

Desire2Learn: Faculty and student perception of learning environment tools

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PERCEPTION OF D2L TOOLS

Abstract

Increasingly, universities have been using Learning Management Systems without assessing the faculty perspective of the tools, which they provide. When the faculty's perception is understood, implementing professional development can provide and be more conducive to student and faculty engagement in an online or blended course. This learning will also align more closely to the needs of the student population. This research provides a quantitative and comparative analysis of Desire2Learn's preferences and perspective of tools used by students and faculty of East Stroudsburg University of Pennsylvania. Surveys were electronically distributed to the faculty and student populations to determine their perception of Desire2Learn's tools and to assess the differences in their preferences. The results of these surveys will be analyzed to determine the faculty and student perceptions of these tools and trends, which will be used to assess the needs and further professional development for students and faculty.

Keywords: Learning Management System, Desire2Learn, tools, and learning environment

PERCEPTION OF D2L TOOLS

Desire2Learn: Faculty and student perception of learning environment tools

A Learning Management System is a vehicle towards learning and does not benefit students or faculty if it is not useful to either stakeholder. For such a system to be useful, the user must be viewed as an integral part of the system. Due to the trend of blended learning, professional development for both faculty and students is required in order to reach more students with a variety of learning styles and preferences.

Research Questions and Hypothesis'

Question 1: What are the preferred tools in the D2L learning environment?

Question 2: What are the tools that students and faculty value?

Question 3: How do faculty and student values of the learning environment tools differ?

Hypothesis 1: Learning environment tools are used differently by faculty and students.

Hypothesis 2: Students will gravitate towards communication tools

Hypothesis 3: Faculty will gravitate towards administrative tools

Method

In this trend study the survey participants included East Stroudsburg University faculty and students. Confidentiality measures to be taken: Survey gizmo strips identity information from the data collected. Surveys are the main data collection tool. Faculty and students were given an invitation via listserv with an accompanying link to the survey. Two surveys were given via the East Stroudsburg University listserv to the student and faculty population and were available for twelve days. Surveys were administered through Survey Gizmo, including informed consent as a question within the survey, which was then imported into excel and SPSS for analysis.

PERCEPTION OF D2L TOOLS

Findings and Discussion

A total of 178 East Stroudsburg University Students took the survey, which is approximately 3% of the student population and a total of 74 faculty, which is approximately 19% of combined part time and full time faculty. Faculty gender distribution is evenly distributed, but the student participants have a larger female response rate with a ratio of 2:1. Student's class includes 75% undergraduates and 25% graduate students. Faculty mean of courses taught is 3.7 courses.

Comfort in Desire2Learn in both students and faculty had a 71% comfort level, which included the comfortable and very comfortable criteria that participants indicated. 13% of students and 11% of faculty indicated comfortable or very uncomfortable. Satisfaction in Desire2Learn was indicated by faculty responses of 54% and student responses of 63% in satisfied and very satisfied categories. 16% of the faculty participants and 18% of the student participants indicated dissatisfied and very dissatisfied in the satisfaction category.

Students were asked two specific questions on a three groups of tools that are available in the learning management system Desire2Learn. The first question was the usefulness of each tool and the second is would they want to use that specific tool. The faculty was asked if individual tools were beneficial to their course and also their opinion on the following tools in the following categories: This tool is helpful in the delivery of my course, I tried this tool but did not like it, I have not used this tool but know what it is, do not use and so not know what it is, and not applicable.

T-test was used to compare Communication, Evaluation, and Administrative tools. Communication tools means were 3.2501 for students and 4.1917 for faculty, Evaluation tools

PERCEPTION OF D2L TOOLS

means were 3.8244 for students and 3.4744 for faculty, and Administrative tools means were 3.2895 for students and 3.0938 for faculty. There was a significant difference between means of Communication and Evaluation tools but not in Administrative tools. Also a Univariate Analysis of variance was conducted to find if there was a cross effect between genders in both student and faculty subsets but this did not occur.

Student question #8: Please indicate the usefulness of the following D2L tools?
Indicated by the total percentage of the participants and exact numbers of participants.

| | Useful and Used this tool | Useful and haven't used this tool | Not useful and used this tool | Not useful and haven't used this tool. |
|-------------------|--------------------------------------|--------------------------------------------------|------------------------------------------|-------------------------------------------------------|
| Blog | 6.7% | 18.9% | 6.1% | 33.5% |
| | 11 | 31 | 10 | 55 |
| Chat | 9.8% | 31.7% | 4.3% | 28.7% |
| | 16 | 52 | 7 | 47 |
| Discussion | 48.8% | 21.7% | 9% | 12.7% |
| | 81 | 36 | 15 | 21 |
| Classlist | 66.1% | 24.4% | 3.6% | 4.2% |
| | 111 | 41 | 6 | 7 |
| Dropbox | 89.3% | 4.7% | 4.7% | 0% |
| | 151 | 8 | 8 | 0 |
| Quiz | 81.5% | 10.1% | 4.8% | 1.8% |
| | 137 | 17 | 8 | 3 |
| Grades | 86.9% | 5.4% | 4.8% | 1.2% |
| | 146 | 9 | 8 | 2 |
| Checklist | 23.8% | 24.4% | 6.1% | 20.7% |
| | 39 | 40 | 10 | 34 |
| Attendance | 29.9% | 25% | 7.3% | 18.3% |
| | 49 | 41 | 12 | 30 |
| News | 43% | 17.6% | 6.1% | 13.3% |
| | 71 | 29 | 10 | 22 |
| Survey | 17.8% | 22.7% | 11% | 18.4% |
| | 29 | 37 | 18 | 30 |
| Locker | 11.7% | 30.7% | 7.4% | 21.5% |
| | 19 | 50 | 12 | 35 |

PERCEPTION OF D2L TOOLS

Chart was compiled from previous chart to show two different groupings of answers in both usefulness as a whole and tools used by students.

| | Useful | Not useful | | Used | Not used |
|-------------------|--------|------------|--|--------|----------|
| Blog | 25.60% | 39.60% | | 12.80% | 52.40% |
| | 42 | 65 | | 21 | 86 |
| Chat | 41.50% | 33.00% | | 14.10% | 60.40% |
| | 68 | 54 | | 23 | 99 |
| Discussion | 70.50% | 22% | | 57.80% | 34.40% |
| | 117 | 36 | | 96 | 57 |
| Classlist | 90.50% | 7.80% | | 69.70% | 28.60% |
| | 152 | 13 | | 117 | 48 |
| Dropbox | 94.00% | 4.70% | | 94.00% | 4.70% |
| | 159 | 8 | | 159 | 8 |
| Quiz | 91.60% | 6.60% | | 86.30% | 11.90% |
| | 154 | 11 | | 145 | 20 |
| Grades | 92.30% | 6.00% | | 91.70% | 6.60% |
| | 155 | 10 | | 154 | 11 |
| Checklist | 48.20% | 26.80% | | 29.90% | 45.10% |
| | 79 | 44 | | 49 | 74 |
| Attendance | 54.90% | 25.60% | | 37.20% | 43% |
| | 90 | 42 | | 61 | 71 |
| News | 61% | 19.40% | | 49% | 30.90% |
| | 100 | 32 | | 81 | 51 |
| Survey | 40.50% | 29% | | 28.80% | 41.10% |
| | 66 | 48 | | 47 | 67 |
| Locker | 42.40% | 28.90% | | 19.10% | 52.20% |
| | 69 | 47 | | 31 | 85 |

Looking at some of the tendencies in how useful a tool is compared to if the user has used this tool or not, filtering societal patterns of communication especially with social media and other communication strategies that are a norm. Examples of this are the survey data because surveys whether they are used in the learning environment participants has a strong tendency to encounter one in their natural environment therefore having previous knowledge of what the tool is unlike Blogs. Blogs might not have a wider audience which could account for the tendency for those who did not use blogs would not find them as useful.

PERCEPTION OF D2L TOOLS

Faculty question #9: Please indicate how beneficial the following tools are in the Desire2Learn environment? Indicates total percentage of the participants and exact numbers of participants.

| | Strongly Not Beneficial | Not Beneficial | Beneficial | Strongly Beneficial |
|----------------------|--------------------------------|-----------------------|-------------------|----------------------------|
| Blog | 3% | 19.4% | 4.5% | 0% |
| | 2 | 13 | 3 | 0 |
| Chat | 1.5% | 16.4% | 4.5% | 7.5% |
| | 1 | 11 | 3 | 5 |
| Discussion | 0% | 6% | 13.4% | 29.9% |
| | 0 | 4 | 9 | 20 |
| Classlist | 3% | 3% | 13.4% | 62.7% |
| | 2 | 2 | 9 | 42 |
| Dropbox | 3% | 4.5% | 19.4% | 43.3% |
| | 2 | 3 | 13 | 29 |
| Quiz | 1.5% | 6% | 10.4% | 38.8% |
| | 1 | 4 | 7 | 26 |
| Grades | 3% | 7.5% | 17.9% | 44.8% |
| | 2 | 5 | 12 | 30 |
| Checklist | 6% | 16.4% | 17.9% | 9% |
| | 4 | 11 | 4 | 3 |
| Attendance | 1.5% | 11.9% | 14.9% | 16.4% |
| | 1 | 8 | 10 | 11 |
| News | 3% | 3% | 22.4% | 38.9% |
| | 2 | 2 | 15 | 26 |
| Survey | 1.5% | 7.5% | 14.9% | 4.5% |
| | 1 | 5 | 10 | 3 |
| Calendar | 3% | 11.9% | 11.9% | 19.4% |
| | 2 | 8 | 8 | 13 |
| Rubrics | 0% | 16.4% | 17.95 | 95 |
| | 0 | 11 | 12 | 6 |
| Upload Files | 4.5% | 3% | 19.4% | 61.2% |
| | 3 | 2 | 13 | 41 |
| Create Module | 1.5% | 4.5% | 14.9% | 49.3% |
| | 1 | 3 | 10 | 33 |

PERCEPTION OF D2L TOOLS

Chart was compiled from previous chart to show two different groupings of answers in benefit of tools for faculty towards courses.

| | Not Beneficial | Beneficial | Neutral |
|--------------------------|---------------------------|-------------------|----------------|
| Blog | 22% | 4.50% | 38.9% |
| | 15 | 3 | 26 |
| Chat | 17.90 % | 12.00% | 28.9% |
| | 12 | 8 | 26 |
| Discussion | 6% | 43.30% | 32.8 |
| | 4 | 29 | 22 |
| Classlist | 6% | 76.10% | 35.8% |
| | 4 | 51 | 24 |
| Dropbox | 8% | 62.70% | 13.4% |
| | 5 | 42 | 9 |
| Quiz | 7.50% | 49.20% | 23.9% |
| | 5 | 33 | 16 |
| Grades | 11% | 62.70% | 9.0% |
| | 7 | 42 | 6 |
| Checklist | 22% | 26.90% | 35.8% |
| | 15 | 7 | 24 |
| Attendance | 13.40 % | 31.30% | 28.4% |
| | 9 | 21 | 19 |
| News | 6% | 61.30% | 17.9% |
| | 4 | 41 | 12 |
| Survey | 9.00% | 19.40% | 37.3% |
| | 6 | 13 | 25 |
| Calendar | 15% | 31.30% | 9.0% |
| | 10 | 21 | 6 |
| Rubrics | 16% | 26.9% | 25.4% |
| | 11 | 18 | 17 |
| Upload Files | 7.5% | 80.6% | 3.0% |
| | 5 | 54 | 2 |
| Create Module | 6.0% | 64.2% | 11.9% |
| | 4 | 43 | 8 |

PERCEPTION OF D2L TOOLS

A strong tendency that was found is that the more frequently used tools are the tools to be perceived with the most benefit. An interesting anomaly with student and faculty benefit or usefulness was with Rubrics because students found them more valuable than the faculty.

Student question #9: Please indicate preference of Desire2Learn tools you would like to use? Indicated by the total percentage of the participants and exact numbers of participants.

| | Strongly Not Use | Not Use | Would Use | Strongly would use |
|-------------------|-------------------------|----------------|------------------|---------------------------|
| Blog | 22.60% | 39.40% | 9.0% | 1.3% |
| | 35 | 61 | 14 | 2 |
| Chat | 17.40% | 24.50% | 26.50% | 7.70% |
| | 27 | 38 | 41 | 12 |
| Discussion | 13.50% | 9.6% | 41.0% | 39.10% |
| | 21 | 15 | 64 | 31 |
| Classlist | 7.10% | 3.8% | 34.60% | 39.10% |
| | 11 | 6 | 54 | 61 |
| Dropbox | 7.00% | 3.2% | 31.2% | 54.80% |
| | 11 | 5 | 49 | 86 |
| Quiz | 5.7% | 3.20% | 35.0% | 49.0% |
| | 9 | 5 | 55 | 77 |
| Grades | 3.20% | 1.3% | 32.1% | 59.6% |
| | 5 | 2 | 50 | 93 |
| Rubric | 6.5% | 5.8% | 25.8% | 47.7% |
| | 10 | 9 | 40 | 74 |
| Calendar | 9.5% | 6.3% | 31.0% | 38.6% |
| | 15 | 10 | 49 | 61 |
| Checklist | 9.6% | 13.5% | 25.6% | 26.9% |
| | 15 | 21 | 40 | 42 |
| Attendance | 10.3% | 10.9% | 24.4% | 27.6% |
| | 16 | 17 | 38 | 43 |
| News | 7.8% | 14.9% | 24.7% | 24.7% |
| | 12 | 23 | 38 | 38 |
| Survey | 13.0% | 14.9% | 21.4% | 10.4% |
| | 20 | 23 | 33 | 16 |
| Locker | 14.2% | 16.8% | 19.4% | 14.8% |
| | 22 | 26 | 30 | 23 |

PERCEPTION OF D2L TOOLS

Students tended to gravitate towards tools that were used to communicate and confirm feedback, whether it was an assignment being turned in, to formative feedback that can be accessed from anywhere. There was a difference in tools that faculty use to what students would use. The tools that have a would use rate of over 60% would include the use of Discussions, Classlist, Dropbox, Quizzes, Grades, Rubrics, and Calendar. These tools are generally used to communicate or facilitate formative and/or summative feedback for students.

Chart was compiled from previous chart to show two different groupings of answers in what students would want or not want to use.

| | Not Use | Would Use |
|-------------------|---------|-----------|
| Blog | 62.00% | 10.30% |
| | 96 | 16 |
| Chat | 41.90% | 34.20% |
| | 65 | 53 |
| Discussion | 23.10% | 80.10% |
| | 36 | 95 |
| Classlist | 10.90% | 73.70% |
| | 17 | 115 |
| Dropbox | 10.20% | 86.00% |
| | 16 | 135 |
| Quiz | 8.90% | 84.00% |
| | 14 | 132 |
| Grades | 4.50% | 91.70% |
| | 7 | 143 |
| Rubric | 12.30% | 73.50% |
| | 19 | 114 |
| Calendar | 15.80% | 69.60% |
| | 25 | 110 |
| Checklist | 23.10% | 52.50% |
| | 36 | 82 |
| Attendance | 21.20% | 52.00% |
| | 33 | 81 |
| News | 22.70% | 49.40% |
| | 35 | 76 |
| Survey | 27.90% | 31.80% |
| | 43 | 49 |
| Locker | 31.00% | 34.20% |

PERCEPTION OF D2L TOOLS

| | | |
|--|----|----|
| | 48 | 53 |
|--|----|----|

Faculty question 8 Please indicate your opinion of the following tools used in Desire2Learn
Indicated by the total percentage of the participants and exact numbers of participants.

| | Helpful in course delivery | Tried but did not like | Not used but know what it is | Do no use, do not know |
|---------------------|-----------------------------------|-------------------------------|-------------------------------------|-------------------------------|
| Blog | 3.0% | 7.5% | 55.2% | 22.4% |
| | 2 | 5 | 37 | 15 |
| Chat | 11.9% | 14.9% | 50.7% | 13.4% |
| | 8 | 10 | 34 | 9 |
| Discussion | 36.8% | 13.2% | 35.3% | 8.8% |
| | 25 | 9 | 24 | 6 |
| Classlist | 77.6% | 7.5% | 6.0% | 1.5% |
| | 52 | 5 | 4 | 1 |
| Dropbox | 57.4% | 10.3% | 19.1% | 5.9% |
| | 39 | 7 | 13 | 4 |
| Quiz | 40.3% | 11.9% | 29.9% | 10.4% |
| | 27 | 8 | 20 | 7 |
| Grades | 44.1% | 17.6% | 22.1% | 5.9% |
| | 30 | 12 | 15 | 4 |
| Checklist | 3.0% | 17.9% | 38.8% | 31.3% |
| | 2 | 12 | 26 | 21 |
| Attendance | 20.9% | 17.9% | 29.9% | 22.4% |
| | 14 | 12 | 20 | 15 |
| News | 67.2% | 4.5% | 10.4% | 9.0% |
| | 45 | 3 | 7 | 6 |
| Survey | 10.4% | 11.9% | 35.8% | 26.9% |
| | 7 | 8 | 24 | 18 |
| Calendar | 31.8% | 16.7% | 34.8% | 9.1% |
| | 21 | 11 | 23 | 6 |
| Rubrics | 16.4% | 14.9% | 38.8.% | 20.9% |
| | 11 | 10 | 26 | 14 |
| Upload Files | 82.1% | 7.5% | 4.5.% | 1.5% |
| | 55 | 5 | 3 | 1 |

PERCEPTION OF D2L TOOLS

| | | | | |
|----------------------|-------|-------|----|------|
| Create Module | 61.2% | 14.9% | 6% | 7.5% |
| | 41 | 10 | 7 | 4 |

In light of the students want for the use of Discussions, Classlist, Dropbox, Quizzes, Grades, Rubrics, and Calendar, the discrepancy in value is shown in the Discussion results with over 44% of participants reporting not using this tool, over 20% not using Dropbox, almost 50% not using the Quiz tool, 28% not using the grade tool, over 59% not using rubrics, and over 43% not utilizing the calendar tool. There is some alignment with tools such as Discussions, Dropbox and Calendar tool usage with not using the tools.

Chart was compiled from previous chart to show two different groupings of answers in what tools faculty tried and did not try to use.

| | Use | Do not use |
|-------------------|------------|-------------------|
| Blog | 10.50% | 77.60% |
| | 7 | 52 |
| Chat | 26.80% | 64.10% |
| | 18 | 43 |
| Discussion | 50.00% | 44.10% |
| | 34 | 30 |
| Classlist | 85.10% | 7.50% |
| | 57 | 5 |
| Dropbox | 67.70% | 25.00% |
| | 46 | 17 |
| Quiz | 52.20% | 40.30% |
| | 35 | 27 |
| Grades | 61.70% | 28.00% |
| | 42 | 19 |
| Checklist | 20.90% | 70.10% |
| | 14 | 47 |
| Attendance | 38.80% | 52.30% |
| | 26 | 35 |
| News | 71.70% | 19.40% |
| | 48 | 13 |
| Survey | 22.30% | 62.70% |

PERCEPTION OF D2L TOOLS

| | | |
|----------------------|--------|--------|
| | 15 | 42 |
| Calendar | 48.50% | 43.90% |
| | 32 | 29 |
| Rubrics | 31.30% | 20.90% |
| | 21 | 40 |
| Upload Files | 89.60% | 1.50% |
| | 60 | 4 |
| Create Module | 76.10% | 14% |
| | 51 | 11 |

Limitations

- Question interpretation could provide different understanding of questions meanings.
- Participants could misinterpret learning environment tools for their prior experiences with other systems.
- Prior experience and affective nature towards the Desire2Learn management system
- Response validity due to interpretation
- Close-ended responses can guide and therefore limit the participant's responses.
- Faculty time availability towards completing the survey and time using D2L for course support.
- Graduate students have a smaller ratio to compare to undergraduate students for generalization purposes.
- The survey was only available for twelve days including spring break.

Literature Support and Challenges

Evaluation is important in distance education and alignment with the goals of a course (Olmstead, 2007). Course grades are used as an indicator of achievement (Barnard, Paton, & Lan, 2008; Reinhart & Schneider, 2001; Noel-Levitz, 2011). But affective factors are important in

PERCEPTION OF D2L TOOLS

explaining and predicting student learning in an online learning environment (Biner et al., 1997). Among the attitudinal constructs, student satisfaction or their perceived course experience value is worth being examined. Student satisfaction is related to persistence, motivation, and course design. Student satisfaction is a major indicator of quality in programs in higher education (Yukselturk & Yildirim, 2008). The learner's perspective gives institutions a better understanding of strengths and weaknesses in online programs (Noel-Levitz, 2011). Improvement can be identified with data on student satisfaction, to improve where needed (Reinhart & Schneider, 2001).

Communication between student users can occur through the exchange of information, knowledge, thoughts, or ideas regarding course content or create a community amongst themselves (Moore & Kearsley, 1996). To increase this interaction, the technology that supports this interaction and instructional design must fit the specific learning contexts (Anderson, 2003; Wagner, 1994). Asynchronous setting, which Desire2Learn can provide, has greater influence on learning outcomes (Bernard, Abrami, Borokhovski, Wade, Tamim, Surkes, & Bethel, 2009). Course design affects students and their interaction with the content and their instructor (Moore & Kearsley, 2005). Decreased course flexibility results in the reduction of interaction between students and teacher (Eom & Wen, 2006; Giossos, Koutsouba, Lionarakis, & Skavantzios, 2009). Some literature that I could not find was specific tools in a single learning management system. Studies tended to compare two or more learning management systems together and grouped tools in a variety of ways by their function or purpose.

Further Questions

- How would the results compare if there were more time to have a larger time window to collect survey data?

PERCEPTION OF D2L TOOLS

- How would other studies group the learning management system tools together and how it compared to this study?
- What would be the differences between graduate students preferences and values with undergraduate students preferences and values?
- How many faculty use Desire2Learn and how they use it in their course
- What tools are used for by faculty by faculty perception of function

PERCEPTION OF D2L TOOLS

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PERCEPTION OF D2L TOOLS

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PERCEPTION OF D2L TOOLS

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