Learning Management Systems Evaluation Report

Prepared by: Department of Distance Education and Instructional Technology (DEIT)
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Executive Summary

DeSales University currently uses the ANGEL Learning Management System (LMS) to host its online and hybrid courses. Blackboard acquired ANGEL in 2009 and at that time announced an October 2014 lifecycle end. Given this date, DeSales would need to identify and migrate to another LMS. Starting fall 2011, the Department of Distance Education and Instructional Technology (DEIT) in collaboration with the Academic Technology (ATC) ad-hoc committee began an evaluation project to review alternatives to address the needs of the University regarding the future direction of DeSales’ LMS.

DEIT drew LMS must-have features from the most recent faculty and staff LMS and technology surveys. The ATC requested plagiarism detection be added as a feature. The ATC and Distance Education Advisory Group also requested CoursEval integration and Panopto lecture capture. The above findings have been taken into great consideration when reviewing the LMS options on the market to ensure that the recommendations meet the specific needs of our faculty and students.

In 2011 DEIT started investigating and evaluating various proprietary and open source LMS products to help align the needs, mission, strategic plan, and support structure of the University. DEIT also conducted various studies to assess the needs of DeSales’ faculty and students, analyze the current LMS market, and benchmark against our peer and aspirant institutions and other ANGEL schools. As a result of our investigations, Desire2Learn, Blackboard Learn, and Canvas were identified as the finalists for a comparative evaluation based on reliability, scalability and functionality. Vendor presentations to various DSU audiences occurred between November 2011 and January 2012.

Blackboard changed its plan in March 2012 and decided to extend its support for ANGEL clients indefinitely. DeSales University decided to continue the LMS evaluation project in spite of the change.

From May 2012 to August 2012, DEIT hosted two pilot studies to discover and document faculty's and students' perceptions of Desire2Learn and Canvas, and to determine whether either of them would be a good fit to meet the DeSales University's needs. The Desire2Learn pilot took place in ACCESS 2012 Summer Minimester 1 and included five online courses and 68 enrolled students. The Canvas pilot took place in ACCESS 2012 Summer Minimester 1, MBA Summer Session, and MEd Summer Session, and included four online courses and one hybrid course, with a total of 84 enrolled students. All participants were asked to fill out a survey and the faculty participants were invited to a focus group session to share their experience about the pilot.

DEIT also conducted and documented the reference checks for all the three systems in terms of migration support, service quality, and pricing fidelity.

As a result of this evaluation study, DEIT recommends that DeSales University adopt Blackboard Learn as its next LMS and that a process be initiated in January 2013 to pilot Blackboard Learn and then in March 2013 for orienting faculty, staff, and students and converting existing ANGEL courses to Blackboard.
Introduction

DeSales University currently uses the ANGEL Learning Management System (LMS) to host its online and hybrid courses. Blackboard acquired ANGEL in 2009 and at that time announced an October 2014 lifecycle end. Therefore, DeSales would need to identify and migrate to another LMS. In fall 2011, the Department of Distance Education and Instructional Technology in collaboration with the Academic Technology ad-hoc committee began an evaluation project to review alternatives to address the needs of the University regarding the future direction of DSU-LMS.

Blackboard changed its plan in March 2012 and decided to extend its support for ANGEL clients indefinitely. DeSales University decided to continue the LMS evaluation project in spite of the change.

THE NEEDS OF OUR FACULTY AND STUDENTS

According to the Technology and LMS Surveys DEIT conducted in 2008, 2009 and 2010, the following features of an LMS are considered “absolutely necessary” or “Pretty important” by DSU faculty teaching online:

- **Absolutely necessary**
  - Discussion forum management (scheduling, grading, access)
  - Online gradebook
  - Announcements
  - Student tracking (attendance, participation, test scores)
  - Online marking/commenting tools
  - Automated test management (security, set, various question types)
  - Community/networking

- **Pretty important**
  - Content sharing and reuse
  - Instructional design tools
  - Survey
  - Course management tools

And the following features are considered “critical” or “very important/important” to DSU students learning online:

- **Critical**
  - Course Schedule
  - Syllabus
  - Announcements
  - Email
  - Taking exams and submitting assignments online

- **Very important/important**
  - Keeping track of grades
- Group work (sharing resources among students)
- Online discussion
- Consistent DSU course look and feel

The Academic Technology committee (ATC) requested plagiarism detection be added as a feature. The ATC and Distance Education Advisory Group also required CoursEval integration and Panopto lecture capture. The above findings have been taken into great consideration when reviewing the LMS options on the market to ensure that the recommendations meet the specific needs of our faculty and students.

**PEER AND ASPIRANT INSTITUTIONS BENCHMARKING**

A benchmarking study of our peer and aspirant institutions and other ANGEL institutions had also been taken into consideration when selecting the LMS options to review.

<table>
<thead>
<tr>
<th>Peers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institution</strong></td>
</tr>
<tr>
<td>Arcadia</td>
</tr>
<tr>
<td>Elizabethtown</td>
</tr>
<tr>
<td>King's</td>
</tr>
<tr>
<td>LaSalle</td>
</tr>
<tr>
<td>Lebanon Valley</td>
</tr>
<tr>
<td>Messiah</td>
</tr>
<tr>
<td>Moravian</td>
</tr>
<tr>
<td>Mount St. Mary's</td>
</tr>
<tr>
<td>Scranton</td>
</tr>
<tr>
<td>Wilkes</td>
</tr>
<tr>
<td>DeSales</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aspirants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institution</strong></td>
</tr>
<tr>
<td>Catholic</td>
</tr>
<tr>
<td>Drew</td>
</tr>
<tr>
<td>Gettysburg</td>
</tr>
<tr>
<td>Juniata</td>
</tr>
<tr>
<td>Loyola</td>
</tr>
<tr>
<td>Muhlenburg</td>
</tr>
<tr>
<td>St. Joseph's</td>
</tr>
<tr>
<td>Susquehanna</td>
</tr>
<tr>
<td>Ursinus</td>
</tr>
<tr>
<td>Villanova</td>
</tr>
</tbody>
</table>
### Other ANGEL Institutions

<table>
<thead>
<tr>
<th>Institution</th>
<th>LMS in 2010</th>
<th>LMS in 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>USciences</td>
<td>ANGEL</td>
<td>Converting to Blackboard</td>
</tr>
<tr>
<td>UMDNJ</td>
<td>ANGEL</td>
<td>Converting to Moodle</td>
</tr>
<tr>
<td>Penn State</td>
<td>ANGEL</td>
<td>Remaining on ANGEL</td>
</tr>
<tr>
<td>SUNY</td>
<td>ANGEL</td>
<td>Remaining on ANGEL until 2014</td>
</tr>
<tr>
<td>Michigan State</td>
<td>ANGEL</td>
<td>Converting to Desire2Learn</td>
</tr>
</tbody>
</table>

### Alternatives Considered

In 2011 DEIT started investigating and evaluating various proprietary and open source LMS products to help align the needs, mission, strategic plan, and support structure of the University. And DEIT has identified the following products to be formally evaluated using an LMS feature comparison matrix (Appendix I):

- Desire2Learn
- Blackboard Learn
- MoodleRooms

The above LMS platforms were selected for evaluation based on the following criteria:

**Reliability/Viability:** Being the leaders in the LMS market, they demonstrate continued adoption by higher education institutions and sustained support and improvement either via parent company (Blackboard, Desire2Learn), or via a development community (Moodle). (Appendix II)

**Scalability:** They have the ability to serve both large and small institutions with agile hardware/software solutions, and to accommodate growing enrollment of students and infrastructure needs. Benchmarking efforts show that most of the above platforms have one or more current adopters similar to DSU in terms of number of users and course volume.

**Functionality:** They have the essential functions that address the needs of faculty and students.

The following vendor demonstrations were scheduled for the ATC committee to evaluate the three platforms.

- **MoodleRooms Presentation** - Nov 28, 2011 from 1 PM to 4:30 PM
- **Blackboard Presentations** – Dec 5, 2011 from 1 PM to 4:30 PM; Jan 10, from 5:10 PM to 6:10 PM
- **Desire2Learn Presentation** – Dec 8, 2011 from 1 PM to 4:30 PM

The IT department, DeSales’ faculty, staff, and students were also invited to participate and share their thoughts by completing a short survey after the sessions.
LMS Pilot Study

Based on the vendor demonstrations, faculty and student feedback, and reference check results (Appendices III, IV, V), DEIT selected Desire2Learn and Canvas to pilot with current distance education programs.

- Canvas was selected out of the consideration that it recently began to gain considerable interest in higher education because of its cloud-hosting feature, openness for integration, and user-friendly interface (Appendices II and III).
- MoodleRooms was eliminated because the sales staff was very unresponsive to DEIT’s requests to set up a sandbox environment for testing and to schedule a demonstration for the DeSales community. We discovered during this time Blackboard was in the process of acquiring MoodleRooms.

The objectives of the pilot study were as follows:

- To discover and document faculty's and students’ perceptions of Desire2Learn and Canvas.
- To identify technical issues faculty and students encounter when using Desire2Learn and Canvas.
- To identify administrative and instructional features and capabilities missing from Desire2Learn and Canvas.
- To determine LMS fit with various learning and teaching styles.
- To discover and document concerns about moving to a new LMS platform.

PILOT PREPARATION AND EVALUATION PROCESSES

The Desire2Learn pilot took place in ACCESS 2012 Summer Minimester 1 (May 22 to July 14). The pilot included five online courses and 68 enrolled students. On March 22, 2012, Desire2Learn provided a face-to-face training session to faculty participating in the pilot. In the week of May 14, DEIT provided an online student orientation for students enrolled in the pilot courses. On June 27, 2012 an online survey was distributed to faculty and students to gather feedback about the pilot. Faculty were also invited to focus groups and personal interview sessions in the first two weeks of July 2012 to share their perceptions and experience.

The Canvas pilot took place in ACCESS 2012 Summer Minimester 1 (06/18/2012-08/11/2012), MBA Summer Session (07/09/2012-08/15/2012), and MEd Summer Session (07/16/2012-08/27/2012). The pilot included four online courses and one hybrid course, with a total of 84 enrolled students. Canvas provided an online training session for the DEIT Administrator on May 11, 2012, and another online training session to faculty participating in the pilot on May 18. During the weeks of June 11 and July 2, DEIT offered four online orientation sessions for students enrolled in the pilot courses. On August 16, 2012 two online surveys were distributed to faculty and students to gather feedback about the pilot. The faculty were also invited to focus groups and personal interview sessions to share their perceptions and experience.
DESIRE2LEARN PILOT RESULTS

All of the five instructors who participated in the D2L pilot would recommend DeSales University adopt D2L as its next LMS because it's a more "modernized" system compared with ANGEL. When asked to rank ANGEL and D2L on a scale of 1 to 10, most gave D2L a two-point advantage considering its “technical potential” for taking online learning “to the next level.” ANGEL was rated at 6 and D2L 8 to 8.5. Concerns about D2L are that it requires more time to learn and may be overwhelming in the beginning.

During the pilot, faculty got a chance to integrate a third-party plagiarism tool TurnItIn. Participants universally agreed Turnitin would be a great tool to integrate with DeSales’ next LMS because it helps instructors to quickly and easily detect possible plagiarism areas and could also serve as an effective deterrent.

Content transferred from ANGEL was generally satisfactory except for the LOR and Course Polls. Of the faculty who chose to answer, 100% were satisfied with the overall design and navigation of D2L, and the Calendar, Classlist, Content, Email, Rubrics, and File Management tools. One hundred percent were very satisfied with Course Builder, Discussions, Dropbox, Grades, News, Record Audio, and Turnitin. “Turnitin feature was amazing” and “grading or Assessment (in D2L) was definitely a step up from ANGEL.”

Among the students who participated in the pilot, 46.67% were satisfied and 6.67% were very satisfied with their overall D2L experience. And 60% of the students would recommend DeSales to adopt D2L as its next LMS. About half of the students were satisfied with the D2L interface (design, navigation, page layout), and 46.67% thought it was "easy to use." Among the tools provided, Dropbox was rated as satisfactory by 73.33% of the students, Content by 60%, and Discussions and Classlist were liked by 53.33%. Fifty three percent of the students were satisfied with the gradebook, and an additional 6.67% were very satisfied. Although highly valued by faculty, Turnitin was rated as satisfactory by only 13.34% of the students (6.67% satisfied, and 6.67% very satisfied).

CANVAS PILOT RESULTS

All of the five instructors who participated in the pilot would NOT recommend DeSales University adopt Canvas as its next LMS. When asked to rank ANGEL and Canvas on a scale of 1 to 10, all ranked ANGEL higher than Canvas. ANGEL was rated 6 to 9 points and Canvas 5 to 8.

Faculty identified some obvious weaknesses of the Canvas system. The color scheme is very dull; homepage tends to be cluttered by unimportant, trivial updates; rubrics are easy to create but hard to attach to an assignment or discussion; the Inbox (internal messaging) interface is very confusing; the reporting function is not as rigorous and sophisticated as ANGEL’s; the Discussion view is not user-friendly and it is difficult to identify unread messages or sort messages; it is very challenging to add images to quiz questions; the import of ANGEL archive didn’t work well making several instructors create the course content from scratch; the media recorder did not work for some Mac users; and students could not easily tell their progress using the gradebook.
In general, one third of the faculty who responded the survey were very unsatisfied with their overall Canvas experience, one third were unsatisfied, and another one third were satisfied. And when asked how likely they would recommend DeSales to adopt Canvas as its next LMS, 33.33% selected “not at all likely”, 33.33% “not very likely”, and 33.33% “somewhat likely.” A few participants made the following comments regarding their overall Canvas experience: “There are many such specific instances that imply Canvas design was not thought out by instructors” and that “it seems Canvas is open to suggestions from users. So if changes are made in the areas mentioned above, I would recommend Canvas.”

For students who were enrolled in the pilot, 23.52% were unsatisfied, 17.65% were neutral, 52.94% were satisfied and 5.88% were very satisfied with their overall Canvas experience. When asked “How likely is it that you would recommend DeSales to adopt Canvas as its next LMS,” 11.76% said “not at all likely,” 29.41% “not very likely;” 41.18% selected “somewhat likely” and 17.65% were “very likely.”

**LMS Evaluation Summary**

The following table summarizes the results of the evaluation conducted by DEIT:

<table>
<thead>
<tr>
<th></th>
<th>Canvas</th>
<th>Desire2Learn</th>
<th>Blackboard (Used CourseSites to evaluate)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Highlights</strong></td>
<td>Simple interface</td>
<td>Quick and easy to use Instructional Design Wizard and Course Builder tool Course Design Accelerator provide a task checklist for instructors</td>
<td>Early Alert System for “at-risk” students Multiple course templates are available including for similar to ANGEL. ANGEL-like interface with Nuggets and drag and drop capability Excellent help resources available Can be designed in any format (modules, weekly, etc.) “Safe Assignment” auto checks for plagiarism Supports many 3rd party programs Offers a calculated final grade that can be auto updated. Grading rubrics can be used in various areas.</td>
</tr>
<tr>
<td></td>
<td>Time saving for faculty - drag-n-drop, speed grader, mobile app</td>
<td>Users can record audio in discussion, dropbox, news and ePortfolio</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Powerful communication tool</td>
<td>Instructors can provide audio feedback when grading.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Easy-to-use media recorder in all parts of the course</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(content, discussion, assignment, grading)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“All-in-one” solution: e-portfolio, web conferencing, mobile app, etc. all included</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very well-documented built-in help and guides (more info available at guides.instructure.com)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pilot Results</strong></td>
<td>All of the five instructors who participated in the pilot would NOT recommend DeSales University adopt Canvas as its next LMS. For students who were</td>
<td>All of the five instructors who participated in the D2L pilot would recommend DeSales University adopt D2L as its next LMS because it's more &quot;modernized&quot; compared with</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
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</tr>
</tbody>
</table>
enrolled in the pilot, 23.52% were unsatisfied, 17.65% were neutral, 52.94% were satisfied and 5.88% were very satisfied with their overall Canvas experience.

**Strengths Identified**
The HTML editor is easy to use with the full page view. The calendar tool is helpful. Drag-and-drop feature is nice. Rubrics are easy to create. Assignment interface makes grading easier. Video tutorials offered on instructure.com are helpful.

**Weaknesses Identified**
Dull color theme Cluttered homepage Hard to attach rubrics Inbox and discussion not user-friendly; Reporting function not as robust as ANGEL’s Import of ANGEL archive didn’t work well media recorder not working

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**Integration with Datatel**
Flat file, manually run at any desired interval. Currently cannot be run automatically like XEI (Instructure is working on a solution with Datatel)

**Integration with Blackboard Collaborate**
Has a free web conferencing tool “Big Blue Button.”

**ANGEL**
Tested and worked (except Can directly import ANGEL 6.1 9/4/2012 - Tested on
**Recommendation**

Based on the evidence collected from this study, DEIT proposes that DeSales University adopt Blackboard Learn as the campus standard LMS to replace ANGEL. DEIT further recommends that in January 2013 a process be initiated to pilot Blackboard. Starting in March 2013, DEIT will begin orienting all DeSales faculty, staff, and students and converting current ANGEL courses to the Blackboard LMS.

Blackboard Learn has a user-friendly interface and provides better or comparable functionality with the benefit of a plagiarism auto check (SafeAssign) and early alert features to identify at-risk students. It has many built-in, ready-to-use master course templates that will help to ensure alignment of learning outcomes and instructional activities. Blackboard also offers an on-demand learning center featuring online video tutorials that can be accessed anytime anywhere by faculty and students.

As the largest LMS provider in the market, Blackboard provides education, mobile, communication, and commerce software and related services and partners with many content providers to make content available within the LMS. Panopto integrates with Blackboard Learn and supports single sign-on – allowing faculty and students to create and view recordings without having to enter login information again. ConnectEDU has created a Blackboard plugin (MyCoursEval) that connects directly to CoursEval, automating the course evaluation process even beyond portal access. It is clear that Blackboard Learn will provide the best options for meeting the needs of DeSales University’s growing distance education audience and for supporting our global learning initiatives and day-to-day administration of academic programs.

**Next Steps**

Scheduling will be critical to making the migration from ANGEL to Blackboard Learn a success. DEIT will solicit a volunteer from DEAG during fall 2012 to pilot Blackboard Learn in early spring 2013. In January, we will begin to offer training to pilot instructors and provide Blackboard Learn preview sessions to faculty and students. In March 2013, DEIT will start the faculty training and migration process. The migration of ANGEL archived courses into Blackboard will start in the summer 2013 and will continue until a few months after the rollout date. Faculty will continue to
use ANGEL during the summer. Migration support will continue until every course has been successfully migrated into Blackboard Learn. The goal is for faculty and students to access all their courses via single sign-on in Blackboard Learn starting in the fall of 2013.
## Appendix I: LMS Comparison Matrix

Oct 2011

<table>
<thead>
<tr>
<th>Categories</th>
<th>Features</th>
<th>BlackBoard</th>
<th>MoodleRoom</th>
<th>D2L</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>User Interface:</strong></td>
<td></td>
<td>tab navigation; modular structure</td>
<td>tab navigation; modular structure</td>
<td>tab navigation; list structure; drastically different from ANGEL</td>
</tr>
<tr>
<td><strong>Tools:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructional Design Tools/Course Builder</td>
<td>Workflow model</td>
<td>No wizard, can use course template</td>
<td>Step-by-step Instructional Design Wizard and course builder</td>
<td></td>
</tr>
<tr>
<td>Content Creation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course template</td>
<td>Customizable</td>
<td>Customizable</td>
<td>Customizable</td>
<td>Customizable</td>
</tr>
<tr>
<td>Content sharing and reuse</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Customized/ Consistent look and feel</td>
<td>customizable course banner/tabs; drag &amp; drop of nuggets</td>
<td>customizable course banner/tabs; drag &amp; drop of nuggets</td>
<td>customizable course banner/tabs; drag &amp; drop of nuggets</td>
<td></td>
</tr>
<tr>
<td><strong>Communication</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blog</td>
<td>yes</td>
<td>yes</td>
<td>No blog. Individual journal available at course level</td>
<td></td>
</tr>
<tr>
<td>Wiki</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>Web conferencing integration</td>
<td>Blackboard Collaborate</td>
<td>Various plugins for web conferencing</td>
<td>No; can integrate with Blackboard Collaborate</td>
<td></td>
</tr>
<tr>
<td>Discussion</td>
<td>class/group discussion; posting statistics</td>
<td>class/group discussion; posting statistics</td>
<td>class/group discussion; posting statistics</td>
<td>&quot;groups&quot; within courses; associated locker/dropbox/discussion</td>
</tr>
<tr>
<td>Group work</td>
<td>Yes</td>
<td>Yes</td>
<td>&quot;groups&quot; within courses; associated locker/dropbox/discussion</td>
<td></td>
</tr>
<tr>
<td><strong>Productivity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calendar</td>
<td>course &amp; individualized</td>
<td>course &amp; individualized</td>
<td>course &amp; individualized</td>
<td></td>
</tr>
<tr>
<td>bookmarks/resources</td>
<td>User bookmarks</td>
<td>Private bookmarks</td>
<td>students can create private bookmarks; bookmark any content material</td>
<td></td>
</tr>
<tr>
<td><strong>Student Involvement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community/ Groups</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>ePortfolio</td>
<td>Available</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Testing and Assessment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gradebook (student self-tracking)</td>
<td>Yes</td>
<td>Yes</td>
<td>offers a calculated final grade that can be auto updated</td>
<td></td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
<td>Availability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey (reporting at org/program/course level)</td>
<td>auto reminder to students who haven't completed; multiple deployment methods (Email, institutional/departmental/course level announcement); points for completion feature will come in 12 to 18 months; summary or detailed reporting</td>
<td>course-level reporting only; course-level survey reporting only, no program-level reporting; options to export data (.cvs; Word, PDF).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Progress/attendance tracking</td>
<td>early warning system - notify at-risk students</td>
<td>Instructor can view login history, students' time spent on a content item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Honesty</td>
<td>&quot;Safe Assignment&quot; - auto checks for plagiarism</td>
<td>Can integrate with antiplagiarism tools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>File Storage/Exchange</td>
<td>File Exchange (LOR) Students can share the contents of their personal folders with other students. Administrators can define disk space limitations for each user.</td>
<td>n/a. Can be done within groups. not part of LMS; extra product</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Locker/personal file storage My Files</td>
<td>n/a. Can be done within groups. Personal and group locker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support tools (lecture capture, faculty community, publisher resources)</td>
<td>emphasizes on &quot;openness&quot;; integrated with Echo 360, Lecture Capture; McGill publisher's resources</td>
<td>Integrates with lecture capture tools such as Echo 360, BigBlue Button etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessibility:</td>
<td>Screen readable Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mobile Support Mobile Learn and Mobile Central</td>
<td>Mobile apps available for iOs and Android Mobile Web included in LMS at no additional cost; apps available for extra cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compatibility with operating systems/mobile devices/internet browser all major</td>
<td>all major</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration:</td>
<td>Customization (org theme, etc.) yes</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>User management Integration with SIS</td>
<td>Integration with SIS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Statistics &amp; Reporting Available</td>
<td>Available</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tech support 24/7 support through tickets, phone, and email for 2 admin users Premium support offers 24/7 phone, email, and web-based support for a number of named contacts</td>
<td>Available</td>
<td></td>
<td></td>
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</tbody>
</table>

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<table>
<thead>
<tr>
<th>Upgrades</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
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</thead>
<tbody>
<tr>
<td>Course archive, system backup</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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</table>

**Extensionality:**

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<tr>
<th>Programming language</th>
<th>Java</th>
<th>J2EE</th>
<th>PHP/MySQL</th>
<th>Microsoft .NET</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Installation type (Hosted/Own)</th>
<th>Hosted</th>
<th>Hosted (Moodle Rooms)</th>
<th>Hosted</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Source code availability (Open source/Proprietary)</th>
<th>Closed (no access to source code)</th>
<th>Open Source (self-hosted test environment available for with replicated version of production database)</th>
<th>Closed (no access to source code)</th>
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**Migration Assistance:**

<table>
<thead>
<tr>
<th>Plan for migration from ANGEL</th>
<th>direct migration path; free license for co-production site until end of ANGEL contract, free hosting of pilot site for 1 year; Compatibility with older versions of ANGEL archive</th>
<th>direct migration path; can run production site along ANGEL for smooth transition; tool for converting archived ANGEL content</th>
<th>direct migration path; can run production site along ANGEL for smooth transition; tool for converting archived ANGEL content</th>
</tr>
</thead>
</table>

**Note:** Critical/Important as identified in DeSales faculty/student surveys.
Appendix II: The LMS Market

The 2011 Campus Computer Project described the LMS market space as a “volatile” “mature market with immature, or evolving, technologies.” Blackboard has dropped in total market share from 71% in 2006 to 50.6% in 2011. In the meanwhile, Blackboard’s major competitors (Desire2Learn, Moodle, Sakai) have all gained market share. Several new providers such as Instructure, Epsilen, and Loucloud are “generating significant interest and beginning to sign some interesting campus clients.”

![A Profile of the LMS Market, Fall 2011](image)

## Appendix III: Canvas Features and Reference Check

**Compare Canvas**

![Compare Canvas Table]


**Canvas Reference check**
Appendix IV: Desire2Learn Reference Checks
Appendix V: Blackboard Reference Checks

Beginning on August 6, 2012, the DEIT director conducted a series of telephone interviews to collect qualitative data regarding Blackboard Learn’s market stability, its pricing fidelity, and support services. Interviewees were as follows:

- Mr. Terry Tillman, Managing Director, Equity Research, Application Software, Raymond James in Atlanta
- Dr. Rod Murray, Executive Director, Office of Academic Technology from University of the Sciences in Philadelphia, PA (former ANGEL customer)
- Dr. Jeff Parsons, Director of Teaching and Technology Effectiveness at Lindsey Wilson College in Columbia, KY (former ANGEL customer)
- Mr. Doug Cohen, Associate Director, Academic Technology Services, SUNY Learning Network The State University of New York in Albany, NY (former ANGEL customer)

Terry Tillman reported he hasn’t focused as much on Bb since they went private. His assessment is that Blackboard is the most stable of the three LMS systems we are considering. With all the acquisitions, the corporate level administration has been stable other than the CFO. At the highest level, there has been no turnover. He isn’t sure of the stability of Canvas and said that the market is buzzing about folks interested in buying D2L. The equity firm, Providence Capital, that purchased Blackboard has been in the traditional publishing education market for years and does not appear interested in breaking the company apart and selling it. The thought among analysts is that it may go public again in 3 or 4 years. As long as Ray Henderson is not a puppet and continues to forge ahead, Blackboard Learn should be on good footing. They will keep getting bigger. Does Providence help them manage this growth? It will morph into something bigger. They do have sufficient research and development funds to support the changing market needs.

Rod Murray, Blackboard enthusiast and blogger, was at Thomas Jefferson for 20 years and has been at U of Sciences for 3.5. Regarding pricing fidelity, Rod said I would say more than 10%. It’s hard to do apples to apples comparison since we get so much more from Blackboard including their hosting. Bb did not charge for two licenses during pilot period and transition, gained community, content plus portfolio and outcomes. He reports that service and support have been better. The how-to videos were good. There was no migration path from ANGEL resource support however. They had to make their own videos.

Jeff Parson started off as an ANGEL customer and rejected Bb the first time because of pricing and rude sales person. Recently, they chose Bb kept basically the same contract and just a new product, so there was no significant price increase with the transition to Bb. They got Blackboard Learn, Community, and Content Collection for the rate of what they paid for ANGEL. This is consistent with Rod’s account. They are now self-hosted and paying considering less.

Doug Cohen was an ANGEL customer and manages 64 campuses that used ANGEL, Web CT, and Blackboard. He said for 8 – 9 years Bb did keep the pricing for Web CT constant. ANGEL was always a little higher. Nothing has surprised SUNY concerning pricing or services.
Appendix VI: Desire2Learn Pilot Report

OBJECTIVES

The objectives of this pilot study are:

- To discover and document faculty's and students' perceptions of Desire2Learn.
- To identify technical issues faculty and students encounter when using Desire2Learn.
- To identify administrative and instructional features and capabilities missing from Desire2Learn.
- To determine LMS fit with various learning and teaching styles.
- To discover and document concerns about moving to a new LMS platform.

The findings from this research will be used to make informed decisions regarding DeSales University's next learning management system (LMS).

PILOT PREPARATION AND EVALUATION PROCESSES

The Desire2Learn (D2L) pilot took place in ACCESS 2012 Summer Minimester 1 (May 22 to July 14). The pilot included five online courses and 68 enrolled students. On March 22, 2012, Desire2Learn provided a face-to-face training session to faculty participating in the pilot. In the week of May 14, DEIT provided an online student orientation for students enrolled in the pilot courses. On June 27, 2012 an online survey was distributed to faculty and students to gather feedback about the pilot. Faculty were also invited to focus groups and personal interview sessions in the first two weeks of July 2012 to share their perceptions and experience.

FACULTY FOCUS GROUP AND INTERVIEW FINDINGS

All of the five participants would recommend DeSales University adopt D2L as its next LMS. When asked to rank ANGEL and D2L on a scale of 1 to 10, most gave D2L a two-point advantage considering its “technical potential” for taking online learning “to the next level.” ANGEL was rated at 6 and D2L 8 or 8.5.

In general, participants liked the interface of D2L, especially the display of tools, course content, the customizable course homepage and navigation. Participants identified these other strengths of D2L:

- Drag-and-drop course builder makes it easy to build course content
- Discussion statistics are helpful for grading
- Record audio and other convenient communication tools are pervasive in the system and easy to access
- Classlist allows monitoring students’ progress
- Gradebook is easier than ANGEL and has better visual display
- Offline grader is available for Apple products
Participants also pointed out some of the weaknesses of the D2L system. Rubrics are complicated to create and use; the email interface is not very user-friendly; the track changes function is not available in the dropbox area; and the layout of discussion forums and topics can be confusing. When importing existing course content from ANGEL, D2L was not able to process the content in the Learning Object Repository (LOR) or course polls. Another unanimous concern over the adoption of D2L is that it requires a steep learning curve for beginners, and faculty and students will need to spend considerable time on training to get used to the system.

During the pilot, faculty got a chance to integrate a third-party plagiarism tool TurnItin. Participants universally agreed Turnitin would be a great tool to integrate with DeSales’ next LMS because it helps instructors to quickly and easily detect possible plagiarism areas and could also serve as an effective deterrent.

**FACULTY SURVEY FINDINGS**

The faculty survey results are consistent with the findings of the focus group and interview sessions.

Faculty participated in the pilot were moderately or highly comfortable using ANGEL, DeSales’ current Learning Management System. Platforms of choice to access D2L included PC (50%) and Mac (50%). Apple iOS was the mobile platform used.

Content transfer from ANGEL was generally satisfactory except for the LOR and Course Polls. Of the faculty who chose to answer, 100% were satisfied with the overall design and navigation of D2L, and the Calendar, Classlist, Content, Email, Rubrics, and File Management tools. 100% were very satisfied with Course Builder, Discussions, Dropbox, Grades, News, Record Audio, and Turnitin. “Turnitin feature was amazing” and “grading or Assessment (in d2L) was definitely a step up from ANGEL.”

When having a problem with D2L, faculty was mostly likely to contact DEIT for support. In general, all participants were very likely to recommend D2L to be DeSales’ next LMS because it’s a more “modernized” system compared with ANGEL. Concerns about D2L are that it requires more time to learn, and may be overwhelming in the beginning.

**STUDENT SURVEY FINDINGS**

About half of the students (46.67% of the 68) participated in the pilot are experienced using LMSs for years and 60% had a high level of comfort for using ANGEL. During the pilot, over 73% of students accessed D2L more than 4 times a week using a PC (80%) or Mac (20%). Firefox and Internet Explorer were the most commonly used web browsers and Apple iOS was the preferred mobile platform for 33.33% of the students.

About half were satisfied with the D2L interface (design, navigation, page layout), and 46.67% thought it was “easy to use.” Among the tools provided, Dropbox was rated as satisfactory by 73.33% of the students, Content by 60%, and Discussions and Classlist were liked by 53.33%. Fifty three percent of the students were satisfied with the gradebook, and an additional 6.67% were
very satisfied. Although highly valued by faculty, Turnitin was rated as satisfactory by only 13.34% of the students (6.67% satisfied, and 6.67% very satisfied). 60% were neutral about Turnitin, and 20% were very unsatisfied.

When having a problem with D2L, students are most likely (40%) to seek assistance from instructor or other students or refer to the Student Help Guide (33.33%). Generally, 46.67% were satisfied and 6.67% were very satisfied with their overall D2L experience. And 60% of the students would recommend DeSales to adopt D2L as its next LMS.
Appendix VII: Canvas Pilot Report

OBJECTIVES

The objectives of this pilot study are:

- To discover and document faculty’s and students’ perceptions of Canvas.
- To identify technical issues faculty and students encounter when using Canvas.
- To identify administrative and instructional features and capabilities missing from Canvas.
- To determine LMS fit with various learning and teaching styles.
- To discover and document concerns about moving to a new LMS platform.

The findings from this research will be used to make informed decisions regarding DeSales University’s next learning management system (LMS).

PILOT PREPARATION AND EVALUATION PROCESSES

The Canvas pilot took place in ACCESS 2012 Summer Minimester 1 (06/18/2012-08/11/2012), MBA Summer Session (07/09/2012-08/15/2012), and MEd Summer Session (07/16/2012-08/27/2012). The pilot included four online courses and one hybrid course, with a total of 84 enrolled students.

Canvas provided an online training session for the DEIT Administrator on May 11, 2012, and another online training session to faculty participating in the pilot on May 18. During the weeks of June 11 and July 2, DEIT offered four online orientation sessions for students enrolled in the pilot courses.

On August 16, 2012 two online surveys were distributed to faculty and students to gather feedback about the pilot. The faculty were also invited to focus groups and personal interview sessions to share their perceptions and experience.

FACULTY FOCUS GROUP AND INTERVIEW FINDINGS

All of the five participants would not recommend DeSales University adopt Canvas as its next LMS. When asked to rank ANGEL and Canvas on a scale of 1 to 10, all ranked ANGEL higher than Canvas. ANGEL was rated 6 to 9 points and Canvas 5 to 8.

In general, participants thought the navigation of Canvas was easy and the site was organized. Participants identified these other strengths of Canvas:

- The HTML editor is easy to use with the full page view.
- The calendar tool is helpful.
- Drag-and-drop feature is nice.
- Rubrics are easy to create.
- Assignment interface makes grading easier.
- Video tutorials offered on instructure.com are helpful.

Participants also pointed out some of the weaknesses of the Canvas system. The color scheme is very dull; homepage tends to be cluttered by unimportant, trivial updates; rubrics are easy to create but hard to attach to an assignment or discussion; the Inbox (internal messaging) interface is very confusing; the reporting function is not as rigorous and sophisticated as ANGEL’s; the Discussion view is not user-friendly and it is difficult to identify unread messages or sort messages; it is very challenging to add images to quiz questions; the import of ANGEL archive didn’t work well making several instructors create the course content from scratch; the media recorder did not work for some Mac users; and students could not easily tell their progress using the gradebook.

**FACULTY SURVEY FINDINGS**

The faculty survey results are mostly consistent with the findings of the focus group and interview sessions.

All the participants had prior experience teaching with Blackboard or ANGEL. The frequency of assessing Canvas varied from 4 - 7 times a week to 11 times or more a week. PC was the platform of choice for 67% and Firefox was used by 100%. For those who accessed Canvas from a mobile device, Apple iOS and BlackBerry were the platforms they used.

All participants were unsatisfied with the transfer of their ANGEL course archives into Canvas (Very unsatisfied: 66.67%; Unsatisfied: 33.33%) because “there were several inconsistencies,” “document names did not copy correctly,” and “it was difficult to retrieve my files since there was no order or proper names when transferred to Canvas.” When it comes to the overall design of Canvas and its ease of use, participants were evenly split among being unsatisfied, neutral and satisfied. Two thirds were unsatisfied with the navigation, while when it comes to system and course homepage layout, two thirds reported “satisfied.” One participant commented that “Canvas is designed to be like Twitter or Facebook and lacks seriousness.”

Among the tools available in Canvas, Announcement and Calendar were satisfactory to all participants, and Grades, Inbox, and Modules were very satisfactory to 66.7%. One third of the participants were satisfied with Assignments, Collaboration, Files, People, Discussion, and Course Settings. Two thirds of the participants did not have the opportunity to assess the Quiz tool; however, for the one third that did use it, they were unsatisfied. One third of the participants did not try out the Record/Upload Media tool, and for those who used it, all were unsatisfied. Conferences tools, chat, and Turnitin Integration were not used by the participants. Syllabus was unsatisfactory to all the participants. Some comments regarding the tools include: “my students and I were dissatisfied with the few tools we used” and that “grading was great. The rubrics were helpful. Record/upload audio was not working in Firefox.”

As for the functions, 66.67% of the participants were satisfied with the content creation, assessment, and accessibility functions of Canvas. One third were unsatisfied with reporting and all were unsatisfied with communication.
When asked to rank the training and help resources regarding Canvas, 66.67% were unsatisfied with the Canvas online help guides while the same number were satisfied with the online faculty orientation session offered by a Canvas trainer. The participants were most likely (66.67%) to contact DEIT for assistance when they had a problem with Canvas, or refer to the Canvas online help documentation (33.33%).

In general, one third of the participants were very unsatisfied with their overall Canvas experience, one third were unsatisfied, and another one third were satisfied. And when asked how likely they would recommend DeSales to adopt Canvas as its next LMS, 33.33% selected “not at all likely”, 33.33% “not very likely”, and 33.33% “somewhat likely.” A few participants made the following comments regarding their overall Canvas experience: “There are many such specific instances that imply Canvas design was not thought out by instructors” and that “it seems Canvas is open to suggestions from users. So if changes are made in the areas mentioned above, I would recommend Canvas.”

**STUDENT SURVEY FINDINGS**

A vast majority of students who participated in the pilot had high (52.94%) or moderate (35.29%) level of comfort with DeSasles’ currently LMS ANGEL.

Of those who responded, a total of 71% accessed Canvas more than 7 times a week (7-10 times/week: 41.18%; 11 times or more/week: 29.41%); PC was the platform of choice for 88.24% and Internet Explorer was the mostly used browser (by 52.94%). For those who accessed Canvas from a mobile device, Apple iOS was the top choice (35.29%) of mobile platform.

More than 35% of the students were very satisfied with the overall Canvas design. Over 80% were either satisfied (64.71%) or very satisfied (17.65%) with the navigation of the site and 58.82% thought Canvas was easy to use.

Among the tools available in Canvas, Grades were rated as satisfactory by 82.36% of the students; Announcements, Assignments, and Syllabus were satisfactory to 70.59%; Notifications, Inbox, Files, and Modules were rated satisfactory by half of the participants. Tools that received lower ratings of satisfaction are Discussions (35.29%), Record/Upload Media (35.29%), Chat (29.41%), People (29.41%), Collaborations (29.41%), and Conferences (23.53%). Quizzes received the lowest rating of satisfaction (5.88%), and it is noteworthy that 70.59% of the participants selected “No Opportunity to Assess” for this tool.

As for help and support, 35.29% were satisfied with the Canvas Online Help Guides and the online student orientation. When having a problem with Canvas, 66.67% said they were mostly likely to first turn to their instructors or other students and 22.22% would contact DEIT for assistance.

Speaking about the overall Canvas experience, 23.52% of the students were unsatisfied, 17.65% were neutral, 52.94% were satisfied and 5.88% were very satisfied. And when asked “How likely is it that you would recommend DeSales to adopt Canvas as its next LMS,” 11.76% said “not at all likely,” 29.41% “not very likely;” 41.18% selected “somewhat likely” and 17.65% were “very likely.”