

# 2018 LMS Evaluation - Phase I Report

April 2018

## Presented to:

Dr. Kimberly Greer, Stanislaus State Provost and Vice President for Academic Affairs  
University Education Policy Committee (Dr. Mark Thompson, chair)

## Executive Summary

In late 2017, OIT and the Technology and Learning Subcommittee (TLS) were asked to implement a “Review of Learning Management Systems,” including evaluating a potential replacement for Blackboard when the current service contract expires in June 2019. This report presents the findings of Phase I of the evaluation. During the first quarter of 2018, TLS undertook the following actions regarding this part of the evaluation: distributing an open survey (receiving over 100 responses) gathering faculty views of Blackboard and two potential replacements (Canvas and Moodle); hosting product demonstrations of both Canvas and Moodle, including a follow-up survey on those demos; engaging in preliminary discussions about annual costs and service needs with Canvas and eThink Education (a Moodle hosting company); and organizing a brief “sandbox” evaluation of both products which was undertaken by nine self-selected faculty members. Having weighed all the relevant factors—the preference of the faculty cohort being most important—TLS recommends that Phase II—representing a final decision whether to remain with Blackboard—be conducted via a full pilot and comparison of Canvas against Blackboard in the fall 2018 semester. Secondary systems such as Moodle and Google Classroom will remain available while supporting them is discussed separately.

## LMS Environment Overview

### CSU System

Currently, LMS usage in the CSU system is mostly spread among three products: Canvas, Blackboard, and Moodle. One campus uses Desire2Learn’s Brightspace product. The following table summarizes LMS adoption in the CSU as of spring 2018.

**Table 1:** Current LMS adoption across the CSU system

Blackboard	Canvas	Desire2Learn	Moodle
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Bakersfield Chico Dominguez Hills East Bay Fresno Pomona San Bernardino San Diego <b>Stanislaus</b>	Channel Islands Humboldt Northridge Sacramento San José	Long Beach	Fullerton Los Angeles Monterey Bay (hosted by eThink Education) Cal Poly SLO San Francisco San Marcos Sonoma <b>Stanislaus</b>
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Beginning around 2007-2008, the CSU witnessed a surge in adoptions of Moodle after Blackboard discontinued Angel, a rival LMS it had acquired previously and which had been used by many CSU campuses, and for several years after that LMS usage within the CSU was almost evenly split between Blackboard and Moodle. Beginning c. 2015, campuses throughout the CSU began looking at Canvas. As of this writing, five campuses have switched to Canvas, two that were previous Moodle campuses (Humboldt and Northridge) and three that were previous Blackboard campuses (Channel Islands, Sacramento, and San José). Other campuses known to be evaluating Canvas are Los Angeles, Monterey Bay, and Sonoma (all of them Moodle campuses). Most universities switch to new LMS products with some regularity and have localized reasons for doing so. In the case of Humboldt's switch from Moodle to Canvas, the campus report cited the outdated functionality of their version of Moodle and the lack of internal traction to provide updates, as well as the desire to increase the reliability of the system by moving primary hosting off-campus and into Canvas's cloud architecture. In Northridge's case, the version of Moodle offered by their cloud hosting provider, Moodlerooms, did not offer enough new features compared to Canvas. It is also not unreasonable to speculate that desire for something "new" after years with a particular LMS also influences enthusiasm for the kind of changes now occurring in the CSU.

## Stan State

Stanislaus State has used Blackboard as its primary LMS since 2007. The current service contract runs through June 30, 2019. At Stan State, every class listed in the university's Schedule of Classes for a given semester has a Blackboard course shell automatically created for it. Additionally, instructors and students are automatically enrolled in those shells based on an integration with PeopleSoft. Access to Blackboard courses is tightly restricted to enrolled members and OIT system administrators, and no Blackboard course data is directly available outside of Blackboard (e.g., course grades or student progress reports) for use in other university systems. Aside from reasonable access for troubleshooting and support purposes, OIT does not monitor activity in Blackboard courses. OIT policy allows for the retention of four academic years worth of courses. Courses that reach that threshold are deleted by OIT with backups being the responsibility of the course instructor. OIT reports that approximately 65% of Blackboard course shells show at least minimal usage, especially during the beginning part of

each semester. Finally, custom Blackboard shells, called “Forums”, are also created as needed for use by university groups, committees, departments, etc.

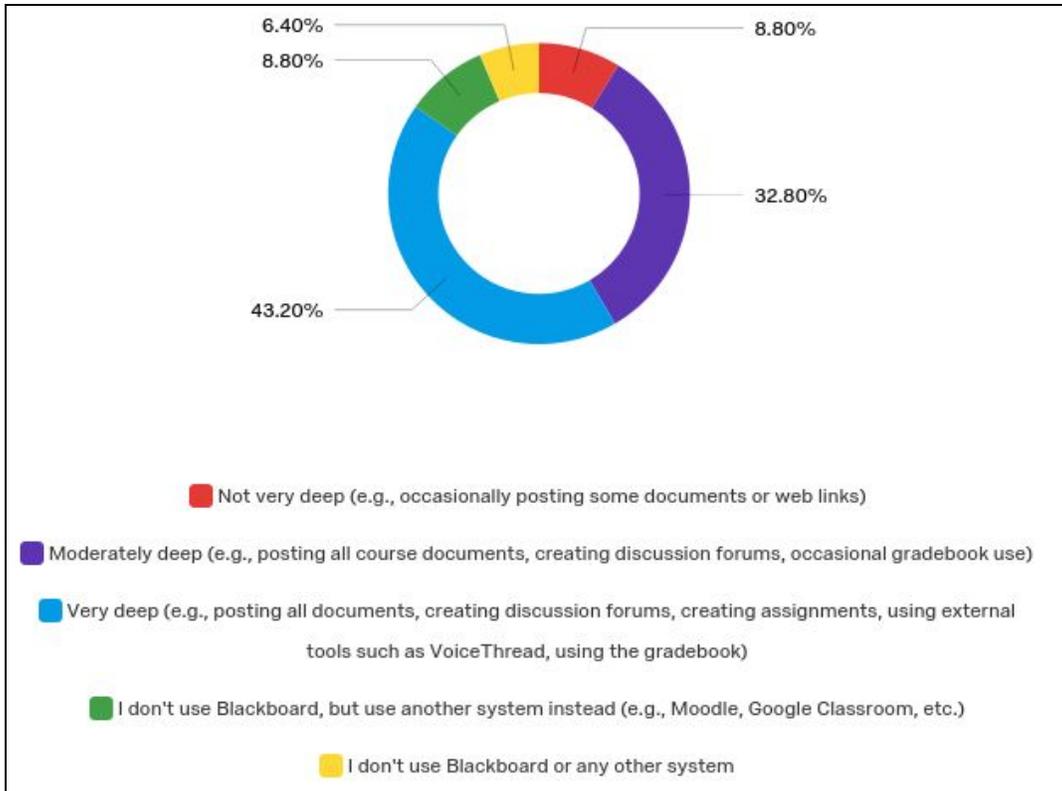
Since 2010, OIT has also made Moodle available to any instructor interested in using it. Indeed, some departments (centered on biology) had hosted a private web server with Moodle installed before this. However, around 2010-11 that server was shut down by OIT as part of a broader infrastructure consolidation effort, and users were given access to the centralized installation maintained by OIT. In that time, Moodle has been supported on an official basis in the form of staff time for maintenance, upgrades, as well as user support and training. Over its lifespan at Stan State, usage has slowly grown as instructors seek it out as an alternative to Blackboard, either due to displeasure with Blackboard or familiarity with Moodle from use at a previous institution, or a combination of those things. In the spring 2018 semester, 31 faculty members offered approximately 60 course sections (from 16 departments representing every college) that enrolled approximately 1350 students (some students were enrolled in more than one Moodle course). One complete program, the hybrid Masters in Social Work, uses Moodle exclusively for its courses. OIT also maintains regular involvement with the Moodle Common Interest Group that is run by the Chancellor’s Office and actively participates in the global Moodle Users Association (via a membership paid for by the Chancellor’s Office). Participation in that group recently enabled OIT staff to influence the development of Moodle through the successful submission and acceptance of a proposal to improve an important aspect of Moodle’s quiz results reporting features.

For the last four years, Stan State has also allowed limited access to Google Classroom. Classroom is not being considered as part of the current evaluation because, outside of its integration with Google’s suite of document applications, it is significantly underdeveloped as an LMS in terms of functionality, support, and adoption in the Higher Ed market.

## Summary of Current Evaluation and Timeline

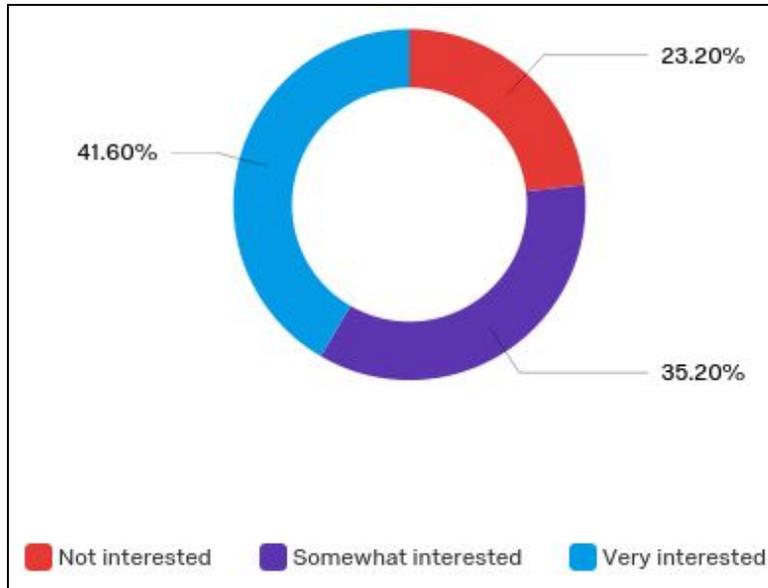
The evaluation is being undertaken in two phases. The first phase gathered broad reception to the proposal to evaluate Blackboard replacements, organized products demos, and made “sandboxes” available to faculty as part of a structured exploration of both Canvas and Moodle. The evaluation committee ran an initial faculty survey in early February 2018. In that survey, respondents were asked to rate how deeply they use Blackboard (or if they don’t use it at all) and how interested they were in the university evaluating potential replacements. 125 respondents anonymously answered the survey.

*Q1 - Overall, how would you describe the depth of your use of Blackboard as a component of your instruction?*



The highest percentage of respondents reported themselves to be very deep users of Blackboard, with moderately deep users following. The percentage of respondents who reported no usage of any LMS was only slightly below that of the respondents who reported being not very deep users of Blackboard.

*Q2 - Overall, how interested are you in having the university evaluate other Learning Management Systems (including Blackboard) on campus?*



As illustrated in the graphic above, just over 75% of respondents expressed at least some interest in the evaluation moving forward. Respondents were invited to freely elaborate on their interest level and 60 provided comments. Approximately 1/3 of the comments expressed support for Blackboard or at least concern that a switch would be more effort and cost (in terms of support and training needs) than was necessary. Reasons given for this concern included significant investment in learning and assembling Blackboard courses that would be “lost” in the process of switching to a new LMS. Most of the comments that expressed some interest in evaluating replacements expressed varying levels of dissatisfaction with Blackboard and at least an openness to another choice. Overall, respondents cited a feeling that Blackboard was “clunky” and “dated”, had too many problems with its tests, and didn’t offer modern tools. Approximately 12 explicitly called for switching to Moodle or Canvas (six and six). Notably, three other comments explicitly recommended *not* switching to Canvas. No such antipathy was expressed toward Moodle.

When responses to both questions are combined, it is fairly clear that deep users of Blackboard represented the highest number of respondents who were not interested in evaluating replacements. Also, those who reported no LMS usage at all reported a higher level of disinterest in evaluating replacements than those with not very deep Blackboard use or non-Blackboard use. On the other hand, the prospect of evaluating a replacement seems to have slightly piqued the interest of respondents who reported not very deep usage of Blackboard.

*Figure 1 - Combined interest in evaluation relative to depth of Blackboard use.*



Following the initial survey, product demonstrations for both Canvas and Moodle were arranged for faculty to attend and ask questions. Canvas was demonstrated by two Canvas sales/technical staff members. Moodle was demonstrated by Glenn Pillsbury, OIT's instructional designer and the system administrator for Stan State's Moodle installation. Attendance at the sessions was sparse, with approximately 2-4 faculty and staff members who were not already part of the evaluation committee present at each. One session from each product presentation was recorded and made available in a second Qualtrics survey consisting of a single question soliciting feedback on the products. The Canvas video was accessed approximately 80 times and the Moodle video was accessed approximately 20 times. This discrepancy is perhaps not surprising given Moodle's existing presence on campus whereas Canvas represented a more unfamiliar option.

The second survey captured eight usable responses. Like the first survey, responses in the second one mostly expressed a desire for change, with slightly more stating a preference for Moodle over Canvas (three vs. two). Pro-Moodle comments included:

I watched both presentations and I prefer Moodle. It's based on pedagogy and offers strong support for collaborative learning and social learning activities.

I have been using Moodle since last semester, and it's incredibly easy to learn/use for instructors and students alike. I also enjoy how customizable it is, and that I can choose which features are visible. I have found it particularly useful in teaching freshman, who take to it like pros. I don't know if we will have a single or multiple LMS platforms in the future, but no matter what, I hope one of them will be Moodle.

Moodle is much more user friendly, from a teacher perspective. I have enjoyed working with Moodle's streamline nature. Canvas is a bit more confusing and I am not a fan.

Pro-Canvas comments included the following:

Please choose Canvas! I work full-time as an online instructor and have taught using almost a dozen LMSs, including Canvas and moodle. Canvas's functionality, including embedded recorders, a powerful gradebook, and seamless messaging, places it in a level of its own.

I was unable to make it to the demonstration, but I have worked with canvas in the past and absolutely love it. It's very seamless and user friendly for students, particularly for interactivity such as discussion boards (it's wonderful for online classes, especially). As faculty, I particularly appreciate its grading system, as well - it's so much easier to grade on canvas than it is on blackboard, particularly with using turnitin, as it is built right into canvas and doesn't require a separate login and click!

Both Moodle and Canvas received one negative comment each, with the anti-Moodle comment expressed as part of a strong preference for remaining with Blackboard.

BLACKBOARD IS THE BEST. STAY AWAY FROM MOODLE

## Evaluation Timeline

This report summarizes the activity taking place in Phase I of the evaluation. Phase II of the evaluation is expected to begin in summer 2018 and run through the fall semester. Phase II will be used to operate a full pilot of Canvas against Blackboard, for the purpose of determining whether the university should make Canvas the new LMS or retain and renew the Blackboard contract. The methodology for making that determination has not been decided yet and is beyond the scope of this report.

### Evaluation Timeline: Phase I

February 2018

Gathered preliminary faculty input and interest via faculty survey of current LMS environment ([download results](#)) as well as in-person and recorded presentations/demos of Canvas and Moodle

## March-April 2018

Volunteer cohort of faculty evaluators take deep dive into both Moodle and Canvas

- March 5-20: Moodle sandbox courses created and evaluated
- March 20-April 9: Canvas sandbox courses created and evaluated
- Evaluators asked to work on the following tasks in both Canvas and Moodle:
  - Create a representative sample of assignments, activities, and student interactions
  - Set up gradebook to match syllabus requirements
  - Use student test accounts to populate the course with student activity
  - Grade and assess test student activity

## April-May 2018

- April 9: Deadline for evaluators to submit feedback and indicate personal recommendation for product to pilot in Fall 2018
- April 16: Draft report discussed by Technology and Learning Subcommittee
- April 20: Final report presented to UEPC and Provost. This report will contain a recommendation on which LMS product should be given a limited pilot with live PeopleSoft enrollments in the Fall 2018 semester.

## Evaluation Timeline: Phase II

### Summer 2018

- Initiate a formal pilot for Canvas and begin setting it up
- Recruit interested faculty to receive training on Canvas in preparation for Fall 2018 courses
- Negotiate with Blackboard for short-term extension from July 2019-December 2020

### Fall 2018

#### **Courses: Blackboard + Canvas pilot courses**

- Pilot faculty and students use Canvas for courses
- Pilot faculty and students surveyed about permanent replacement of Blackboard
- Information from stakeholders compiled into a recommendation to Provost for a final decision by President Junn.
- If the decision is to replace, information campaign communicating the changes begins, with a timeline (see next section)
- OIT offers training workshops and sandbox sites

## Replacement Timeline

Under the replacement timeline, courses will be offered in both Blackboard and Canvas for one calendar year (Winter-Fall semesters) to give instructors time to transition. Following that period,

courses will only be created in Canvas while Blackboard will be available as an archive for an additional calendar year. At the end of the fall 2020 semester, Blackboard will be deactivated completely.

Winter/Spring 2019

**Courses: Blackboard + Canvas**

All instructors encouraged to run their courses in the new system, but courses will be available in both the new system and in Blackboard. OIT continues to offer training workshops.

Summer 2019

**Courses: Blackboard + Canvas**

All instructors encouraged to run their courses in the new system, but courses will be available in both the new system and in Blackboard. OIT continues to offer training workshops.

Fall 2019

**Courses: Blackboard + Canvas** (final semester of live Blackboard courses)

All instructors encouraged to run their courses in Canvas, but courses will be available in both Canvas and in Blackboard. OIT continues to offer training workshops.

Winter/Spring 2020

**Courses: Canvas only + Blackboard archive**

- January: Blackboard retired from active course usage
- Blackboard courses available an archive for another year

Summer 2020

**Courses: Canvas only + Blackboard archive**

Fall 2020

**Courses: Canvas only + Blackboard archive**

- December 31: Blackboard archive turned off

Winter/Spring 2021

**Courses: Canvas only.** All Blackboard classes no longer available.

# Introduction to Canvas and Moodle Systems

## Canvas

Launched in 2011, Canvas has made significant inroads in the LMS market, especially in the United States, and is seeing growing interest in the CSU system, as was noted previously. Significantly, the entire California Community College system recently standardized the overwhelming majority of its campuses on Canvas. Canvas is developed and supported by Instructure, a publicly-traded U.S.-based company (NYSE:INST).

## Moodle

First released in 2002, Moodle is the most-used LMS in the world. It was created by Martin Dougiamas as part of his doctoral work in computer science and education at Curtin University in Australia and it is released as an open-source product. Dougiamas remains central to the continued development of Moodle through the Moodle, PTD company (a.k.a. Moodle HQ) based in Perth, Australia. As an open-source product, Moodle can be freely installed, used, and modified by anyone. Professional Moodle hosting and support services do exist and are offered by Certified Moodle Partners, such as Moodlerooms and eThink Education. A significant aspect of Moodle is the ability for third parties to create plugins and enhancements that can be installed, usually for free, into an instance of Moodle. Stan State's current Moodle instance contains over a dozen such plugins, including one paid plugin. While the plugin method does allow for flexible expansion of the core capabilities of Moodle, plugin development, bug fixes, and updates are entirely up to the third party creators, and it is possible (though not typical) for plugins to wither from lack of updates.

## Pedagogical Comparison of Canvas and Moodle

This section will provide overviews of the Canvas and Moodle systems, with an emphasis on their approach to course organization and management. Viewed from high above, Canvas and Moodle are familiar to anyone who has used Blackboard and both offer similar functionality in the broadest sense. Both have standard features such as quizzes, assignments, discussions, and mechanisms for uploading files, displaying other multimedia content, and linking to external URLs. Both systems can use rubrics in assessing student work as well as allowing instructors to download-annotate-upload student submissions during grading. Both allow for feedback on assignments via webcam video, a valuable approach that increases student engagement. Indeed, users can record webcam video directly into any text editor in both systems<sup>1</sup>. The approach to accessibility is broadly similar, as both feature appropriate warnings about

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<sup>1</sup> Via third-party plugin in Moodle

inaccessible content entered in the text editor, though both will need Ally installed for more active accessibility processes. Both systems have modern user interfaces featuring drag and drop capabilities for reorganizing content items on the course pages. Both systems allow for integration with university Student Information Systems (i.e., PeopleSoft) to control course creation and enrollment each semester, and both can take advantage of third-party tools such as i>clicker, Turnitin, VoiceThread, and Zoom, although the mechanisms for deploying each of those tools differ in the two systems. Some form of peer review is possible in both, and learning outcomes and various learning analytics can be created and applied to individual items of course content. Both systems feature a centralized “dashboard” for each user showing them relevant activity and upcoming deadlines from each of their classes. Instructors can send email to their students in both systems and make announcements that reside in the course, and both systems have an internal messaging component (not email).

In the rest of this section, the two systems are outlined according to three areas: Course Building Environment, Gradebook and Grading, and Communication and Interaction. These three areas were also used to structure the faculty feedback surveys that will be discussed later.

## Course Building Environment

### Canvas

Course design in Canvas operates from the premise that course materials and activities are managed in discrete “silos”. So, assignments (where students produce or upload content for assessment) are stored in the Assignments silo, discussions reside in the Discussions silo, quizzes reside in the Quizzes silo, files reside in the Files silo, pages reside in the Pages silo, etc. Canvas has a distinct Syllabus silo that is simply a text box for typing or pasting text, images, etc. Links to individual items in any silo can be made in other parts of a Canvas course using the Canvas text editor. The silos themselves are also available to all course members from a common menu in the course..

Furthermore, Canvas’s Module tool enables instructors to combine materials and activities from any of the silos into a sequential unit, with any number of units possible. As such, a student can “flow” through a module using Next and Previous buttons to move from one item in the module (e.g., a file, a discussion, a quiz) to the next. The Modules page in Canvas resembles a table of contents, with each item’s name listed sequentially. The Modules page cannot display summary or explanatory text about the items in a module or use illustrative images or video.

Canvas also requires instructors to select a course entry page, either a page from the Pages silo or the home page of a specific silo. Instructors control the visibility of items and must remember to “publish” an item before it is available to students.

Canvas’s text editor, the main interface for users to type and present content, features standard text formatting tools as well as built-in webcam video recording and YouTube integration. The text editor also features an accessibility checker that will highlight potential issues with content

that is being created in the editor. Materials from the content silos is displayed alongside the editor and items from the silos can easily be linked to by dragging the item name into the editor.

Canvas's interface for creating content aims to be intuitive by simplifying some parts of the creation process. For example, some settings remain hidden until needed in the course of creating an item. The process for creating a group assignment illustrates this approach: the settings for building groups and configuring the mechanics of their submission are only revealed once the instructor ticks a box for "This is a group assignment". Canvas's peer assignment works the same way: it is an extension of the default assignment content type whose configuration is only required to be shown once the instructor ticks a box for "Require peer reviews".

Third-party tools like Turnitin and VoiceThread can be created as part of the Assignment tool, using the "External Tool" submission type on the settings page. However, ungraded VoiceThread activities must be created in the Module tool.

## Moodle

Course design in Moodle operates from the premise of a single main course home page that contains links to all the course materials. Materials and activities are added to and grouped into sections that are themselves organized by weeks or by custom topics/titles. Moodle allows instructors to organize the visual layout of the sections as either a scrolling list (*a la* Canvas or Blackboard) or a simplified grid of clickable cells<sup>2</sup> that reduces the amount of scrolling. Each course section also has a summary area to display introductory or explanatory content about the materials and activities within the section (richly formatted with text, images, video, etc.). In general, Moodle allows for a more visual experience, as fully formatted text, images, and multimedia can be added to the sections while each of the grid cells (if that layout option has been selected by the instructor) can have a custom thumbnail "cover" image added to it.

Course materials in Moodle are divided into "activities" and "resources". Activities provide much of the focus of Moodle courses and there is a large range of activities designed to match or enable specific pedagogical and course design goals. For example, in Moodle, an assignment is merely one kind of activity which can be graded. Other activities (most of which can be graded if desired) include Attendance<sup>3</sup>, Forum, Glossary, Lesson, Quiz, Workshop, Blog<sup>4</sup>, Wiki, Questionnaire<sup>5</sup>/Survey, VoiceThread, and Zoom. The Glossary tool is especially adaptable to a variety of activities in which students are tasked with contributing some kind of content that is viewable by the rest of the class.

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<sup>2</sup> Third-party plugin

<sup>3</sup> Third-party plugin

<sup>4</sup> Third-party plugin

<sup>5</sup> Third-party plugin

In Moodle, resources are content items that are typically consumed passively and include Book, File, Image Gallery<sup>6</sup>, URL, and Page. Instructors add files, such as PDF or Word documents, to the main course page via drag-and-dropping the document(s) from the user's computer into the appropriate section. Other places throughout Moodle, such as the student submission page, also allow drag-and-drop of files. The Moodle text editor also accepts images via drag and drop.

Lastly, Moodle courses also can take advantage of "blocks", small bits of specialized functionality located on the right edge of the course page. Blocks can display, for example, a shortcut list of various activity types (akin to Canvas's silos), a list of currently online course members, customized bits of formatted text, the course calendar, or even a random entry from a glossary activity. Moodle's "Activities" block or the "This course" menu at the top of each course shows something akin to Canvas's silos, where various activity types and resources are presented together.

## Gradebook and Grading

### Canvas

Canvas's gradebook (accessed via the Grades link) is mostly a display of items and grades rather than a tool for managing those things. For example, creating a weighted series of categories (a common gradebook setup) is handled in the Assignments silo, not the gradebook itself. Assignment categories in Canvas can contain any mixture of activities, such as discussions and quizzes. As in other LMSes, the gradebook view in Canvas is akin to looking at an Excel spreadsheet and columns (representing graded items) can be reordered via drag-and-drop.

Grading of assignments and discussions in Canvas uses the SpeedGrader tool. This tool displays student work inline and allows for annotation and feedback by the instructor, and using a rubric if desired. For discussion posts, a student's posts are removed from the context of the discussion and gathered together to be assigned an overall grade for the lot. SpeedGrader shows the instructor a running average score for the assignment in question as well as the ratio of students graded/needing grading.

Canvas has the ability to record attendance on a session-by-session basis via single instance of the Roll Call tool in the gradebook. The Roll Call tool does not allow for the application of a scale of points to a session, such as might used to assess a student's participation level.

Peer review in Canvas involves enabling the "peer review" checkbox in the settings of a regular assignment. Students access the submission(s) they've been assigned via their Dashboard and leave comments on the submission, and, if it has been included in the assignment itself, score the submission via a rubric. Student review scores are not entered in the gradebook for the

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<sup>6</sup> Third-party plugin

submission and the peer review feature does not allow students to be given credit or scored for their part in the reviewing process.

## Moodle

While individual activities have grade settings in them, they are combined and categorized in the setup of the Gradebook. Creating a gradable activity on the course homepage automatically places it in the gradebook. In the gradebook setup page, the instructor creates new categories and sets the “aggregation” method for each (how the grades within the category will be calculated and how they will contribute to the course final grade). Also, grade items are moved around and placed into categories as needed. “Offline” items, which do not come from a built-in Moodle activity, can also be created in the setup page. Moodle’s gradebook also features the optional ability to use a powerful calculator for creating custom grade calculations using formula-style language.

Grading of assignments that use the Moodle Assignment tool is done using an inline grader to annotate, grade via rubric, and record written or audio/video feedback<sup>7</sup> (this last must first be enabled in the assignment settings). Grading of discussion forums is done in the forum itself via a “rating” of individual posts. Rating assigns a point value to the post, and in this way individual posts can receive different ratings depending on their purpose in a discussion (i.e., a student’s initial post can receive more posts than a reply to another student). In the settings of the forum activity, the instructor sets how all the ratings will determine the student’s final score for the forum (e.g., by averaging all ratings, using highest rating, using sum of all ratings, etc.). The Glossary activity also uses the ratings approach to determine a final score for the student.

The Attendance activity in Moodle can be deployed once in a course, with each class session contained in the activity, or it can be deployed multiple times in a course in separate instances to track attendance in separate course activities. In all cases, attendance by each student is marked according to an instructor-defined scale of points, and in this way, the Attendance activity can be used to assess a student’s level of participation in a given session.

In Moodle, peer review/peer assessment is handled by the Workshop activity. In its fullest deployment, the instructor sets up the parameters of the workshop, creates a review worksheet to be used by students in assessing/scoring their peers’ submissions. Once all submissions and peer reviews have been received, the system can assign students a primary grade for their own submission (based on the reviews of their peers) *and* a secondary grade for their review abilities (based on how they compared to other student reviews of the same submissions), all of which can be overridden by the instructor.

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<sup>7</sup> Third-party plugin

## Communication and Interaction

For the purposes of this report, “communication” is defined as the methods by which instructors can send messages to students (either as a group or individually). “Interaction” implies student-to-student engagement as well as student-instructor engagement that is visible to the entire class (i.e., not related to feedback on assessments). Both systems feature Announcements and internal messaging. Robust discussion forum tools area also present that can handle common needs, such as grading, anonymous posting, and group discussions. Both have a calendar for creating and displaying important course dates (and which can accept user-specific dates).

### Canvas

Canvas’s discussions tool operates on the model of a “single simple discussion” (Canvas calls this a “focussed” discussion) whereby the instructor initiates the discussion with an opening prompt that the students reply to rather than creating individual threads. If desired by the instructor, those replies can receive further replies from additional participants. With threaded replies enabled, each student’s initial reply therefore functions as a “thread” similar to what might be found in Blackboard. Students cannot change the subject line of any their replies.

Canvas’s Page tool can be configured to allow both instructors and students to edit a page’s content. While the page content is always visible to all students, Canvas does not offer a way for instructors to directly grade student contributions. In theory, the instructor could group together a set of pages in a Canvas module, and in this way they would resemble a wiki. “Collaborations” are another method for generating course-wide content using either a Google Doc or an Office 365 document that is shared and editable by all students (with potential for data loss due to student error). Collaborations can be assigned as gradable documents. So, an instructor could create a Google Form to collect specialized information from students and treat that information as a database but would need additional work to show students the compiled data in a useful way.

Canvas does not offer a blogging tool. Students can share files with the class by linking to them in discussions or in pages where editing is allowed.

In general, Canvas’s reliance on content silos does not preclude the creation of common (and recommended) pedagogical tasks. However, accomplishing those tasks often requires a “workaround” mentality in the sense that the Canvas environment needs to be manipulated to present something that is “good enough” but which might lack important components, such as the ability to grade individual student contributions to a page-based activity (e.g., as in a glossary-building activity).

## Moodle

Aside from discussion forums, blogs, and wikis, Moodle's primary built-in tools for generating student-student interaction are the Glossary and Database activities. Unlike Blackboard's Glossary, which is limited to a single glossary that can only be modified by the instructor, the Glossary activity in Moodle can be used any number of times in the course for any number of different purposes and can be used by students. As an activity, glossaries in Moodle can be graded. In the activity, students enter a term and a "definition" and all students can view all the entries. Some of the ways the Glossary is being used at Stan State include: writing and sharing student introductions, collaborative research and presentation of course terminology, and the creation of a coursewide directory of students' LinkedIn profiles. Further, instructors have used Moodle's "Random glossary entry" block to display random entries directly on the course page. In all these cases, students "see" each other participating in the course in interesting and creative ways, which enhances their own connection to the course. The Database tool is a similar, if significantly more customizable, activity for generating collaboration among students. Here, the instructor creates a table to accept a variety of data types (depending on the assignment) which is then completed by the students. Once again, the students see each other's work and can be graded on their contribution, all within Moodle.

Bloggging, used for ongoing reflection, can be initiated in Moodle using the free third-party OU Blog activity/plugin<sup>8</sup>. Students (individually or in groups) can be assigned to create a private blog (visible only to the instructor) or a public blog (visible to all course members). All blog activities can be graded.

Students can make files available to the course using the third-party Student Files plugin/activity<sup>9</sup>. This activity is not, by itself, a graded activity. However, it can be tied to a Moodle assignment such that submissions to that assignment (which can be graded) are also automatically made available to the class via the Student Files activity.

## Cost and Staffing Analyses

The current Blackboard contract, covering hosting and the license to use the software, is approximately \$94,000 per year. OIT employs one fulltime system administrator and assigns portions of three other staff members to manage the system, including custom programming, user training and support, scheduling of upgrades, etc. Moodle is assigned portions of two OIT staff members' time. While OIT does not pay a vendor to host the system or a license fee for Moodle (because it is open-source), OIT does pay \$400 per year for a plugin that adds the ability for (1) users to record audio and webcam video in the Moodle text editor and (2) instructors to record either audio or video feedback on assignments. Other add-ins to

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<sup>8</sup> Third-party plugin

<sup>9</sup> Third-party plugin

Blackboard and Moodle, such as Turnitin, VoiceThread, and Zoom, are paid separately from the LMS costs and are not under consideration in the evaluation.

Even though Moodle is currently hosted on-campus and managed entirely by OIT staff, in the event the university decides to switch to Moodle as the primary LMS, hosting would move offsite, into “the cloud” being run by eThink Education, a Moodle-focussed vendor. eThink would handle system upgrades and maintenance. Currently, CSU Monterey Bay contracts with eThink to host their Moodle instance and reports a positive experience with the arrangement.

The following table summarizes the approximate annual cost (not including one-time start-up costs) for LMS hosting and support. If a decision is made to leave Blackboard at the end of Phase II of the current evaluation, the university would still require Blackboard services through December 2020 in order to fully transition. It is unknown at this time how much a short-term contract running from June 2019-December 2020 would cost.

Additionally, Canvas offers a level of support (for an additional fee) to help smooth the transition to the Canvas environment. This would include Tier 1 support for instructors and students as well as course conversion of Blackboard courses to Canvas (with important caveats about compatibility). Typically, when this support package is purchased it is only needed for the first year. eThink partners with a third-party company to offer a similar Tier 1 support though without the course conversion component. Sonoma State is evaluating these options as part its LMS evaluation.

**Table 2: Approximate first-year hosting and support costs for candidate LMSes**

	<b>Blackboard</b>	<b>Canvas</b>	<b>Moodle (via eThink)</b>
Hosting	\$94,000	\$90,000	\$72,000
Setup Costs	N/A	\$21,000 (incl. 1000 course migrations and on-site trainings)	\$12,000 (incl. trainings, no course migrations)
1 year of Tier 1 Vendor Support (based on Sonoma State quotes)	N/A	\$48,000	\$72,000

It is not anticipated that additional staff will be required to manage a new LMS beyond the increased attention needed to provide initial training to the campus community.

# Faculty Evaluation Study Results

## Methodology & sample

Respondents to the initial survey indicated an interest in exploring a replacement for Blackboard, so a pilot of the best alternative to Blackboard is recommended for Fall 2018 so that faculty can gain direct experience with it and decide whether to switch. Canvas and Moodle were deemed the two most viable alternatives, but giving faculty both options in the pilot would lead to ambiguous results because faculty would not be able to directly speak to more than the one they piloted. Therefore, a preliminary study was undertaken in Spring 2018 to choose which system to pilot in Fall 2018. Giving participants a one-to-one comparison in the fall will make for unambiguous choice based on direct experience with Blackboard and the best alternative system.

A request to participate in this preliminary decision between Canvas and Moodle was sent out to those faculty who indicated such interest in the initial survey. The Provost was able to offer stipends of \$250 to participants. Ten full- and part-time faculty responded that they would engage with both Moodle and Canvas sandboxes and surveys, of which nine completed both surveys. They were tasked with engaging in both systems to the extent that they could compare their merits and drawbacks, including functionality, communication, and ease of use. They were asked to “play” in the sandboxes, i.e, set up enough assignments and activities so that they could use student test accounts to generate responses and “grade” them. A survey was then sent out asking participants quantitative and qualitative questions about the Moodle environment, course building, grading, and communication. A second survey was sent out about Canvas with similar questions, as well as questions asking participants which system they preferred.

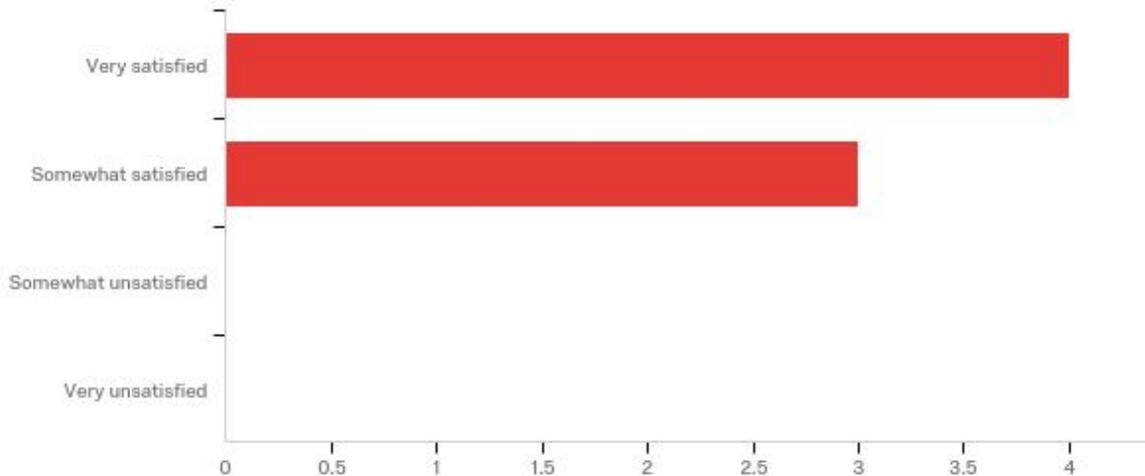
## Moodle survey results

A survey with eleven questions was given to the participants. Ten participants opened the survey, though seven responses was the highest number of responses per question. The instrument included Likert and free text questions about the features and functionality of the Moodle system ([download results](#)).

The first question asked about the Moodle approach to organizing the course environment, to which most responded with favorable comments about intuitive and easy navigation and display, though two commenters felt it was not easy to navigate.

The next questions asked about the tools available to set up course modules. Moodle offers an array of tools and resources to build curriculum, activities, and communication. Some of these are standard and highly used, while others are more specialized and not always needed.

*Q2: How satisfied were you with the tools available for building course content?*

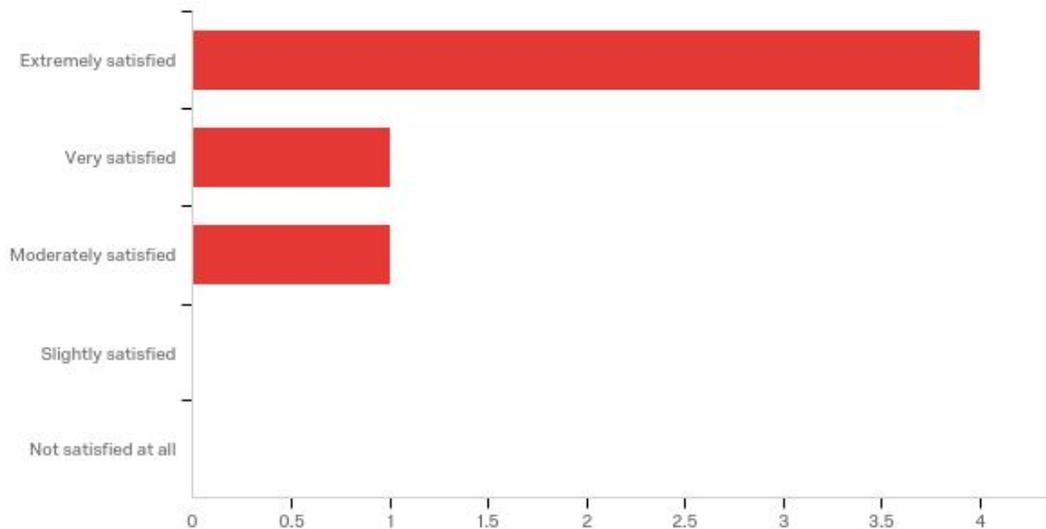


All respondents were either very or somewhat satisfied with the tools and resources available to build course content. Drilling down to whether specific features were intuitive and valuable, respondents felt that the tools they used were mostly valuable and intuitive, though a couple were valuable but unintuitive, and several were not used by participants. In additional comments, two respondents felt that this was easy to learn, one felt that training would help with the more complex tools, and a fourth commented that it wasn't much better than Blackboard except for visual elements.

The next set of questions asked about configuring the gradebook and grading. When asked what they liked/disliked about configuring the gradebook, three respondents felt it was easy, one expressed difficulties, and one felt the gradebook was as fully featured as competitors. When asked about actually grading, several mentioned difficulties, one admitting it might be a matter of training. Two liked sophisticated options such as audio or video recording of feedback.

Two questions then asked about communication capabilities, both faculty-student and student-student.

*Q9: How satisfied or dissatisfied were you with the instructor-student and student-student communication and interaction features in Moodle?*

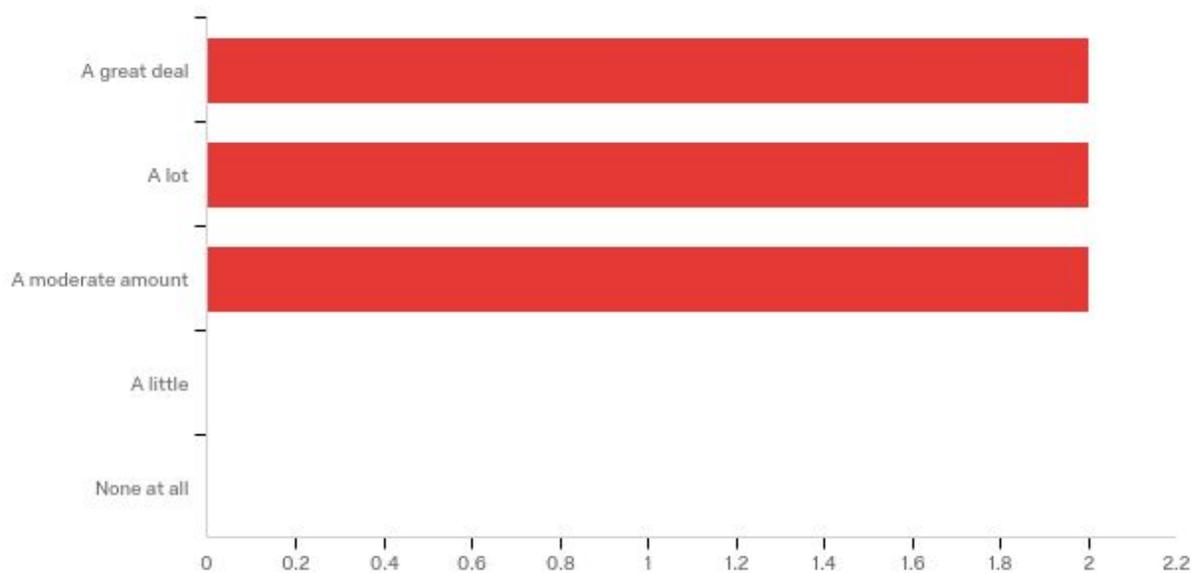


All participants were satisfied, with the majority being extremely satisfied. When asked for additional comments, all were positive, describing the many options:

The chat, blog, and zoom features are easy to set up and access for both student and instructor and greatly contribute to your ability to create and maintain an online presence as well as to facilitate student-centered learning.

The last two questions asked whether Moodle would improve participants' ability to offer courses and whether they had any final thoughts.

*Q11: Overall, how much do you agree with the following statement? "I can see how Moodle will help me improve the way I present course materials or create entire courses compared to the current LMS offerings on campus."*



All respondents to this question agreed that Moodle would improve the way they present their courses in an LMS, and some of the final comments revealed divergent conclusions:

After reviewing both systems I liked different features in Canvas and different features in Moodle. I think that whichever system the campus chooses, if there is good training resources available, we can use it to create a good learning environment.

Moodle allows me to tailor my online course to my approach to teaching and to be very interactive with students within the virtual world of online teaching. It creates connections and avenues of communication that are not possible in Blackboard.

a small improvement that may be more pain to transition to than it is worth

## Canvas survey results

The Canvas survey included a nearly identical set of questions to the Moodle survey, plus an additional set of questions asking participants to compare the two LMSs, for a total of 15 questions ([download results](#)).

The first question asked participants about the overall approach in the Canvas environment to organizing content into “silos” by type. Most liked this organizing principle, though one found it unintuitive.

I like the ability to build a module and didn't necessarily build my course with the 'silos.' But I like the ability to go in a modify the assignments, in the assignment page and not have to find it within a module

The silos caused an extra level of business and navigation. To me, it is logical to organize activities and content chronologically or topically in modules, but although that is a "secondary" way to organize in Canvas, the main way is by type of content. This preference was not helpful to me in most cases. Also, navigating back to the module was extra steps.

A second set of questions asked participants about the tools used to set up content, and to rate whether specific tools were intuitive and valuable, unintuitive but valuable, unintuitive and not valuable, or did not use. Responses indicated most tools were valuable and intuitive, though a few were valuable but unintuitive, and a few were not used. Additional comments were mostly favorable, some indicating their lack of training could be the cause of issues.

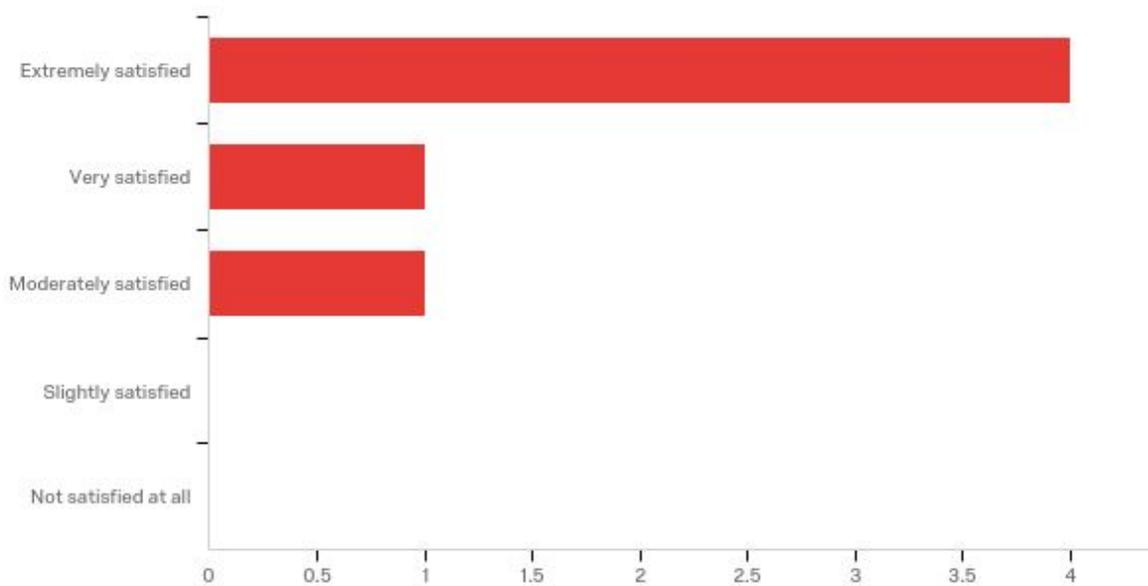
I am also very impressed by the apps and the ease of bringing the apps into your Canvas. I am looking at McGraw Hill's Connect platform and I see that it can be used within Canvas. Adding any of the tools is intuitive, easy, and quick, drastically cutting down on the amount of time spent creating an online class. I like the prerequisites feature that prevents access to certain content until earlier content is completed.

I LIKE THE ABILITY TO EMBED EXTERNAL VIDEOS RIGHT INTO THE COURSE AS OPPOSED TO HAVING STUDENTS HAVE TO LEAVE THE LMS TO VIEW THEM

The next set of questions asked about configuring the gradebook and grading. When asked what they liked/disliked about configuring the gradebook, respondents were pleased with the gradebook, including ease of grading. They mentioned ease of use and various features, such as using a rubric and peer review. However, one couldn't see how to set up grading some activities, and another wanted a way to add grades to the grade summary page. Both of these questions could be addressed via organized training sessions.

Two questions asked about communication capabilities, both faculty-student and student-student.

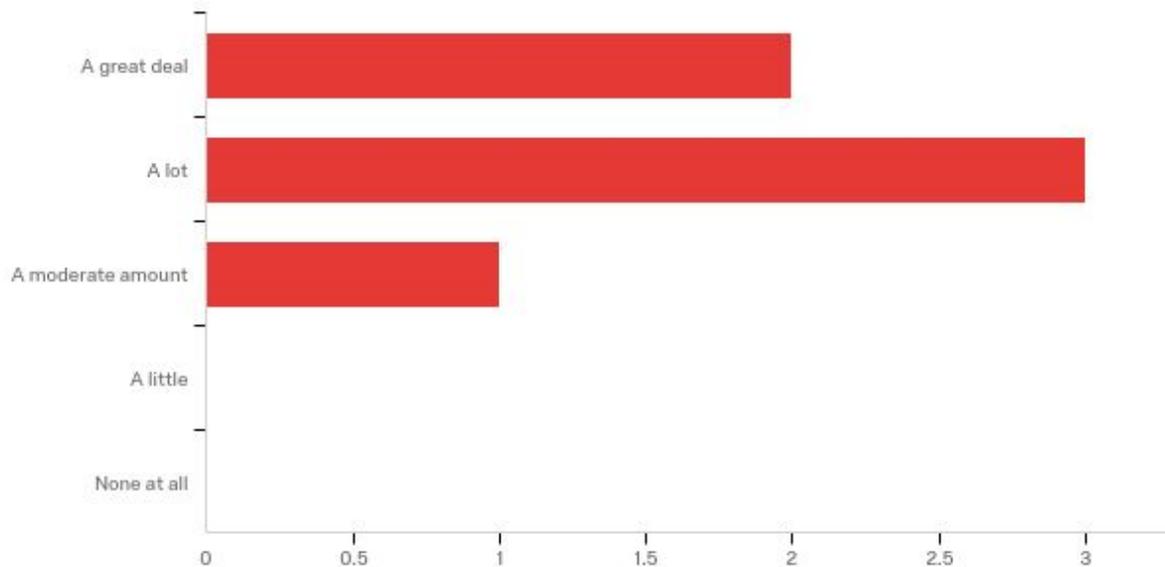
*Q8 - How satisfied or dissatisfied were you with the instructor-student and student-student communication and interaction features in Canvas?*



All respondents were satisfied with the means of communicating in Canvas, with the majority being extremely satisfied. Free text comments reinforced multiple useful options.

The next question asked participants whether Canvas would improve their ability to offer courses.

*Q10 - Overall, how much do you agree with the following statement? "I can see how Canvas will help me improve the way I present course materials or create entire courses compared to the current LMS offerings on campus."*

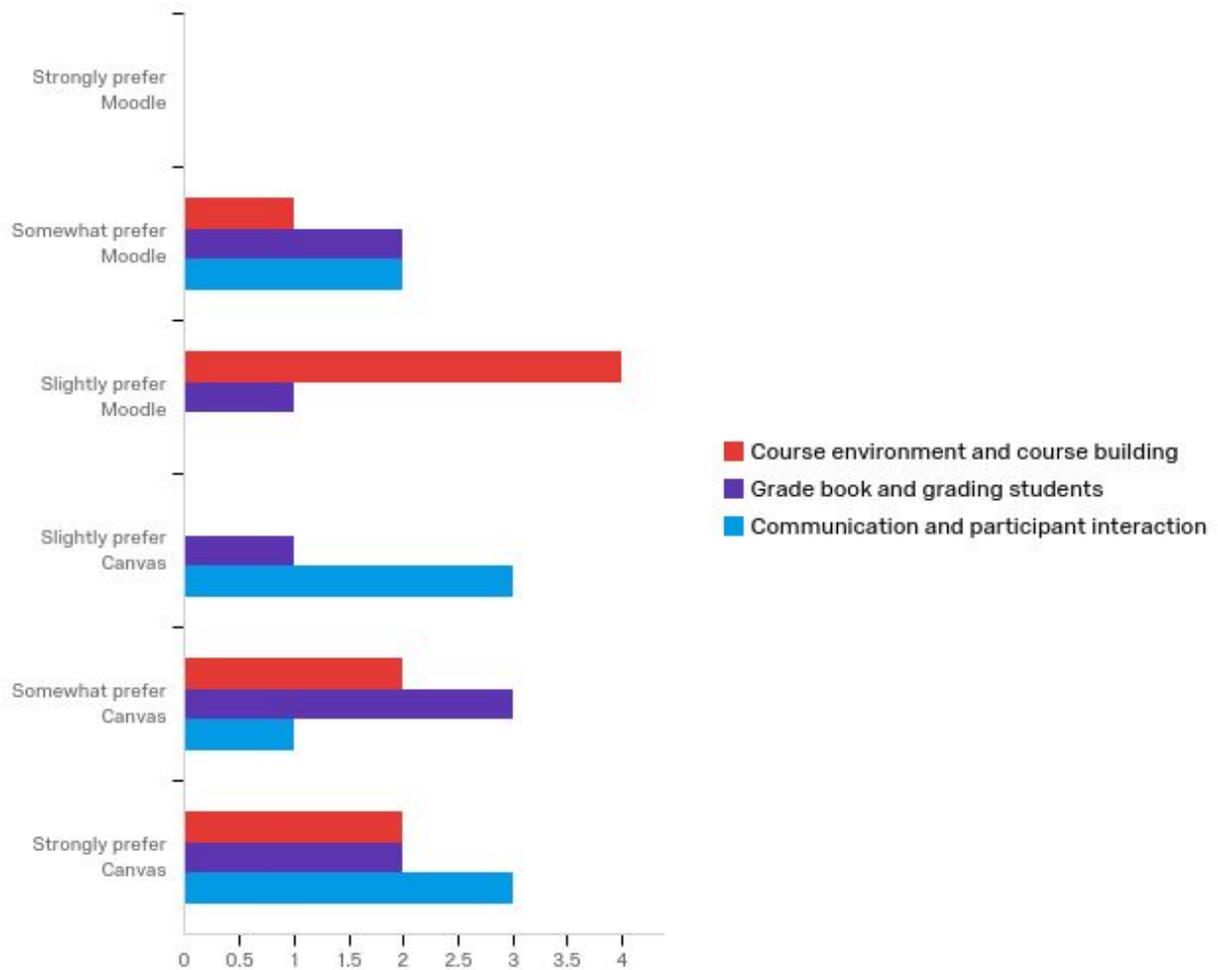


All respondents to this question agreed that Canvas would improve the way they present their courses in an LMS, and final comments were all positive:

At first I thought I wouldn't like Canvas because I couldn't just click and navigate. I had to watch several tutorials in order to figure out how to create assignments and build the silos but after that many of the other functions were easy to use. I can see where moving from Blackboard to Canvas would be an easy transition with a little bit of training, the tutorials and someone to answer quick questions.

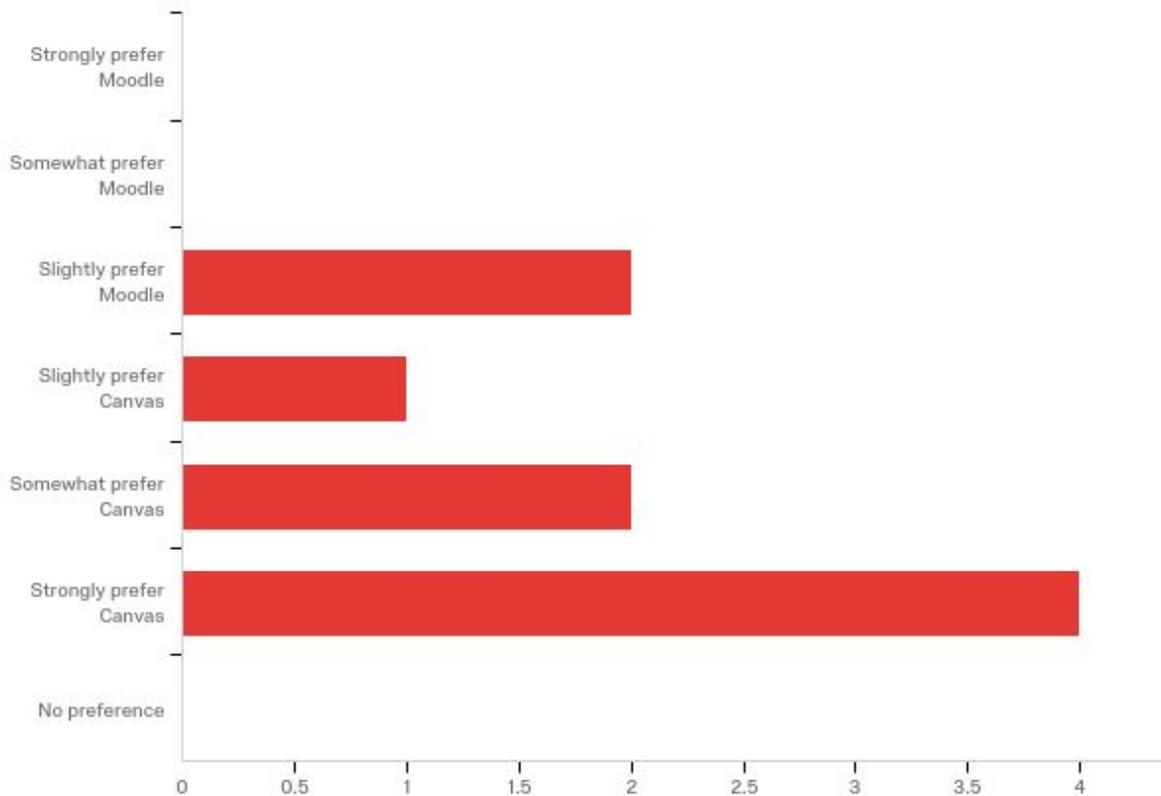
In the final section of the survey, four questions asked participants to compare Moodle and Canvas directly.

*Q13 - For each statement in the left column, indicate your relative preference for either Canvas or Moodle.*



For environment and course building, five of nine preferred Moodle. For grading, the majority preferred Canvas, six to four. For communication, a majority preferred Canvas, seven to two. No one “strongly” preferred Moodle for any of these categories, whereas at least two “strongly” preferred Canvas in all three categories.

*Q14 - Overall, which LMS would you prefer to see presented in a formal pilot in fall 2018, using real classes and students?*



Seven of nine preferred Canvas, with four strongly preferring. Comments revealed the differing experience and background of participants:

I slightly prefer Canvas because although Moodle appears to have a sharp more innovative "look", Canvas seems easier to build and create a course. Although I do think Moodle is much more student friendly. I have some experience with Canvas at another college campus and many students think Canvas is cumbersome and confusing. After using Canvas in the student mode I can see where some students would be confused by information presented but I think it depends on how the instructor organizes the course. Whichever LMS is chosen there needs to be much training available. After evaluating both Moodle and Canvas, I don't have an absolute preference.

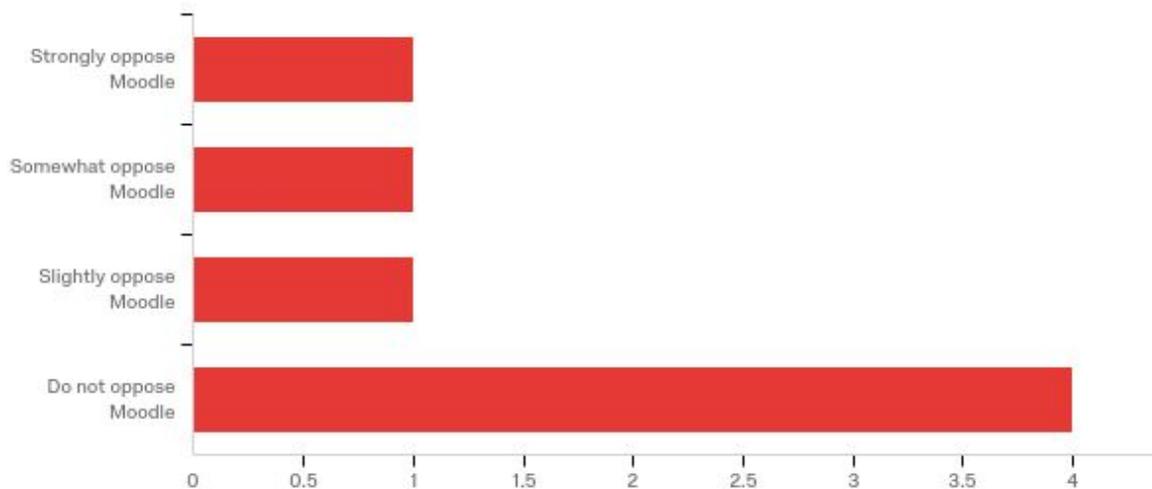
The one feature that elevates Canvas over Moodle for me is the ability to create a module and have students just hit the next button and navigate through the work of the week as opposed to returning to the week's home page and moving to the next activity from there. I also feel that Canvas's gradebook is overall more intuitive. I feel like I am always 'clicking around' in Moodle trying to do what I want to do.

Canvas is widely used in other colleges in California--I was at UC Davis when they transitioned, and am working at Columbia College, which also uses Canvas. It's relatively intuitive with a lot of great features. Moodle seems a bit clunky and with lots of customization options that for the classes I teach, I can't foresee a lot of use for. For instance, a wiki is a cool idea, but then how do I know who contributed what for grading? This was not clear in my sandbox, and not something I have a ton of time to figure out. Similar with trying to implement VoiceThread--If I can't figure it out

in a few minutes, I will just move on. Some Canvas tools like quizzes are clunky, but pretty handy when you get the hang of rubrics and all the options.

The last question was contextual and asked those who preferred Moodle whether they were opposed to Canvas as the pilot, and for those who preferred Canvas whether they were opposed to Moodle as the pilot. One Moodle advocate indicated no opposition to Canvas, while three Canvas advocates opposed Moodle to varying degrees.

*Q15 - You indicated that you prefer Canvas be piloted this fall. How strong is your opposition to the university piloting Moodle, if that is the recommendation of the evaluation?*



## Discussion and overall preference

Because of the small sample size, it is difficult to generalize about overall faculty preference for either Moodle or Canvas. However, given that either system is a viable competitor to Blackboard, the goal of this Phase I study was to determine whether Moodle or Canvas emerged as a better contender to challenge Blackboard in a fall pilot. If the timeline were not so compressed, participants could have had more exposure to best practices in each, in addition to simply attracting more faculty who were curious enough to participate in this first phase.

That said, this cohort of interested faculty engaged with both systems to the extent that they could comment upon how well the communication, grading, course-building, and overall layout of the two systems met their own needs. Though both systems had advocates, Canvas had stronger backing in the end.

## Recommendation from Pilot Phase I

Having weighed all the relevant factors—the preference of the faculty cohort being most important—TLS recommends that Phase II—representing a final decision whether to remain with

Blackboard—be conducted via a full pilot and comparison of Canvas against Blackboard in the fall 2018 semester.

Secondary systems such as Moodle and Google Classroom will remain available while supporting them is discussed separately.

Another factor to consider is the relative cost of the different LMSs to purchase and maintain. Also, statewide adoption of Canvas by the community colleges may make transitioning to it at Stan State easier for students.

One additional recommendation relates to training. A comment that surfaced repeatedly was that more training may resolve issues with building courses and exploring features. Regardless of the outcome of this evaluation, we may want to organize more activities and training so that faculty have more of a community of practice to engage with, and they feel more empowered to exploit these powerful tools.

Finally, the timeline for Phase II and transition from Blackboard (if that is decided) requires at least one short-term extension to the current Blackboard contract. Delaying the move to Phase II will incur even more cost for temporary extensions to this license. Therefore, TLS urges UEPC and the Provost to respond to this recommendation before the end of spring semester to allow OIT to move forward.

Submitted by the Technology & Learning Subcommittee of UEPC

April 19, 2018

Updated May 3, 2018