

# Canvas LMS Pilot 2011-2012

## Final Research Report

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### INTRODUCTION

This report summarizes the results of a pilot study conducted by UW Information Technology and the UW Office of Educational Assessment during Autumn and Winter quarters of the 2011-2012 academic year. The study focused on faculty and student experiences using Canvas, a new learning management system (LMS), by [Instructure](#). The primary goal was to understand how well Canvas met the needs of a range of users and use cases and provide recommendations regarding the adoption of Canvas at the UW.

### PARTICIPANTS & METHODS

Instructor participants for the Autumn and Winter pilot were recruited to yield a stratified sample of courses to allow for comparisons across groups. Of thirty-nine instructors, fourteen participated in both Autumn and Winter quarters, an additional five participated in Autumn quarter, and an additional twenty-one participated in Winter quarter. Instructors were asked to complete an intake survey about the course(s) in which they intended to use Canvas and their previous LMS experience, a survey in week three of the quarter, and a final survey after the quarter ended. Some instructors also participated in brief follow-up phone interviews. Approximately 1,000 students responded to student surveys during the final two weeks of the quarter. All surveys were administered online using the UW Catalyst WebQ system. Instructors were sent suggested text for inviting their students to participate in the survey. Table 1 summarizes pilot study participants according to two variables (campus, course format) that did, in fact, yield comparative differences.

**Table 1. Number of courses, instructor participants, and student participants according to class format and campus**

	Number of courses	Number of instructors	Number of students enrolled	Number of student survey participants
<b>In –Person classes</b>	49	39	4254	864 (20%)
<b>Bothell</b>	15	9	621	108 (17%)
<b>Seattle</b>	30	19	3477	691 (20%)
<b>Tacoma</b>	4	3	156	65 (42%)
<b>Online classes (Seattle only)</b>	6	5	193	115 (60%)
<b>Hybrid classes (Seattle only)</b>	2	3	37	20 (54%)

## SUMMARY OF RESULTS

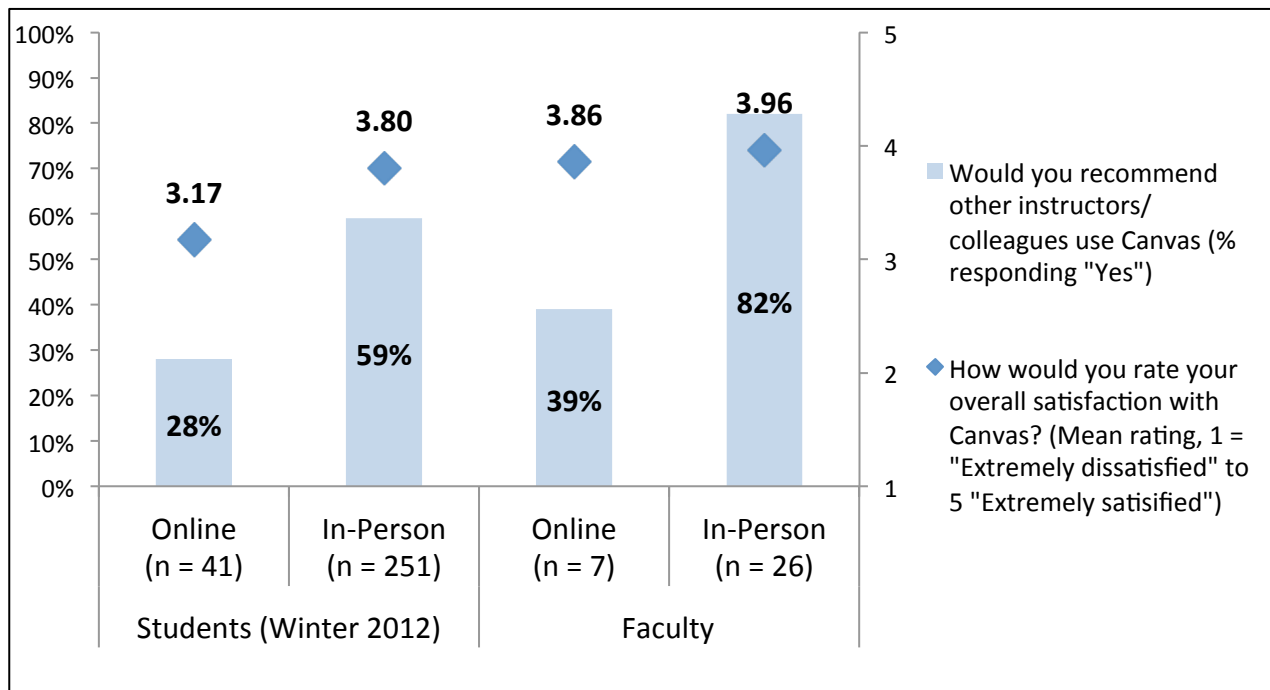
This section presents an overview of key findings from the Canvas pilot study, organized into three subsections: (A) Satisfaction with Canvas; (B) Impact of Canvas; and (C) Challenges.

### A. Satisfaction with Canvas

Satisfaction among faculty was fairly high; students were generally neutral about Canvas.

- On a scale of 1 “Extremely dissatisfied” to 5 “Extremely satisfied,” faculty gave a mean rating of  $\bar{M} = 3.94$  and 71% indicated they would recommend Canvas to their colleagues.
- Students gave a mean satisfaction rating of  $\bar{M} = 3.72$  and 56% recommended that other instructors use Canvas.

**Users in online or hybrid courses were less satisfied with Canvas than those in in-person classes** (Figure 1). Students’ mean ratings were significantly different across class format;<sup>1</sup> a significantly higher percentage of students in in-person classes would recommend other instructors use Canvas than those in online classes.<sup>2</sup> For faculty, there was not a significant difference in satisfaction ratings, but a significantly higher percentage of faculty teaching in-person classes would recommend the tool to their colleagues than faculty in online classes.<sup>3</sup>



**Figure 1. Mean satisfaction ratings and percentage recommending Canvas, faculty and students.**

It should be noted that the **sample of online classes was extremely small and represented very few UW departments.** However, the findings also suggest that more study is needed before Canvas can be implemented in all online UW classes. Additionally, certain features of Canvas, particularly a discussion forum and notifications, need to be improved in order to work well for online classes.

<sup>1</sup> According to an independent samples t-test,  $p < .001$ .

<sup>2</sup> According to a Pearson’s chi-square,  $p < .001$

<sup>3</sup> According to a Pearson’s chi-square,  $p < .01$

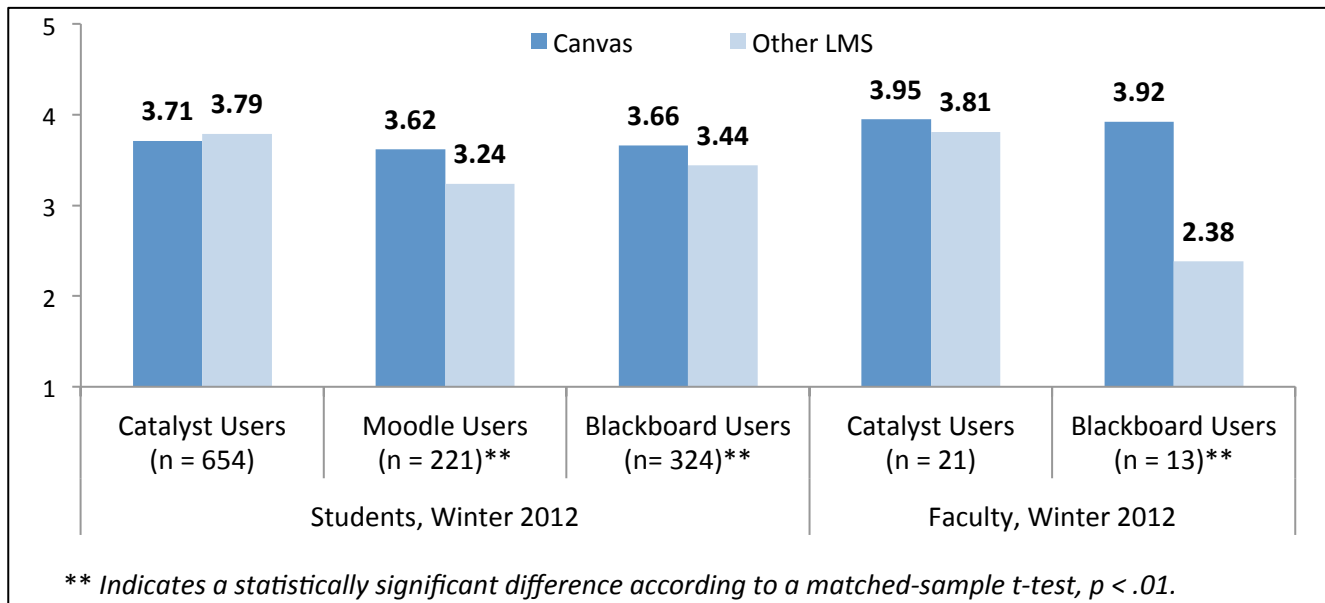
In general, users were comparably satisfied with Canvas and Catalyst tools, but were more satisfied with Canvas than other LMS's (Blackboard and Moodle) as shown in Figure 2. In open-ended responses, faculty and students also reported a better experience with Canvas than with other LMSs they had used (including BlackBoard, Moodle, and Catalyst).

*"I much prefer Canvas to either Catalyst or BlackBoard" - Faculty*

*"it is the best that I have used so far." - Faculty*

*"[Canvas] is much more complete." - Student*

*"It's much better than both catalyst and blackboard. Especially blackboard. Interface is nicer, too." - Student*



**Figure 2. Mean satisfaction ratings (from 1 "Extremely dissatisfied" to 5 "Extremely satisfied") of Canvas and other LMSs from previous LMS users, as indicated**

Among students, satisfaction ratings were generally lower among students more advanced in their academic careers than students less advanced. Specifically, freshmen gave significantly higher mean ratings than the average from other students combined, and graduate students gave significantly lower mean ratings than the average from all other students (Figure 3).<sup>4</sup> The open-end responses suggest that the more advanced students were more familiar with other learning tools; therefore, they were less willing to adopt Canvas.

<sup>4</sup> All one-way Analyses of Variance were statistically significant, with significant post-hoc and contrast analyses ( $p < .001$  for all comparisons).

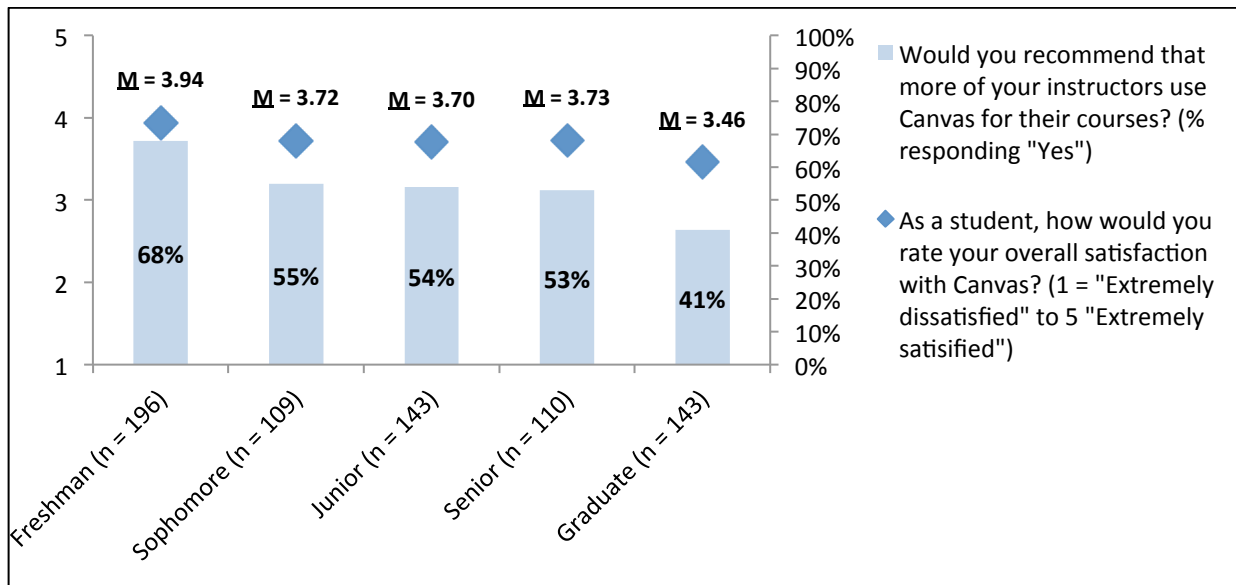


Figure 3. Mean satisfaction ratings and percentage recommending Canvas, students (Winter quarter only)

## B. Impact of Canvas

The impact of Canvas was assessed in three areas: effects on student learning, faculty teaching, and communication. Overall, Canvas had a positive impact on faculty teaching; however, there was no strong impact on student learning or communication.

### 1. Impact on student learning

**Evidence for impact of Canvas on student learning was mixed, and reflected overall satisfaction ratings.** A set of items were included on the student survey to assess impact of Canvas on student learning. As Figures 4 and 5 indicate, findings for these items were extremely consistent with satisfaction ratings.<sup>5</sup>

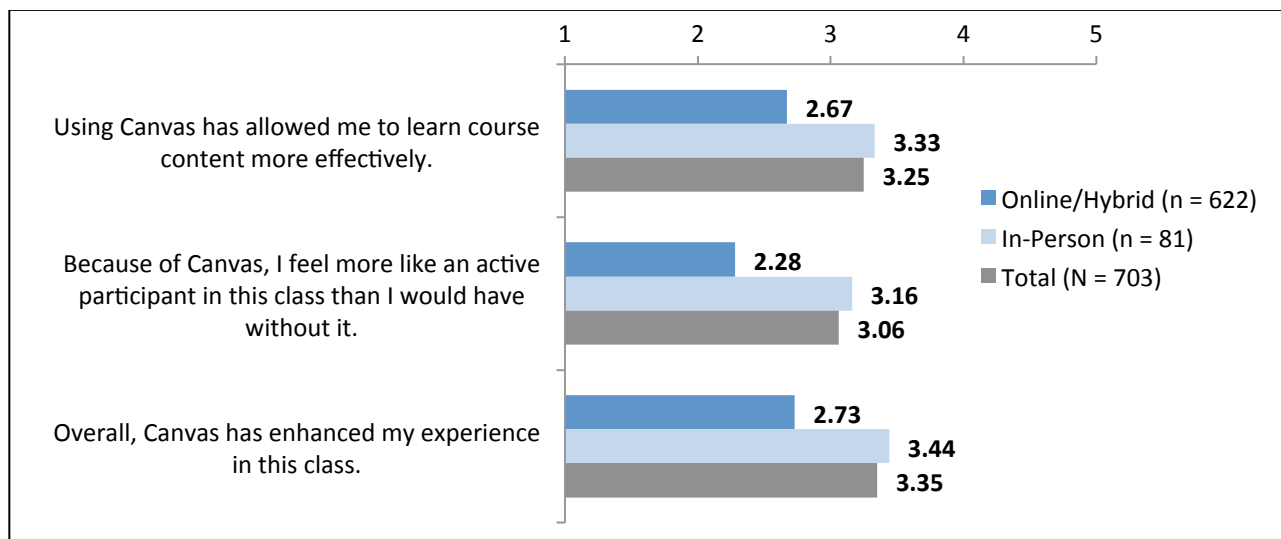


Figure 4. Students' mean ratings for items about impact of Canvas on their learning experience, from 1 "Strongly Disagree" to 5 "Strongly Agree," according to class format

<sup>5</sup> In general, statistical testing for these items were the same as those for satisfaction ratings.

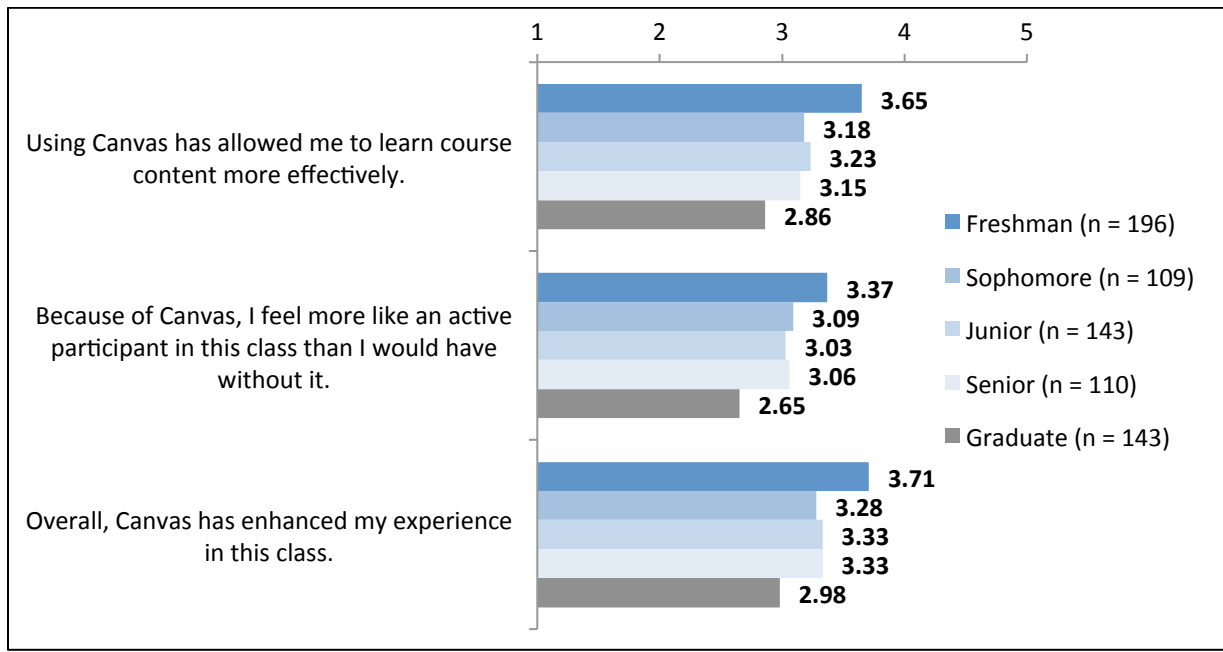


Figure 5. Students' mean ratings for items about impact of Canvas on their learning experience, from 1 "Strongly Disagree" to 5 "Strongly Agree," according to students' class standings

## 2. Impact on faculty efficiency

Faculty saw increases in teaching efficiency, due mostly to Canvas' integrated assignment and grading system. Overall, 73% of faculty agreed or strongly agreed with the statement, "Using Canvas last quarter made teaching my course(s) more efficient. However, a significantly lower percentage<sup>6</sup> of faculty in online classes agreed with this statement than those in in-person classes (see Figure 6).

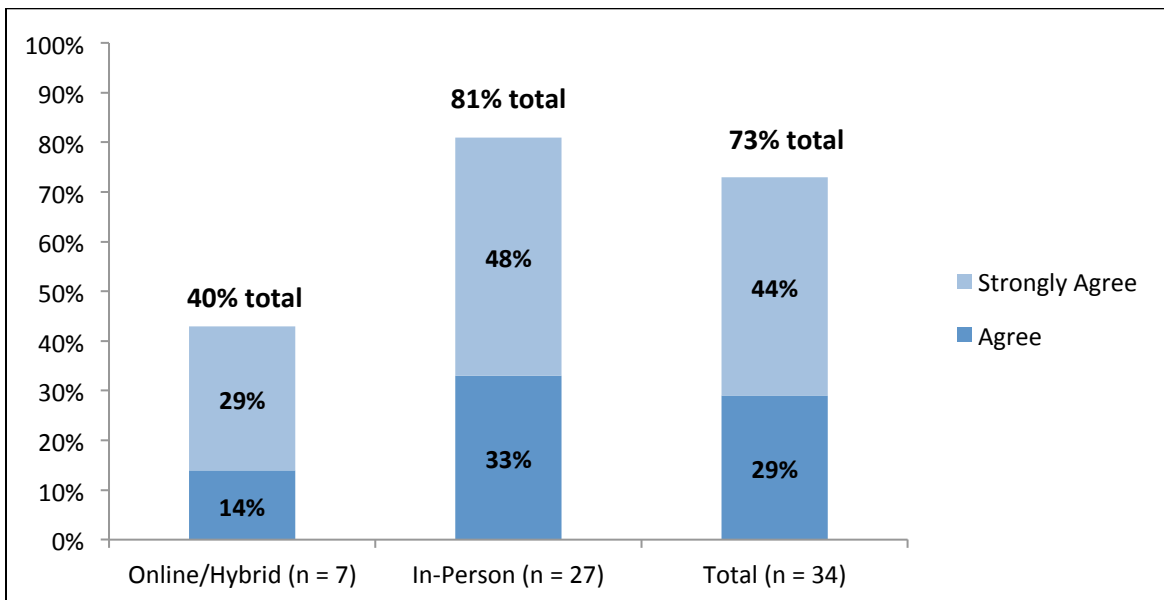


Figure 6. Percentage of faculty agreeing or strongly agreeing with the statement, "Using Canvas last quarter made teaching my course(s) more efficient," according to class format.

<sup>6</sup> According to a Pearson's chi-square analysis,  $p < .05$ .

Open-ended comments suggest that faculty found time savings with Canvas primarily in the domain of grading. When describing what features enhanced their teaching the most, faculty most frequently mentioned (1) SpeedGrader because it saved them time in grading, and (2) posting assignments such that they are integrated with the course calendar and student submissions. Below are selected quotes illustrating benefits to faculty efficiency in these tools.

*Love SpeedGrader-- efficient, allows easier comments, and uploads, easy to see state.*

*SpeedGrader, both for my time and for encouraging student response.*

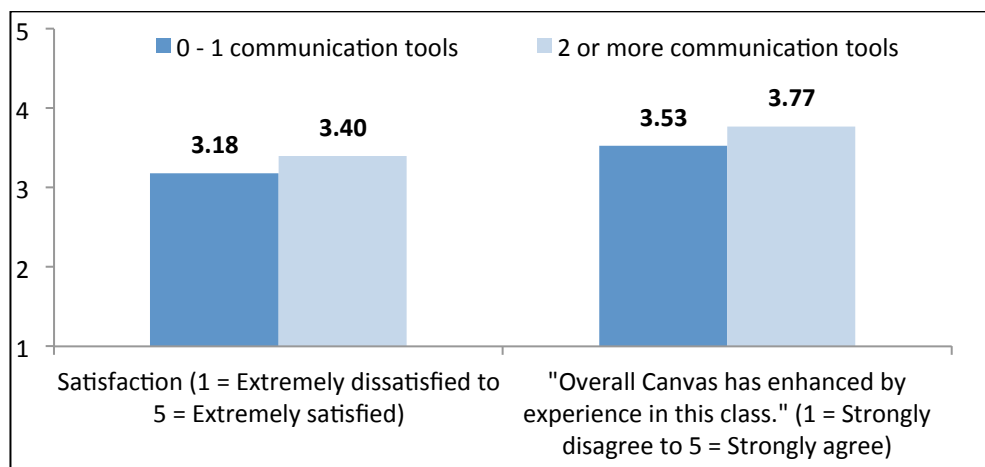
*Assignment posting and submission were essential to ensuring promptness and sequential productivity.*

It should be noted that almost all classes including in this pilot involved grading of traditional writing assignments. To date, **Canvas' grading system is virtually untested in many contexts**, such as mathematically-based quizzes and assignments, multi-media submissions, and science lab write-ups.

### 3. Potential for impact on communication

**There was no clear evidence that Canvas enhanced communication for pilot participants. However, there is future potential for teaching innovation using Canvas' suite of communication tools.** Canvas provides many different features designed to enhance communication between faculty and students and between students and their classmates. During the pilot, students and faculty in several classes, most notably in online classes, found **significant challenges with Canvas' discussion board tool**, concerning primarily how discussion threads were organized and how responses to existing posts were displayed. It is expected that the design of Canvas' discussion board will be enhanced before adoption by additional UW classes in the fall.

Many of the communication and collaboration features were new to faculty and did not necessarily fit with their existing teaching practices. Open-ended data suggest that **faculty began to experiment with Canvas communication tools, leading to innovation in their teaching.** For example, several participants tried to increase student-to-student collaboration, using Canvas groups, wiki pages, peer review tool, and encouraging students to use the chat and video conference features to assist out-of-class study groups.



**Figure 7. Students' satisfaction ratings and indication of overall impact of Canvas, according to faculty use of communication tools<sup>7</sup> (Winter 2012 only)**

<sup>7</sup> Both comparisons are statistically significant, according to a modified independent samples t-test,  $p < .01$ .

Numerical analysis suggests that students in the classes using more than one of Canvas' collaboration and communication tools were more satisfied with Canvas and were more likely to indicate that the tool enhanced their overall experience than students in classes using one or none of these tools (see Figure 7). It should be noted, however, that these differences may be due to overall teaching quality or instructors' general ability to use Canvas effectively.

Open-ended data also suggest that these features of Canvas may lead to innovation for faculty in the future. For example, several indicated that they were interested in *adding* a discussion forum to their class, which was not necessarily something they had done before. Similarly, respondents indicated a desire to try out audio or video feedback on assignments, a feature integrated within Canvas' assignment and grading system.

There was also one unique example of innovation with Canvas in fall quarter, in which one faculty member used the video conference tool to conduct "virtual office hours." The faculty member reported that the virtual environment (a) dramatically increased office hour attendance and (b) allowed students to ask questions they might not have been willing to ask in person. Student feedback suggests that the open office hours may have increased student engagement: 68% of Autumn 2011 survey respondents from this class agreed or strongly agreed with the statement "Because of Canvas, I feel more like an active participant in this class than I would have without it," compared to only 35% of respondents from other pilot classes that quarter.

## C. Challenges

Both faculty and students encountered challenges using Canvas in their classes. Faculty had difficulty learning how Canvas worked while students primarily found Canvas' design and navigation problematic.

### 1. Challenges faced by faculty

Twenty-eight instructors reported that they encountered some challenges using Canvas in their classes. The main challenge across course types was learning how to use the system; many instructors reported that it took time to figure out how different parts of Canvas worked. The lack of a "student view" of the site compounded this issue, as instructors could not fully understand the effect of their actions. Additionally, instructors across class types reported that they had difficulty with grading and quiz features, while instructors teaching online courses reported that the discussion forum and notifications were their biggest challenges.

*"Mastering the terminology, and the various capabilities of the different features. (E.g., what is a 'discussion' and how does it relate to an 'announcement' and to an 'assignment'?), getting clear on grading procedures*

*"I needed to know what students would see before I could evaluate if using a particular tool would work."*

*"One thing I want to be able to do: to have more grading options. Specifically, for individual journal responses (which I don't want to give a number grade or award points) I would like to have a check-plus, check, check-minus option rather than just complete/incomplete."*

*"The discussion board is terrible so I stuck to using a blog on Wordpress. This defeats the purpose of having everything all in one place and students have to subscribe to multiple tools."*

## 2. Challenges faced by students

Nearly half of student survey respondents reported that they encountered challenges using Canvas while approximately 20% of respondents explicitly reported that they had no challenges using Canvas. The majority of challenges cited related to Canvas' design and technical issues such as navigation, information architecture, and loading time. Students also reported that they were challenged by specific features of Canvas, including the discussion forum, assignments, notifications, audio/video conferences, and grading. However, the discussion forum was mentioned most frequently as a challenging feature.

*"It is difficult to navigate, as the links take you around a maze throughout the site."*

*"Assignments cannot be ordered by date assigned or date due, making them difficult to browse."*

*"The way that discussions are set up, it is very difficult to have a classwide discussion. One person posts, and another comments and, unless you make a real effort to see everything that has been said, it is hard to have a conversation."*

Corresponding with reported challenges, students most frequently suggested improvements to the design of Canvas (information architecture and navigation). Specific improvements suggested by students include a redesigned course homepage, improved navigation, information organized and displayed by dates or topics, a simplified interface, and consistent notifications.

*"Take more advantage of those top tabs with drop-downs, and make it easy to get from Module 3 Discussion to Module 4 Exercise Description, for example, in the fewest clicks, no guesswork, and no scrolling."*

*"The forums need to be improved. It seems like they are designed to mimic social networking, but social networking is a fire and forget method of communication. Thoughtful discussion requires the ability to easily find topics."*

*"It would have been nice to have notifications about ANY changes made to the website. If this was an option when I first set up my notifications, it got lost in the hustle and bustle of classes as the quarter progressed."*

## RECOMMENDATIONS

Recommendations that follow from the results of this study are included in a separate report. Decisions about when and how Canvas is adopted for the University of Washington will be based on the results of this study (focused on student and faculty user experience) as well as data gathered in relation to user support and infrastructure needs.