

LMS Evaluation and Selection Project Faculty Survey Report



University of Colorado
Boulder

Background

For the past five years, Desire2Learn (D2L) has served as our campus' learning management system (LMS), a web-based platform used by faculty to share content, administer assessments and communicate with students. The LMS is the foundational component of CU Boulder's academic technology ecosystem. Given its importance, Mary Kraus, Vice Provost and Associate Vice Chancellor for Undergraduate Education (VPUE), and Larry Levine, Associate Vice Chancellor and Chief Information Officer, commissioned a faculty- and student-driven initiative to evaluate the learning management system (LMS) market, and to determine whether an alternate LMS would better meet CU Boulder's teaching, learning, and administrative needs.

A number of administrative governance groups are actively participating in this effort, including the Boulder Faculty Assembly's Administration Services and Technology Committee (BFA-AST), the VPUE Advisory Committee, and the Technology Governance Group. This initiative has gathered, and will continue to gather, broad input from faculty, students, and staff in order to determine how effectively D2L meets the majority of our needs, and if it does not, which LMS should replace it. The LMS Evaluation and Selection Project Faculty and Student Surveys are the first steps in gathering input. This report focuses on the results of the Faculty Survey.

Purpose

The project team aimed to gather feedback about faculty and graduate teaching assistant experiences with D2L and other LMSs they may be using. To that end, members of the Faculty Working Group and IT Working Group developed the following areas:

- Reasons faculty members are not using an LMS
- The variety of LMSs used on our campus
- Satisfaction with tools available in the LMS
- Sources of satisfaction and dissatisfaction with the LMS

The survey also included an open ended question to allow respondents to share any information they would like the project team to consider in the LMS project.

For information about the principles that guided the development of this survey and research constructs, see Appendix A.

Recruitment and Response

All CU Boulder faculty and graduate students were invited to participate in the survey (n= 8,055) via an email sent from the Qualtrics survey application. Two email reminders were distributed as well. The Boulder Faculty Assembly (BFA AS&T), United Government of Graduate Students (UGGS), and members of the project steering committee, lead team, and working groups promoted the survey. It was also marketed in CU Boulder Today, the OIT Website, the project website (<http://www.colorado.edu/lms/>), and within D2L. One hundred and thirteen faculty or graduate students accessed the survey from a link provided via these marketing methods.

Response to the survey was significant. Of the invitations distributed, 1,599 participants (19.85%) started the survey, while 1,297 finished it (16%). The majority of participants, 1,184 (74%), took eight minutes to complete the survey.

72% of survey participants had a faculty role, 23% had a teaching assistant role, while 5% had a role that did not fall into either of these categories. These individuals would include those that are staff members, but also have a teaching responsibility. We received responses from across the campus; however, faculty and graduate teaching assistants from the College of Arts and Sciences overwhelmingly responded the most. Although represented in smaller amounts, other units housed outside of colleges and schools participated as well, including: Continuing Education (a part of the Division of Academic Affairs), the Office of International Education (housed in the administration category), and the Division of Student Affairs (the student Recreation Center). These units are using D2L for community courses for academic and non-academic purposes.

Responses by College, School, or Organization

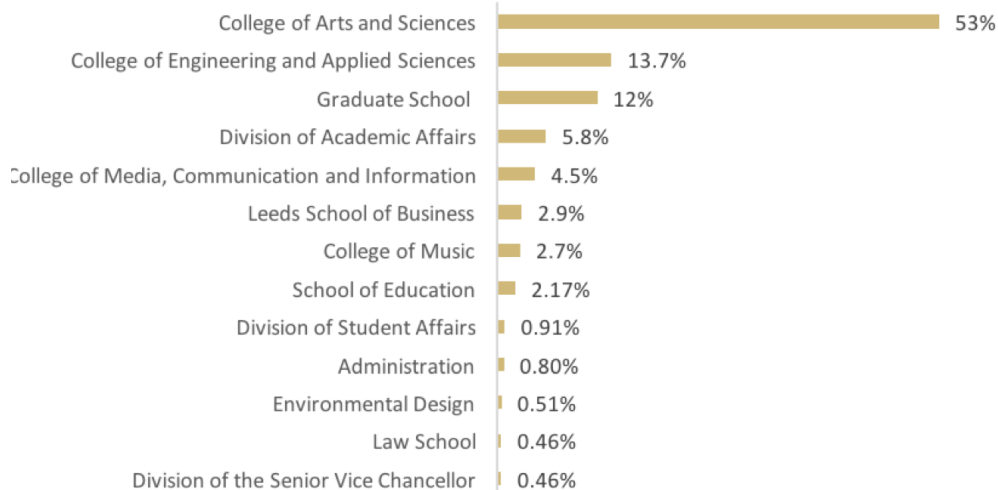


Figure 1. Percentage of responses by college, school, or organization. Note that college, school, and organization affiliations are not exclusive.



Analysis

The survey was analyzed using standard descriptive statistics and visualizations. We also mined the text of open-ended questions to discern common themes and patterns and verified these themes using Machine Text Analysis, which helped us to understand the underlying patterns between texts. It looked at the frequency of words that occurred across documents, the words that appeared in proximity to them, and what their connection might be to some hidden topic or theme. It presented those words in clusters that have a high probability of occurring next to one another.

The full, anonymized data set is available upon request.

Results

This section is organized by the survey questions, followed by aggregated responses. The first question served as a branching question. Those that selected “Yes” were directed to respond to questions 4 - 12. Those that selected “No” were directed to questions 2, 3, and 12.

Question 1

Have you used a learning management system (LMS) (e.g., Desire2Learn, Moodle, Canvas, etc.) within the last two academic years?

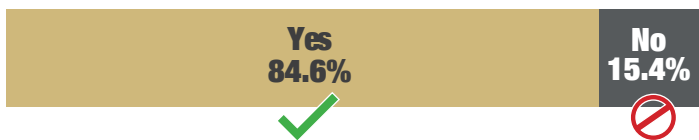


Figure 2. Percentage of respondents who have used an LMS within the last two academic years.

Question 2

Which LMS did you last use as your primary LMS?

Answer	% of Respondents
I have never used an LMS	65%
Blackboard	10%
Other	9.5%
Desire2Learn	8.2%
Home-grown LMS at another institution	1.6%
Moodle	1.2%
Canvas	.41%
Sakai, Google Classroom, or eCollege Learning Studio	0%
No response	3.7%

Figure 3. Last LMS used by those who have not used an LMS within the last two academic years.

Respondents who selected “Other” named a variety of tools, some traditional LMSs and other less traditional ones including: TWEN, a LMS provided by Westlaw used in the Law School; textbook publisher web tools Sapling Learning by Macmillan Learning and WebAssign by Cengage; G Suite (formerly known as Google Apps); and the LMS the CU Boulder campus used prior to D2L, WebCT.



Question 3

Why don't you use an LMS? Select all that apply.

Answer	Number of Responses
Other tools (e.g., my own website, eText) are more useful/easier to use.	71
I don't need to provide my course materials digitally.	39
There is no incentive for me to use an LMS.	35
I don't have the time to learn it.	35
I don't know what an LMS is.	35
It doesn't fit my teaching style.	30
It's difficult to use.	21
I haven't received adequate training.	20
It's not reliable.	11
It doesn't provide adequate features.	10
It's too hard to learn.	5
Students find it difficult to use.	5
It's not well integrated with other campus tools.	3
It's not accessible to students with disabilities.	3
Other	110
No response	37

Figure 4. Reasons an LMS isn't used by those that haven't used an LMS within the last two academic years.

While some of the responses to "Other" could be included in the options provided in question 3, others could not. 49 of the 110 participants who selected "Other" indicated that they were not currently teaching. In smaller numbers, some respondents indicated that an LMS was not appropriate for their discipline or class size. Others noted that they were not interested in using an LMS or that they planned on using D2L in future academic terms.

Question 4 ✓

Which LMS do you primarily use?

Answer	Percentage of Respondents
Desire2Learn	91%
Moodle	3.0%
Other	2.4%
Canvas	1.5%
Blackboard	1.2%
Google Classroom	.30%
Sakai	.30%
eCollege Learning Studio	.075%
No responses	.30%

Figure 5. Primary LMS used by respondents who have used an LMS within the last two academic years.

The campus-supported LMS, D2L, was the primary LMS used by respondents. D2L was followed by Moodle, which is the LMS used in Computer Science.

Survey participants used “Other” to list multiple tools they use concurrently. For example, one respondent indicated that they use “powerpoint and blackboard; also D2L.” Additionally, the TWEN, EdModo, Coursera, ChalkUp, and Talent LMSs were named. Although not considered LMSs by definition, G Suite, Piazza, Top Hat Monocle, WordPress, Hypothes.is, Slack, Chalk Up, and SimpleDifferent were listed as well, though in significantly smaller numbers.

Question 5 ✓

LMSs provide many tools. Which tool(s) do you regularly use? Select all that apply.

Survey respondents primarily use the LMS to share information with students, including course materials and grades. A significant number also use the LMS to collect student assignments. While 866 participants selected the Course Homepage tool, we didn’t collect any data related to how the Course Homepage is used; by default in D2L, it houses the News and Calendar tools, but it can also be customized to provide a wide range of information and features to students.

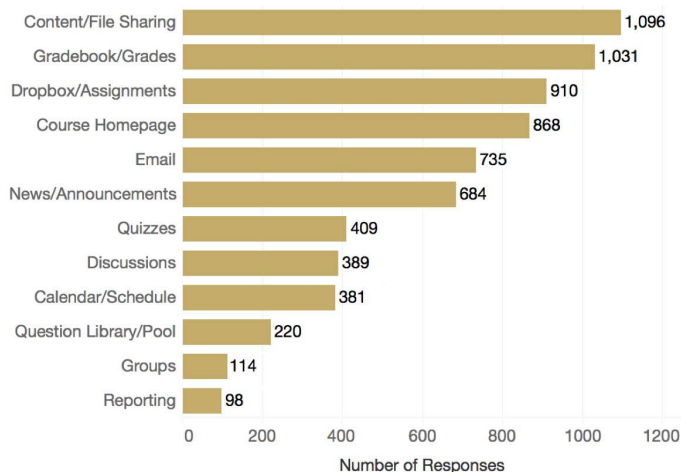


Figure 6. Tools regularly used within the LMS.

Question 6 ✓

Please use this space to list other tools you use that were not listed above.

407 survey participants responded to this question. Many used the space to provide additional details about the tools they selected in question five, or to share their satisfaction or dissatisfaction with other tools that they use.

- LMS Tools and Functions
 - Links to external websites
 - Embedded media (e.g., YouTube and TEDx)
 - Course Builder
 - Homepage widgets
 - Release Conditions
 - Classlist
 - Track student progress
 - Intelligent Agents
 - Impersonate Student
 - Chat Tool
 - Checklist Tool
 - Rubric Tool
 - Attendance Tool
 - Survey Tool
 - Email Tool
- Applications integrated in D2L
 - VoiceThread
 - Kaltura
 - Piazza
 - Turnitin
- Other tools
 - Lecture Capture using Mediasite and Echo360
 - Zoom
 - G Suite
 - Photo roster available in myCUInfo
 - Hypothes.is
 - Design Journals/Logs/Digital Diaries
 - Globus
 - Audience Response Systems
 - Portfolios

Question 7 ✓

LMSs provide many tools. Which tool(s) do you regularly use? Select all that apply.

Although 64% of survey participants indicated that they were satisfied with the Gradebook/Grades Tools, a large proportion indicated that they are dissatisfied. A similar pattern was present with survey participants that use the Quiz Tool, the associated Question Library/Pool, and the Discussions Tool.

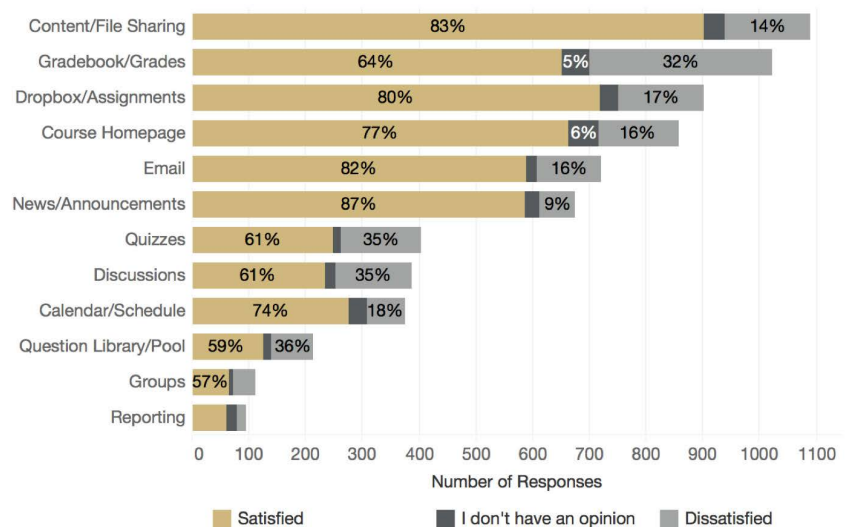


Figure 7. Satisfaction with tools used.

Question 8

For each tool, please choose the reason(s) why you are satisfied with that tool by checking the boxes in the appropriate rows. Select multiple reasons per tool where applicable.

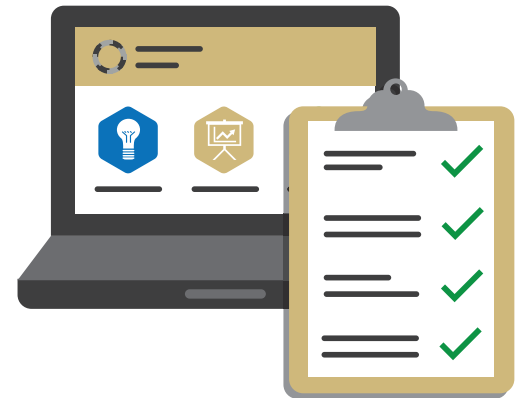
Note that respondents only saw tools listed for this question if they said they were satisfied with those tools in question 7.

	Content Sharing	Dropbox / Assignments	Gradebook	Homepage	News	Email	Calendar	Quizzes	Discussions	Question Library	Groups	Reporting
It meets my needs.	689	541	495	498	451	427	199	189	148	99	44	40
It has been reliable.	461	325	307	285	254	242	98	104	85	61	14	21
It helps me communicate with students.	320	197	220	261	350	367	114	29	102	12	15	9
It helps me coordinate my course.	396	238	209	238	191	166	113	73	54	40	25	13
It was easy to learn.	363	246	183	216	198	203	85	67	68	35	11	15
It's well integrated with tools within the LMS.	133	211	178	93	58	61	59	84	36	37	14	7
Students like it.	147	108	122	80	89	58	39	34	31	8	4	5
I haven't found another tool that meets my needs.	80	80	74	50	46	44	21	33	36	21	7	8
I received adequate training.	72	42	67	52	35	34	18	28	16	17	2	4
It's well integrated with tools outside of the LMS.	19	27	54	14	11	16	7	8	2	2	2	3

Cells show number of responses. Darker shading corresponds with more responses.

Figure 8. Reasons for satisfaction with the tools in the LMS.

Across all of the tools, respondents' top source of satisfaction was that it met their needs. This was the case for the Content/File Sharing Tool, Dropbox/Assignments Tool, Course Homepage, and Gradebook/Grades Tool. The second overall source of satisfaction was that the tools helped users communicate with students. This was particularly the case for the Email and News Tool, likely due to their functions.



Question 9 ✓

For each tool, please choose the reason(s) why you are dissatisfied with that tool by checking the boxes in the appropriate rows. Select multiple reasons per tool where applicable.

Note that respondents only saw tools listed for this question if they said they were dissatisfied with those tools in question 7.

	Gradebook	Content Sharing	Dropbox / Assignments	Quizzes	Discussions	Homepage	Email	Question Library	Calendar	News	Groups	Reporting
It's hard to use.	247	94	83	108	72	62	50	53	37	15	24	10
It doesn't provide adequate features.	150	63	71	81	95	79	59	36	34	32	26	10
Students find it difficult to use.	55	48	64	37	59	30	15	10	16	13	10	1
It's not well integrated with other tools in the LMS.	81	41	46	25	36	29	20	13	22	11	6	2
Other tools are more useful/easier to use.	62	51	29	19	31	39	38	11	19	19	4	5
It's not reliable.	61	29	36	29	11	10	27	15	7	11	4	3
It's not well integrated with tools outside of the LMS.	85	19	22	12	11	9	9	7	13	8	3	3
I haven't received adequate training.	42	15	7	15	6	5	4	6	3	6	7	0
It's not accessible to students with disabilities.	3	5	2	5	2	3	3	4	0	3	1	0

Cells show number of responses. Darker shading corresponds with more responses.

Figure 9. Reasons for dissatisfaction with the tools in the LMS.

Although we received fewer responses to this question, survey participants indicated that the Gradebook/Grades Tool is not easy to use, that it doesn't provide adequate features, and that it is not well integrated with tools outside of the LMS. This last point may be related to an interest in having an integration between the Desire2Learn Gradebook and the Registrar's Web Grading Tool. The Quiz Tool was also flagged as being difficult to use.

Question 10

Please use this space to describe why you are satisfied or dissatisfied with the tools that you use that were not listed in previous questions.

LMS Tools and Functions

Tool	Source of Satisfaction
Release Conditions	Functionality
Track student progress	Functionality
Copy course components	Functionality
Tools that help prevent/discourage cheating	Functionality SafeAssign Proctoring Software
Intelligent Agents	Functionality
Checklist Tool	Functionality

Applications integrated in D2L

Tool	Source of Satisfaction
VoiceThread	Existence of integration
Kaltura	Supports flipped classrooms
Piazza	Better interface than Moodle's discussion tool

Other tools

Tool	Source of Satisfaction
iClicker	Documentation provided on OIT website
Coursera	Look and feel Performance
Slack	Intuitive
G Suite	Functionality use to "complement" the LMS Used to create ePortfolios Intuitive
Ning	Functionality used to "complement" the LMS
Weebly	Functionality

Other LMSs

Tool	Source of Satisfaction
Canvas	Functionality of Dropbox/ Assignment submission tool Ease of use
Blackboard	Ease of use
Moodle	Ease of use Grading system
Sakai	Ease of use

Figure 10. Reasons for satisfaction with tools not listed in question eight.

There were two prominent sources of satisfaction for tools listed in the table above: the functionality the tools provide, as well as their ease-of-use.

Question 10 continued

LMS Tools and Functions

Tool	Sources of Dissatisfaction
Classlist	Concern that Classlist availability on the navbar violates privacy guidelines
Track student progress	Limited functionality
Copy course components	Not easy to use
Tools that help/discourage cheating	Turnitin <ul style="list-style-type: none"> Document markup functionality Grammar checker It is too easy to cheat on D2L exams and quizzes
Impersonate Student	Limited functionality
Section Management	Managing sections in the gradebook tool and email tool
Checklist Tool	Inability to gather data from checklist tool
Attendance Tool	Not easy to use Design Not integrated with Grades tool
Survey Tool	Not integrated with Grades tool
Rubric Tool	Not easy to use

Other LMSs

Tool	Sources of Dissatisfaction
Moodle	Not useful

Other tools

Tool	Sources of Dissatisfaction
Integration between LMS and Registrar's Web Grading Interface	Lack of integration
Course request process	Dissatisfaction with the process of having to request a course
iClicker	Not easy to use Cost to students
eTexts	Difficult to read Sidebars take up too much of the page Text cannot be highlighted or copied for notes Price is outrageous and not representative of the book quality Poorly written Inaccurate information in the text
G Suite	Lack of D2L/G Suite integration
ePortfolios	Lack of ePortfolio tool

Applications integrated in D2L

Tool	Sources of Dissatisfaction
Kaltura	Not intuitive or simple Not well integrated with D2L Not easy to use in class Performance of video streaming when viewed outside of class

Figure 10. Reasons for satisfaction with tools not listed in question eight.

Sources of dissatisfaction for the tools listed in the table above varied widely; however, lack of functionality surfaced as a pattern within specific tools (e.g., Track Student Progress and Student Impersonate) and across tools (e.g., lack of a D2L/G Suite integration and lack of an ePortfolio Tool).

Question 11

For each tool, please choose the reason(s) why you do not use them by checking the boxes in the appropriate rows. Select multiple reasons per tool where applicable.

	Groups	Reporting	Question Library	Calendar	Discussions	Quizzes	News	Email	Homepage	Dropbox / Assignments	Gradebook	Content Sharing
I'm not familiar with this tool.	488	550	370	317	217	273	165	95	119	93	67	77
It doesn't fit my teaching style.	255	235	301	178	284	285	109	67	73	111	49	24
Other tools are more useful/easier to use.	87	77	83	166	88	74	91	192	60	43	30	35
I don't have the time to learn it.	122	114	126	139	107	103	49	23	39	36	32	9
I haven't received adequate training.	86	82	85	69	76	71	37	22	22	29	27	15
It doesn't provide adequate features.	25	29	33	46	49	23	19	33	14	10	13	8
It's hard to use.	36	25	33	45	44	22	10	23	13	12	26	11
I used to, but stopped.	30	13	16	33	58	17	21	17	10	10	12	1
It's too hard to learn.	24	20	22	23	23	19	5	4	5	5	21	4
Students find it difficult to use.	19	7	7	11	48	12	6	8	8	8	3	2
It's not reliable.	14	12	8	10	16	11	7	25	5	7	10	3
It's not well integrated with other tools in the LMS.	14	15	13	18	12	9	9	12	5	6	10	1
It's not well integrated with tools outside of the LMS.	8	5	8	12	10	6	1	9	5	3	5	2
It's not accessible to students with disabilities.	2	2	3	3	4	3	2	0	3	0	2	1

Cells show number of responses. Darker shading corresponds with more responses.

Figure 12. Reasons tools aren't used.

Survey participants indicated that they don't use the Reporting Tool, Groups Tool, Question Library/Pool, Calendar or Quiz Tool because they aren't familiar with these tools. Respondents also noted that the Quiz, Question Library/Pool, and Discussion tools do not fit their teaching styles.



Question 12 ✓

When thinking about the upcoming review of LMSs and the possibility of moving to another LMS, is there anything you think should be considered?

798 survey participants provided a response to question 12. Responses to this open-ended question varied. Some described their overall experiences using D2L and other LMSs, as well as sources of satisfaction and dissatisfaction. Of all the alternate LMSs mentioned, Canvas was discussed the most positively.

It is important to note that we did not directly ask survey participants whether CU Boulder should stay with D2L or move to a different LMS:

- 20% indicated that we should stay, noting that D2L is a known entity.

"I would prefer not to have to learn another LMS when I believe D2L already adequately meets students' and my needs."

"I dislike D2L, but have learned to use it. Thus I'd rather stick with it than try something unknown and probably not much better."

- 10% indicated that we should move to a different LMS.

"I don't know a single faculty member who likes D2L. I hope the negative reviews prompt the administration to drop D2L and switch to a more intuitive, easy-to-use platform."

- 18% commented on the various costs of switching to a different LMS.

"I think D2L is adequate for my needs. I think another LMS will be adequate for my needs, but involve a learning curve, expense to the University, and logistical difficulty. I don't see why we would switch unless there is a real problem with D2L that I'm not aware of. At some point we are simply rearranging deck chairs by changing management systems every 5 years. They all have strengths and weaknesses."

Results

Findings from this survey informed the request for proposals (RFP), which invited LMS vendors to demonstrate how their LMS meets CU Boulder needs. Six criteria included in the RFP have been used in similar evaluations in the past: Software and Technical, Timeline and Implementation, Support and Training, Security and Compliance, Company Qualifications, and Cost. Due to the overwhelming feedback we gathered on this survey, User Experience Design was also added to the evaluation criteria and has been given the highest weight.

Survey results also influenced the questions we asked vendors to respond to in the RFP. The table below highlights some examples.

Purpose of Question	Question to Vendors in RFP
To understand how vendors ensure that their LMS is easy to use	Please describe your approach to the LMS's student, faculty, and administrator interface design.
To address requests for integrations such as a LMS/G Suite integration and LMS/Registrar Web Grading Tool integration	<p>Please indicate which of the following standards you support. For each that you do support, provide the version(s) of the standard that you support (e.g., SCORM 1.1 and 1.2): SCORM; xAPI/ TinCan; IMS Global Standards: LIS, LTI, OneRoster, and Common Cartridge. If you support additional standards, please list these as well.</p> <p>How are APIs and/or Web Services implemented? What functions and processes in your LMS can be controlled or extended through interfaces to external programs and applications?</p>
To address concerns related to the ease of use of the Quiz Tool	<p>Describe how your LMS ensures an exceptional experience for instructors creating, importing, validating, and editing quizzes?</p> <p>What features and design principles in the quiz tool provide the best experience for instructors grading and regrading quizzes?</p>

Based on the responses to questions 6, 7, 9, 10, and 12, project working groups will pay particular attention to the Gradebook, Quiz, and Discussion tools during the vendor proposal review and deep evaluation of test environments. Regardless of the result of the LMS selection process, the LMS Evaluation Initiative will recommend that an integration between the Registrar's Web Grading interface and LMS Gradebook be developed.

As noted on page 17, 18% of 798 participants expressed some concern with migrating to a different LMS. Because of this response, the project team needs to consider the relative advantage of adopting a new LMS versus the disadvantages with migrating. Further, should the decision be made to move, additional data needs to be gathered to better understand faculty migration concerns and establish appropriate migration support resources.



Next Steps

In order to be considered, LMS vendors must submit their proposals by Monday, March 20. The project team will then review candidate submissions and identify those vendors whose systems will be further evaluated. In April, we will begin a detailed evaluation of those systems based on several hundred requirements that address student, faculty, and staff needs. The campus community will have the opportunity to attend vendor presentations and have hands-on experiences with LMS candidate environments. We will also conduct user experience studies to assess the ease of use of these environments. The project aims to select the best LMS to meet CU Boulder needs before the end of the spring 2017 semester.

Acknowledgements

We would like to thank the following individuals for their assistance with developing, testing, and distributing the faculty survey and generating this report: Laura Hamrick, Sandy Kim, Amanda McAndrew, Megan Meyers, Joseph Michalsky, Robert Schwander, Shane Schwikert, Greg Stauffer, Mike Turner, and members of the LMS Evaluation and Selection Project Faculty Working Group, IT Working Group, and Lead Team.

Appendix A

Purpose

As a part of the LMS Evaluation and Selection Project, the Faculty Working Group will distribute a survey to gather feedback about faculty and graduate teaching assistant experiences with Desire2Learn (D2L) and any other learning management systems (LMS) they may be using. The survey will identify what users like about the primary LMS they use, as well as areas for improvement. In order to identify gaps in the academic technology ecosystem, the survey will also sample those that have stopped using an LMS and those who do not use an LMS at all.

Guiding Principles

Initial Requirements Gathering: Survey questions will gather general information about faculty and graduate teaching assistant experiences with LMSs. The Faculty Working Group will use other methods to gather more detailed feedback.

Reduce Survey Fatigue: We want to be sensitive to the time we are asking constituents to take to provide us with feedback.

Research Constructs

Construct	Reason	Method of Measuring the Construct
Reasons faculty are not using an LMS	To determine why faculty do not use an LMS	Respondents are asked whether they use an LMS or not. Those that say no are asked to select from possible reasons or provide their own.
LMSs used by faculty	To identify the LMSs used on our campus	Respondents are asked to identify which LMS they primarily use.
Satisfaction with tools available in the LMS	To inform requirements to evaluate in LMS candidates	Respondents are asked to rate their satisfaction with the tools they use on a three-point scale ranging from dissatisfied to satisfied.
Sources of satisfaction and dissatisfaction with the LMS	To inform requirements to evaluate in LMS candidates	Respondents are asked to select from possible sources of satisfaction and dissatisfaction, or provide their own.
Additional respondent feedback on the LMS	To be open to additional feedback that respondents might provide us	Respondents are asked whether there is anything that they would like considered in the LMS review.



Appendix B

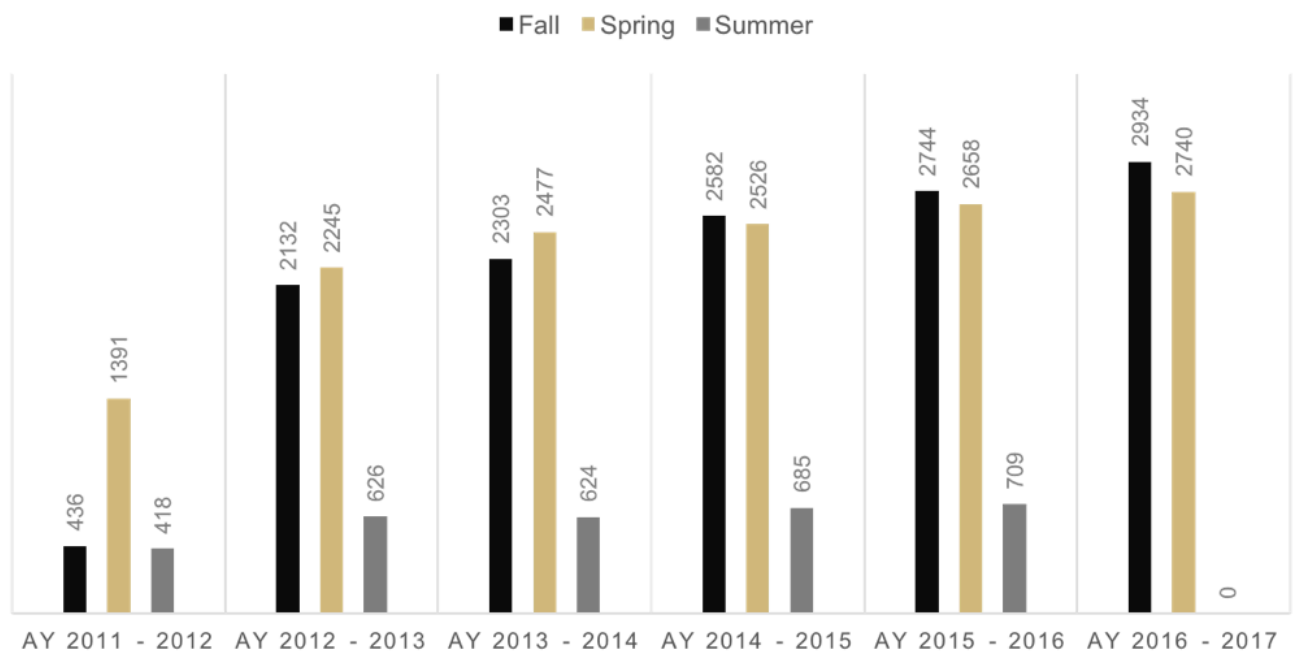


Figure 13. D2L course counts as of March 3, 2017.

There has been continued growth in the use of D2L since its adoption in 2011. In the fall 2016 term: 2,934 courses were in D2L, 2,080 instructors with one course, and 3,749 instructors with multiple courses. So far, for the spring 2017 term, there are 2,740 courses in D2L. 2,052 instructors are in at least one course and 3,415 instructors are in multiple courses.