. It'd be nicer if all the correct ones stayed and only the incorrect ones disappeared. Not a huge problem, just a little inconvenient.
- Difficult to get to
- Where files and modules are located are very confusing.
- It was hard to use, extremely unorganized and uninspired, and it is very difficult to find content in my courses because of extraneous side tabs such as "files" which was very confusing and hard to work with. Also, it is hard to find announcements provided by my instructors.
- It was hard to find files since there were so many
- Organization
- Formatting was sometimes off, font was small and hard to read
- Canvas needs more organization. It was hectic and the way links open was terrible.
- It was hard to look at, a lot on the page at once, not organized as well as mycourses
- The UX
- Some things look and are very scrambled.
- It was just frustrating to acess and go back and forth between canvas and mycourses
- Organization is terrible.
- nothing
- Canvas needs to be majorly changed in order to make it easier access the content of the class and see your grades.

- It's a very unorganized system that needs to better present information in a manner that is not so indirect and

visually intimidating due to its poor organization.

Brightspace

- there are too many ways to get to the same thing, you couldnt easily switch between tabs, too many folders
- navigation
- Everything.
- Easier access to videos
- I don't know
- The checkmark system is kind of annoying. I would go look at something, but sometimes it didn't check it off.
- none
- If everything in Brightspace was replaced by MyCourses it would be better. Until then, Brightspace is terrible.
- maybe the customizability of the color theme, nothing much really
- I think Brightspace was much more difficult to navigate when compared to myCourses
- It needs more organization; MyCourses is very easy to use.
- Brightspace should be able to calculate grades as they go in (which they currently do in myCourses).
- Can't think of anything.
- it was difficult to find material sometimes. I feel like a search bar would be a huge improvement in any platform like this
- The structure and organization
- Easier navigation, less "space"
- notes
- keep mycourses
- the quiz should be able to go back to the previous question
- none

- I just think my courses is familiar and simply formatted
- none
- too complicated and laggs and only works with google chrome
- Notifications of posts or deadlines
- Because I frequently use Google Docs, having the ability to connect or upload an assignment that was a google doc would make Brightspaces significantly more convenient.
- Towards the end to the semester it was difficult to access the Panopto recordings through Brightspace. The webpage had to be redirected each time.
- nothing
- Grades
- Show the current grade. The spot for this was left blank so i don't know what my grade is.
- Communicating in group discussions
- Professor can monitor time spent logged in
- The overall layout is very confusing
- i didnt have to submit anything on here but it is really easy and simple to do it on myCourses
- Not much needed improvement
- I am not sure if this was due to my professor or to Brightspaces, but assignment descriptions were not easily accessible in Brightspaces.
- Accessing class materials was extremely difficult. Every time you hit the back arrow it takes you all the way back to the first page.

- Literally nothing.
- my grade in chem
- the organization
- Grading
- You had to click through so many pages to get what you needed. Links were hard to access, it was impossible to download and save notes. Some aspects did not work on tablet. It took longer to get to the notes than it did to read them. It was not user friendly in any way shape or form.
- Finding content. Too many modules are confusing.
- Being able to check things off when you're done with them, not when you just viewed them
- It was difficult to print powerpoints and class notes. There was no automatic option from the link like in myCourses so I always had to perform an extra step to download the powerpoint in order to print it out. Accessing documents in general were a pain and it was difficult to navigate with all the folders and docs. It also wasn't possible to have more than one window open at a time, so I would have to keep pressing the back button when trying to look through documents.
- Organization (the lecture slides were hidden at the bottom of the scroll bar)
- looking up grades, reviewing quiz answers/test results
- sometimes content is in a folder, in another folder, like russian nesting dolls and it's difficult to go back one and not all the way
- nothing
- The app didn't work well at all so it was rather inconvenient to check grades or read announcements. I much prefer the my courses app

- Bright space is overwhelming and has too much going on. It is not simple to get to the different topics in your classes. Additionally the system that leaves the notifications of things that need to be done is anxiety inducing when you see so many numbers of things that you need to do, especially when most of the things are not necessarily due.
- Accessing the content was difficult. It was hard to open a new tab with the new content because it would show up as an error. Finding videos were difficult. Finding content was hard, especially with the weekly and chapter modules.
- Nothing
- The component of having to clock on links to make them read, sometimes they didn't register and it gave me OCD and I spent hours clicking tbrough things to make the "read" dot go away. I don't like how it pressured me to perform a certain way. It motivated me to get my work done in a negative way. The way the grading came back mad me more critical of myself and I would be concerned moving forward on how this will negatively impact students perceptions of getting an A instead of focusing on learning. I think we need to focus less on how to get A's and more on the value of the work and focus on the improvements the student has made instead of highlighting numbers, which it this model highlights in a toxic way.
- Being able to open a lecture slide in a new tab while keeping the original page.
- the many tabs made it seem a little cluttered
- Grades
- None.
- Sometimes the notifications did not work properly (i.e., the notifications don't

- always disappear after I click on an item which can be confusing)
- Not sure, fairly similar overall.
- It could be much easier to navigate
- Accessibility
- the navigation.
- I think Brightspace is much better than myCourses
- Organization, instructor training, accessibility through mybinghamton, everything
- the videos
- Viewing past exams and their questions/answers
- Send email notifications instead of having to check the website for notifications/updates.
- A bit complicated to find stuff. Categorization was weird?
- Being able to see your grade at a specific time
- I like brightspace better
- too confusing to work
- Nothing
- Brightspace was only inconvenient because all my other courses use myCourses, it was just a hassle to go between the two websites
- I believe it could be easier to reach videos on brightspace, the side menu could be a bit larger.
- Less complicated folder systems.
- The app could be easier to navigate.
- Mobile use. The mobile browsing experience was terrible compared to myCourses' mobile browsing.
- Having the ability to access more classes
- nothing, it is fine
- don't send out duplicate emails when announcements are sent on brightspace, also make an

- announcements tab the side tab and make like a home page
- myCourses is a lot better
- I do not have any complaints, but my class (CHEM 108) did not use most of the functionalities of the service.
- Using the phone app, you often times have to click on the web browser to access certain features like grades, and I wish you could just access them from the actual app on the phone versus going to the web.
- Grade notification. I got a grade and was not notified. Other notifications work well.
- all of them
- When you press the back button, the pages are formatted differently. You also can't open something in a new tab.
- Just use mycourses
- The whole organization of it is overly complicated and needs to be reduced
- It's complicated to navigate.
- The ease in seeing grades
- Ease of use on mobile devices
- I just didn't like that one of my classes was on it and the rest were on mycourses, I'd rather have everything in one place.
- none
- the grades were messy and never added up to the correct numbers
- I like all my classes to be in one place
- Brightspace was not organized as well as mycourses in and all of the information of it seemed cluttered and overwhelming.
- It's too hard to navigate and I can never tell when my teacher has posted something but I also think that with any other professor it could have potential.
- The format of the website on an iPhone

- Brightspace is harder to get to from searching it on google.
- hard to access everything -- too many folders aka clicks to get to what i need. this is especially relevant in terms of looking up grades
- Nothing
- The tabs on the sidebar can be a little confusing to press, I feel like I have to press around a bit until I find what I need
- None
- Being able to search up content we need
- nothing
- nothing, I really enjoyed the app
- Organization, it is very difficult to find what you are looking for on the website
- for the grades, i could never see my grade at that point because the total points were not taking into account assignments that we have not yet completed. In the future, only include assignments as we do them, so that students can see their overall grade at that point.
- no comment.
- It was all terrible
- Accessibility to grades from app
- Checking grades, ease of access
- Hw
- The grades page was a little wonky. It sometimes displayed the wrong grades, but that may have been my instructor's fault.
- smartphone accessibility
- occasional webpage errors
- It's overwhelming with information
- I would get emails from TAs that were not my own, in the app i couldn't look at my grades without being redirected to safari
- I think being able to get in contact with your group is relatively difficult, and their

- "chat" option that they have is not really usable AKA there's no directions on how to use it on the website and you can't have a group chat, but that would be very helpful.
- Finding content for the class
- It has the same issues as myCourses
- A space for all documents to be accessed in one spot so that the user doesn't have to go through all the announcements.
- The clarity and orgainzation. There were multiple places things could be but there were extremely difficult to find.
- The menu's to find grades on myvourses are simpler
- The tabs could be more organized. I never understood where to find certain labs or assignments under which tab.
- I could not imagine having a brightspace for more than one class, the layout makes switching from one course to another seem like a huge task. myCourses works better when dealing with 4+ classes
- You can't see your classmates' discussion posts, so you have no idea if you're doing it right.
- Nothing
- The log-in. I had to log-in via a link on my courses every time.
- nothing
- Confusing
- this was only accessible on google chrome which was inconvenient
- I hated how difficult it was to find things. You either had to go to chapter module (and click each one one by one trying to find which one you needed since they weren't really labeled). Weekly module was pointless and confusing, since my professor wasn't keeping up with the original timeline they were put up with.

There are too many tabs at the top, and most of them aren't relevant but have to be there anyway. It's hard to view course announcements (so I just never see them) when they're shoved into the side column of an already busy homepage. We had weekly discussions where we had to watch a few videos and then post a discussion about them, but it was near impossible to find where the videos were posted without searching through the weekly modules one by one trying to remember what you are up to, and then going back to the discussion page after to try and find the right one. Brightspace just has too many features that make the website seem disorganized and it's very hard to find things. At least with mycourses it's simple, easy to find what you're looking for (since everything isn't white), and we all already know how to use it. Brightspace, on the other hand, just made an already extremely difficult upper-level science course disorganized and hard to pass.

- View the grades on the app
- sure
- Categorizing where notes are and where discussion videos are. Sometimes I didn't know where things were and it was hard to find.
- Brightspace's attempt to break things down into modules makes things more difficult to find.
- I do not like how difficult it is to navigate around the website, between the weekly and chapter modules it is very confusing as to where I should go. Also, the discussion videos not being under the discussion tab was an inconvenience.
- Make sure everything works for every device

- Ease of access
- The announcements over brightspace were not always shared with me via email as are mycourses announcements. One time this led to not properly completing an assignment due to not receiving directions. I had assumed that all Brightspace announcements would also be shared via email, but they were not in at least this one important case. This may have been due to its nature as a pilot program.
- I believe it's just the way my class was set up but my grades were in progress the whole semester so I couldn't get an idea of what my status was. For an example I would have 7 assignments and we've only been assigned 5 so I would have a 0 for 2 of them giving me a weird and inaccurate grade.
- You can't access your full grades on the app without having to link out onto the course homepage, which defeats the purpose of having the app.
- Nothing! Stop using myCourses
- The amount of tabs that one must navigate through is a bit cumbersome at times.
- It's very hard to navigate, not user-friendly, you have to scroll down to see different folders because the box to view the folders is tiny, even on a desktop, so it looks like the instructor hasn't posted anything more
- The grades (the most important part) are too hard to access. The app is almost useless if you have to go on a web browser to view the grades anyway. Also very confusing and counterintuitive compared to myCourses when trying to find content for a class.

- Mycourses had push notifications and emails. This is really important
- literally everything
- just get rid of it
- Make it easier to access
- Getting course documents, viewing multiple docs at once.
- organization of course content
- Nothing comes to mind
- Video links to Panapto
- the grades were confusing
- trying to find announments from the instructor or TA's
- Video uploads
- I had difficulty locating and receiving notifications, feedback, and comments/discussion posts.
- grades system was poorly set up
- The grades were immensely difficult to view in my experience as well as track personal progress in the course.
- I worked on an assignment for two hours (going through multiple questions) and when I submitted it, it appeared as though it was submitted but was not automatically graded. Luckily I still had another attempt at the assignment, so I did it again (faster this time because I already knew my answers) and it submitted with a grade. If I didn't have this extra attempt, I would have received a zero for this assignment.
- Easier or more clear access to course content.
- Less tabs
- Nona
- So much clicking to get around the bright space website. It's so hard to find anything
- It should be integrated with blackboard, either all classes should use it or none should.

- Took myself and friends many weeks to figure out where everything was. Still have trouble locating new documents, where discussions are posted, etc. Very annoying system and not helpful at all.
- Finding things sometimes difficult due to number of subfolders
- Don't use it
- Confusing to navigate / have to click through too many steps to get to each page
- I did not like the format of Brightspace at all. I thought that it was very confusing and I definitely like MyCourses a lot better.
- Make it easier to navigate and get the resources needed. Perhaps it was just my professor, but assignments or anything were not as well organized as they were on MyCourses.
- not really anything, I enjoyed using it
- Ease of logon
- The UI could be more condensed to be easier to access
- none
- I don't know about myCourses but Brightspace video quality was very poor. It made my windows quit constantly and the videos just never played smoothly. Try using YouTube for videos.
- Notifications
- Very confusing to use- make a better format. Notifications do not go away even though they have been checked, logs me out too quickly, difficult to access if not on a computer
- it not be a different website than my courses it would be easy if all my classes were on my courses or all on brightspace
- just inexperienced and seems troublesome to upload documents
- Everything seemed fine to me.

- the number of additional features should be increased.
- Fewer separations between content sections. Ability to open links in new tabs. Simpler mobile app. Easier to access on desktop-currently difficult to find without a bookmarked link.
- Finding which assignment or notes you needed got a little tricky at times the way it's set up
- Poor organization, but honestly I think the professor did not understand how to use it
- Discussion visibility
- It's difficult to navigate and has an unnecessary amount of options
- It was separate from my other classes. It would be easier if they were all on the same platform.
- Some pages were difficult to navigate to. It took some searching sometimes (not intuitive)
- Bright space is better than myCourses in all aspects.
- Make it easier to find specific things that are hidden behind multiple clicks
- I don't like having a separate platform for just 1 class,and looking up grades was annoying
- More instruction at beginning of use
- Noticeably more internal errors occurred
- It doesn't show overall grade. And it's hard to access through the app.
- Announcements
- I wish we could customize what sections we want
- The app makes you go to an online browser for a lot of things which I don't really like.
- hard to look up the grades, cant follow the assignments...etc

- A better format to the website would make it easier to locate all areas on the page
- The ease of using the website, layout
- Submitting video content and the deleting and uploading process
- The accessibility of everything. It was extremely hard to find what I was looking for every single time I used it. Mycourses is much more straightforward and user friendly.
- Easier access of grades
- I don't know
- there is a lot of information on the site that we did not use
- Showing the current overall grade in a class
- Not sure
- should be able to see overall grade instead of just individual assignment grades
- Nothing
- Make notifications more visible
- Too many tabs to choose from to navigate within a course. Sometimes there was confusion over where things (assignment submissions, etc) were located since there were so many options.
- None
- The discussion forums were very difficult to navigate: to see threads, submitting responses, following responses.
- I'm not really sure. Our professor made it very easy to navigate.
- A little slow
- Brightspace's navigation took some adjustment and I don't recall if there was a tutorial upon first logging in. That may have helped ease my challenges in navigating the site.
- It was easier on my courses cause all classes were there as well. Sometimes

- I'd forgot to check brightspace because it wasn't with my other classes
- The set up of the website is disorganized and complicated. If you want to see a score on your exam on the app you have to open the web browser to actually view it
- Grades should be calculated automatically during the semester
- it's not intuitive in terms of accessing documents
- I think there would need to be some standards on how to post material - we found it very confusing to get to certain content, which was moreso a result of how the professor posted things. For example, could only find the syllabus by scrolling back to an announcement from the first week of class, not from going through the content folders.
- Nothing
- I absolutly HATE that brightspace makes it imposible to "open link in new tab," causing me to reload and go back, dupicate tabs, etc... It's dumb that they blocked it and makes brightspace 100x more annoying to use when viewing multiple class content
- Hard to find materials
- Submitting assignments, viewing announcements
- Way too many redundant tabs and menus
- The modules are confusing to manage
- I felt like I needed to search sometimes if I clicked the wrong button.
- Access to grades on the app instead of re-directing to a web page, i also received notifications from TAs that were not my own
- Mobil app, grade section, not easily accessible
- Notification of content and grade posting

- Finding where my grades are could be easier, rather than only getting a notification when a new one is posted. Also, I didn't like that it showed you the setup of the website almost like a website made in google sites.
- Mobile app
- The video processing was a bit difficult. When I tried to upload videos, the file would occasionally get corrupted
- Simpler access to grades would've been nice
- Put all the classes on it
- total grade percentage/total points need to be present
- User interface is awful. It's extremely difficult to navigate to find material and to move between pages.
- There were too many tabs to get to one folder.
- It didn't work on any iOS device and was a pain to deal with and notifications did not work
- Uploading content, I got an error that post to upload my work wasn't available frequently. The app could have been a lot better. When I wanted to see something more in-depth, it would open up the website through the app, instead of being on the app.
- Navigation of content
- When announcements are sent out on Brightspace, they don't get sent to our emails, which is what we were used to from last semester. This made me less prepared for weekly discussions. Since there are no obvious benefits of using Brightspace it was overall annoying to use because it was just another website to bookmark.
- literally everything

- The app is slightly confusing because you have to access the site to get certain features
- Everything. Brightspace is inadequate is most ways (apart from modern design) than myCourses
- Nothing
- Organization. It takes double the number of clicks to get something done. A clear grade section that actually works and that works on mobile.
- Lecture slides would sometime not load
- None.
- Sort of confusing to navigate

Blackboard Ultra

- None
- Maybe have a tab for each course. There were many occasions that I had to start my search all over because there wasn't a tab for what I was looking for (ex: exam review questions)
- Submission of assignments was difficult and confusing at times.
- It's layout, seemed more complicated to navigate than I ever remember myCourses being upon first learning it.
- Hard finding grades
- easier to access
- Not sure, didn't use it that much
- Can't recall
- everything
- Connecting it to the myBinghamton portal would make access easier
- user format
- I could not access the discussion section of my class several times. The discussions were an important part of my grade, so not having access to that was very annoying. I contacted the support people, but they could never do anything to fix it. The problem eventually

- Announcements page and grade notifications could be sperated.
- I have no clue where to find the link or how to get there outside of already having it autocomplete
- All of the class grades being in one spot and calculating overall average
- It's not intuitive to use at all.
- i dont know if it was how my professor displayed content, but it was very disorganized and I felt like I had to hunt for things in folders.

fixed itself and I could access the tab again, but it kept happening to me. I still don't know what caused the problem.
- Mobile usage.
- Viewing assignments was difficult compared to myCourses
- Make it easer to find and see grades
- accessing courses and grades
- none
- I think it has an extremely unorganized feel to it and you have to click too many things to get where you need to go.
- Accessing classes
- I had difficulty finding grades
- it was so annoying to use
- not much
- the grade book
- I would have liked to see an options to look at my grade in the class.
- harder to navigate, doesnt have all the options
- It's fine the only annoying part is that for chem 111, the iclicker is not connected to the ultra and also, chem 111 uses three sites for students which is

- ridiculous and confusing (mycourses, pilot, and loncapa)
- Too many things going on
- Viewing assignments, announcements, and grades. Logging in is a hassle.
- Making it more user friendly. Hard to find things such as grades and assignments.
- Interface is ugly, and it was not helpful that the first page was the unintuitive "Course Stream" rather than the class itself
- It was difficult to access some of the content because clicking on what looked like a link to recently uploaded content would take you to the course's page instead of the PowerPoint or whatever you were trying to access, and you ended up having to click through a lot of things to finally get to it.

- I found the layering difficult to navigate and often closed out of the course accidentally
- Having an actual link to the course. We were provided a link in an email so it was somewhat cumbersome to go into my inbox to get to another website.
- its hard to see the announcements, and when you click on a link it opens in in bb ultra so you loose what you were doing. Also many times it would not let me login in.
- Easier access to everything
- Sending notifications when content or grades are posted

Appendix 4: Accessibility Analysis

In the process of drafting this document, the authors compiled together the WCAG Self Analyses provided by each of the three vendors and used that as the primary quantitative factor for assessing accessibility compliance. There was also a further qualitative perspective garnered over the course of the several product demos, pilot, and conversations with the vendors.

Brightspace seems to have taken an "accessibility-first" focus when it comes to the development of their LMS. In their WCAG 2 Self Analysis, they provide the most specific details with regard to how their application meets accessibility requirements, to a level which exceeds both Canvas and Blackboard. Where Brightspace does not meet accessibility requirements (to their fullest extent), it appears to be in regards to course content creation, specifically for use by faculty/instructors, and in ways which are inherent to all web applications (as limited by modern web browsers and web standards). Notably, however, is that Brightspace's self-analysis did not use the latest WCAG 2.1 specification, so their accessibility analysis does not cover some areas which were addressed (albeit in a highly limited capacity) by Canvas.

Blackboard, while the most verbose in their responses to the WCAG 2 Self Analysis, seems to have put the least amount of effort into making sure their platform meets accessibility requirements. There are numerous examples where (by their own analysis) they fail to meet the requirements for very basic and simple-to-fix things, but for whatever reason have not modified their application to address those issues. Because of this apparent disconnect, it appears that Blackboard's application development team operates independently and disparate from their accessibility team. This may not be ideal.

Unlike the other two, Canvas used the most up-to-date WCAG 2.1 specification for their accessibility self-analysis, but they also provided the least amount of detail (by far) in their responses. As a result, when accessibility compliance surrounding a particular subsection is stated as "partial" or "incomplete", it is up to the reader to guess where the accessibility gap exists, and how it might impact end users. While we found no indication that their product is less accessible than Brightspace, the lack of information available makes that a more likely conclusion.