Report
UW-System LMS Exploratory Task Force 2012

August 1, 2012

Task Force Members

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Executive Summary

Introduction

The UW-System Learning Management System (LMS) Exploratory Task Force was appointed by the Learn@UW Executive Committee in August 2010 to study the status of the current LMS usage at UW campuses, to scan the LMS environment and emerging instructional technology environments, and to determine how Desire2Learn, Inc. (D2L) compares with other vendors in product direction. The Task Force delivered a report[1] August 2011, including a number of actionable recommendations.

The Learn@UW Executive Committee accepted all the recommendations and charged the Task Force to continue their work and provide an update the following year.

The Task Force established the following goals for 2011-2012:

- Expand the membership to include more learning technology support professionals (added two members of the LTDC)
- Continue to monitor the changing LMS and related technology landscape
- Study the state of content independence related to learning management systems
- Survey University of Wisconsin System (UWS) students regarding their perceptions and experience with an LMS.

This report encompasses the work of the Task Force based on the aforementioned goals.

Current Members of the LMS Task Force

- Barbara Barnet, UW-Platteville, Faculty (Chair - Statistics)
- Jeff Bohrer, UW-Madison, Madison Learn@UW Team Lead
- Rovy Branon, UW-Extension, Associate Dean
- Jane Henderson, UW-Stout, Director of Learning Technology Services
- Kerry Huberty, UW-Oshkosh, Instructional Development, LTDC chair (new)
- Peter Mann, Learn@UW Utility Service Manager
- Sharon McCarragher, UW-Milwaukee, *D2L* Site Administrator
- Leif Nelson, UW-Green Bay, Manager, Learning Technology Center (new)
- Andy Speth, Learn@UW Utility Support Team Lead
- Dan Voeks, Learn@UW Utility Technical Team Lead
- Jim Winship, UW-Whitewater, Faculty (Social Work)
- Lorna Wong, UWSA, Director of Learning Technology Development, Chair

Executive Sponsors

- Al Hartman, UW-Oshkosh, Chair, Learn@UW Executive Committee
- Ed Meachen, UWSA, Associate Vice President and CIO

[1] Available on the Learn@UW Executive Committee web site (http://www.wisconsin.edu/olit/luwexec/projects/exploratorytask/finalreport.pdf)

Three subgroups were formed to address the major areas of study:

- Student Use of LMS Survey- Sharon McCarragher & Lorna Wong , Co-chairs
- Content Independence Study – Dan Voeks, Chair
- LMS Landscape – Jeff Bohrer, Report Coordinator

Key Findings & Recommendations

1. The LMS market is constantly evolving with new players and business models. UWS needs to keep a close watch on the market during the next few years, as new options and related technologies emerge. UWS should stay agile and support coordinated LMS pilots, similar to current campus-initiated pilots, as they provide valuable information. The upcoming contract renewal with Desire2Learn will provide an opportunity to determine how the vendor aligns with the emerging trends of the LMS market and meets the needs of the UW educational community. A shorter-term contract will provide needed agility during the course of which an RFI should be initiated after the first year.

2. Content Independence, i.e., files and digital resources that are stored outside the LMS, is a concept worthy of our attention, yet evidence suggests that there is a dearth of scalable practices both within the UWS institutions and among our CIC (Committee on Institutional Cooperation) peers. Standards such as IMS Common Cartridge and Learning Tools Interoperability (LTI) can play a major role in content interoperability. The selection of standards-compliant technology platforms will enhance content portability. Increased user awareness of the benefits of content portability is needed, which may be accomplished via promotional campaigns. In addition to the issues around content independence, the size and delivery requirements of rich media content require attention. Use of this type of content in the instructional context continues to increase.

3. The results of the Student Use of LMS Survey validated information from other sources which suggests that overall, students are satisfied with both the learning management system as an educational tool and with the current provider. While students generally find the tools useful and easy to use, the survey results contain perspectives regarding desired improvement of individual tools, which should be shared with the vendor. Data from the survey results will be shared with individual campuses for further local analysis. It is notable that students feel the LMS is an integral part of their learning experience; as such, many students strongly expressed an expectation for ubiquitous use of the LMS in their courses, especially the Gradebook, and that faculty should use the LMS more often, more consistently, and more effectively. Increased and robust instructional support will encourage more instructors to use the LMS for their courses. Additionally, academic leadership needs to consider, from a policy perspective, students' requests that course materials continue to be available after the course has been completed.

4. Learning Analytics has garnered much interest and excitement in the higher education community with potential to assess academic progress, to predict student success, and to provide timely intervention. UWS needs to leverage the

wealth of information collected in the LMS as one important data source for meaningful analytics. Engaging in the D2L Learning Analytics pilot project is a first step to gaining access to the LMS data and exploring viable approaches for creating predictive models. Beyond the pilot, UWS needs to provide ongoing support for further investigation into predictive modeling, with deeper data mining for better understanding and planning of our education mission and student success.

Acknowledgement

The members of the LMS Task Force sincerely appreciate the opportunity to continue working with this group of highly motivated individuals with genuine interest in learning technology, displaying true professionalism throughout the year with creative ideas and dedication in meeting the established goals.

We appreciate the willing assistance of our LTDC and D2L Site-administrator colleagues at UW System campuses and CIC friends on the surveys regarding content independence and the student use of LMS.

We want to thank the Learn@UW Executive Committee for the opportunity to work on this project. We trust that the findings in this report will provide useful information as the Committee continues their efforts in strategic planning and advocacy for LMS technologies for the UW educational community.

The task force hopes to stay in tune with the ever-changing eLearning landscape and continue to contribute to the ongoing effort in defining the future direction of LMS use at the UW campuses.

LMS Landscape: Vendor Updates, Campus Pilots & Trends

As predicted in the last LMS report, the LMS market has experienced considerable activity in the past year. At many institutions, the anticipated end of support for *WebCT* and *Angel* resulted in the reexamination of LMS systems via detailed studies or RFPs. New players in the market are gaining traction, while traditional vendors are making bold moves in an attempt to lead and shape the LMS market in the next few years. The growth of online classes and programs, the acceptance of personal learning environments (PLEs) and open education resources (OERs) all play roles in making this space interesting, fast moving and occasionally chaotic.

Vendor Updates

Desire2Learn

Desire2Learn (D2L) has grown to a company of over 500 employees and has been restructuring its organization over the past 12 months. It is active in the IMS Global Consortium in establishing and promoting tool integration and content independence standards including LIS (Learning Information Services), LTI (Learning Tools Interoperability) and Common Cartridge. The company has been aggressively developing its Learning Analytics platform, and has begun offering Data Warehouse and Reporting tools to both self-hosted and vendor-hosted clients. D2L is also planning to release its predictive analytic modeling with the "Student Success System" early in 2013.

On the mobility front, Desire2Learn continues to enhance both the mobile web interface for its *Learning Environment (LE)* and the *CampusLife* mobile platform. In addition, D2L now provides expanded mobile extensibility options through its "Valence" API toolkit and Mobile SDK. *Assignment Grader*, a tablet app for the iOS platform built on Valence, was released in March with an interesting business model -- selling directly to users via the Apple app store. D2L has recently announced its *Smart Education* partnership with IBM, although the impact of this endeavor is yet to be determined. The company has also announced an Internet2 partnership for *Capture*, its live/on-demand webcasting presentation offering.

D2L intends to launch the *My Desire2Learn* service as early as fall 2012; for students who have graduated or who have left their D2L campus, this service will provide long-term access to their personal D2L *ePortfolio* materials and presentations. *My Desire2Learn*, a hosted cloud service, will be offered free of charge to existing users of the D2L *ePortfolio* tool. This service, combined with the fact that the D2L *ePortfolio* is integrated with the learning platform, brings added value to both individuals and institutions using this solution.

Blackboard

Blackboard (Bb) gained attention when it acquired *MoodleRooms* and *NetSpot* in March 2012, as well as by hiring Charles Severance, a founder and longtime leader of the *Sakai* community.

In a public statement, Blackboard CTO Ray Henderson announced the new strategy that the company is undertaking to acknowledge that the LMS is very important in the educational life cycle, and that Blackboard understands that a one-size solution does not fit all, and intends to position itself as a "services" and "consulting" business. Thus, in addition to continuing development of the *Blackboard Learn* product, the company will continue to support *Angel* beyond 2014, and will contribute to the open source communities of *Moodle* and *Sakai*. These developments are of particular interest to the educational community but the degree to which Blackboard's strategy impacts the LMS market is yet to be determined.

Instructure

Instructure has grown its user base during the past year, reporting a total of 170 client institutions as of May, 2012. Founder Josh Coates believes the future of the LMS is usability, and he believes the Instructure *Canvas* LMS embodies that philosophy.

Instructure employs the cloud hosting approach, which is advertised to require no downtime during upgrades and to provide flexible scalability as major competitive advantages. Like most major learning management systems, Instructure *Canvas* offers both LTI and a native API for integration with external tools. The blend of a commercial vendor's resources with an open source framework is touted as having advantages over proprietary technology. With the purported zero-downtime upgrade process, Instructure claims that features can be continuously and incrementally rolled out. *Canvas* has drawn attention among institutions of Higher Education largely due to its user interface and usability.

Pearson

Pearson continues to support its *eLearning Studio* product, but has rolled out a new free LMS called *OpenClass*. The claim is that the traditional and current LMS paradigm is dead -- that the platform is primarily useful for administrative tasks, but does not contribute to pedagogical advancement in building teaching and learning communities. *OpenClass* is free and Pearson reported adoption by over 3500 clients worldwide since its rollout at the Educause annual conference in 2011. The main interest in the product lies outside traditional higher education institutions. It was originally introduced with a dependency on Google Apps for Education, but this is no longer a requirement in its new version. Pearson's stated vision is to use *OpenClass* as a front end for the *Pearson Exchange*, a marketplace for paid and free educational content. At this time, *OpenClass* is relatively immature in its functional capabilities to present as a viable competitor for the major LMS players, but the framework is worth investigating for its community-building and collaborative functionalities.

Textbook Publishers

Textbook publishers/content providers have staked out a variety of strategies to enter the digital distribution of content with the widest reach to students. Many offer easy integration with various learning management systems, in addition to supplementary online material and learning activities.

eTextbook distributors offer free "readers" (applications) on many platforms, including mobile devices. eText adoption at an institutional level is beginning to emerge.

Courseload pilots

Courseload is a digital content delivery platform through which textbook publishers and instructors can provide online versions of their materials.

UW-Madison participated in a pilot of *Courseload* during the spring 2011 semester in conjunction with a larger pilot with other peer institutions, involving six courses and 700 student participants. In 2012-13, campus pilots of the *Courseload* digital text platform will be occurring at UW-Madison, UW-Milwaukee, and UW-Stout.

There were a number determining factors that contributed to choosing *Courseload* for these campuses, including:

- Availability of eTexts from multiple vendors
- Access provisioned through *D2L* using LTI standards
- User analytics

CourseSmart pilot

CourseSmart is an online platform for eText delivery. As a venture of 5 large textbook publishers (Cengage, Pearson, John Wiley, Macmillan and McGraw-Hill), *CourseSmart* includes more than 90% of the core textbooks in use today in North American higher education. *CourseSmart* integrates with *D2L* via LTI standards. UW-Eau Claire and UW-Whitewater are investigating pilot opportunities. Both institutions, like many others in UW-System, have textbook rental programs, which makes the introduction of eTextbooks more challenging.

Trends

New Ecosystem

A recent EDUCAUSE publication, "*7 Things You Should Know About LMS Alternatives*[2]," portrays the current learning technology landscape as a continuum with the LMS on one end and an array of personal tools for students and instructors on the other end. While the LMS provides some core tools, beyond the LMS there exists an ever-expanding array of tools for media creation, communication and collaboration. The role of the traditional LMS will vary greatly for students and instructors leveraging such tools.

[2] Source: http://net.educause.edu/ir/library/pdf/ELI7062.pdf

Demand for LMS Integration

Many LMS experts believe the future of the LMS is a series of robust and secure APIs allowing for the deep integration of previously disaggregated instructional, learning and administrative technologies. While this vision might be years off, UWS campuses are beginning to see interest from users in connecting the current LMS with a variety of other technologies, both instructional and administrative.

External instructional tools such as online homework systems (e.g. Cengage's *WebAssign*), cloud-based discussion tools (*Piazza*), classroom response systems (*iClicker*, *Turning Technologies*), and content authoring tools (*Respondus*, *StudyMate*) are already in use by many instructors. However, in order to use these tools in conjunction with the LMS, instructors often find themselves spending a significant amount of time managing user data, importing spreadsheets, manually uploading files, and dealing with potential errors and idiosyncrasies. These challenges are exacerbated in large enrollment courses. Robust integration with the LMS has the potential to resolve many of these problems.

There are many cases of non-instructional LMS use throughout UW System, including employee training, outreach, student organizations, departmental administration use, and advising. There are practical advantages to using an LMS for these purposes, such as user progress tracking, sharing resources in a secure environment, and utilizing the collaborative tools built into the system. Issues surrounding non-instructional use involve user support and account management.

Learning Analytics

According to the Horizon Higher Education Report 2012[3]: Learning Analytics refers to the interpretation of a wide range of data produced by and gathered on behalf of students in order to assess academic progress, predict future performance, and identify potential issues.

Learning Analytics has moved beyond the interest of for-profit institutions and has become a topic that has drawn intense attention within a short year. The Horizon Report placed Learning Analytics on a medium-term horizon for adoption in two to three years. Major projects to explore strategies and common solutions (supported by the Gates Foundation and HP Catalysts Initiatives), as well as institutional projects, such as "Signals" at Purdue University and "Check My Activity" at the University of Maryland at Baltimore County, have spurred interest in higher education.

All major LMS providers, instructional technologies new in the market, and publishers either provide or are in the process of developing learning analytics tools associated with their products.

While LMS transaction data can provide a wealth of information regarding student behaviors, it is important to recognize that meaningful predictive analytics must

[3] Source: http://www.nmc.org/publications/horizon-report-2012-higher-ed-edition

include data from other relevant sources such as student information systems or advisor records.

The Learn@UW Executive Committee has endorsed a pilot project with the D2L *Learning Analytics* product. During the spring 2013 semester, the D2L *Student Success System* (S3) will be implemented in 5-10 courses on three campuses – UW-Colleges Online, UW-Madison, and UW-Platteville. Recognizing that the development of learning analytics will require multiple years and additional resources, the same three campuses have requested and have been awarded a UWS Growth Agenda Grant to expand the project beyond the D2L pilot to include a broader scope of investigation and participation.

Campus Pilots

Moodle

UW-Madison Campus *Moodle* Service
In spring 2012, UW-Madison decided to provide a fully-supported campus *Moodle* service. The new service follows years of significant use within the College of Engineering and School of Business. A number of continuing education programs and other departments have also used *Moodle* extensively in recent years. *Moodle*'s flexible architecture allows for modules to be added and customized to support continuing education's needs for accepting payments, provisioning access, generating completion certificates, and delivering customized reports.

Goals of this campus initiative include

- Consolidating as many as a dozen distributed *Moodle* installations into a common and centralized service offering, managed by the College of Engineering
- Providing *Moodle* as an option to any instructor

The new service will be rolled out in phases during 2012-13 with access for any UW-Madison instructor available in summer 2013. Approximately 300-400 credit courses are currently using *Moodle* at UW-Madison.

Instructure *Canvas*

UW-Madison, Wisconsin School of Business
The Wisconsin School of Business is piloting *Canvas* to assess its "innovative course delivery options to support the School's desired learning outcomes." Competencies and mobile access have been highlighted as two key areas of emphasis.

The school has selected four instructors to pilot the system in 4-6 classes during 2012-13. The courses include a mix of pre-admission, undergraduate, graduate, face-to-face, and online. While much of the course content will be converted from existing course sites in *Moodle* and *D2L*, instructional designers will work with the faculty on new exercises to take advantage of specific *Canvas* functions.

UW-Stout, Vocational Rehabilitation Institute

UW-Stout Vocational Rehabilitation Institute (SVRI), a non-credit outreach program, is in contract negotiations with Instructure. The goal is to launch *Canvas* in January 2013. UW-Stout IT will not be providing IT support to SVRI in the launching and maintenance of their relationship with Instruture *Canvas*, but will instead be monitoring the process and relationship in an informal manner. The insight gained by the UWS LMS Task Force was utilized to assist SVRI in determining an appropriate solution to meet their training needs.

Pearson *OpenClass*

UW-Extension Pilot

UW-Extension's Continuing Education, Outreach & E-Learning (CEOEL) division has been working as a Pearson design partner and conducting some light pilot tests of the free LMS *OpenClass* (currently in beta status). *OpenClass* is less than a year old and is still not "ready for prime time." It continues to hold promise and UWEX will follow its developments over the coming months.

These elements are unique to *OpenClass* and make it a viable platform for continued exploration:

- Free – no license costs or fees involved
- Cloud hosted – no server hardware/software to purchase and manage
- Core of the system is increasingly a Facebook-like social network system
- The eventual addition of a "store" within the LMS may allow free and paid multimedia content to be added directly to a course
- Open APIs (Application Program Interfaces) allow developers to extend the platform
- Integration with Google Apps (for Google App campuses)
- Contemporary and easy-to-use interface

While *OpenClass* has a great deal of potential to break new ground in the LMS market, the product is still in the early stages of development, and its more traditional LMS elements are not as well developed. For example, the discussion forums are extremely simple compared to *D2L* and the grade book lacks the functionality of most other LMSs. There is speculation that Pearson may not develop these, but may instead rely on university developers to use open APIs to create and integrate more sophisticated features.

UWEX is approaching *OpenClass* with the hope that, as new features roll out in summer and fall 2012, it could very well become a robust social network platform for campuses; Pearson could then "back into" more traditional LMS functions. It might even be feasible to look at *OpenClass* as an addition to a more traditional LMS, as it could possibly contribute social networking features that other systems lack.

Content Independence Study

This subgroup focused on the recommendation in the previous report, which stated, "Explore and improve content independence for purpose of easing reuse and any potential future LMS transitions." The activities involved identifying the meaning of the term "content independence" and the collection of information and experiences from those who support both faculty and instructional staff.

Content independence, for the purpose of this report, encompasses three broad related areas:

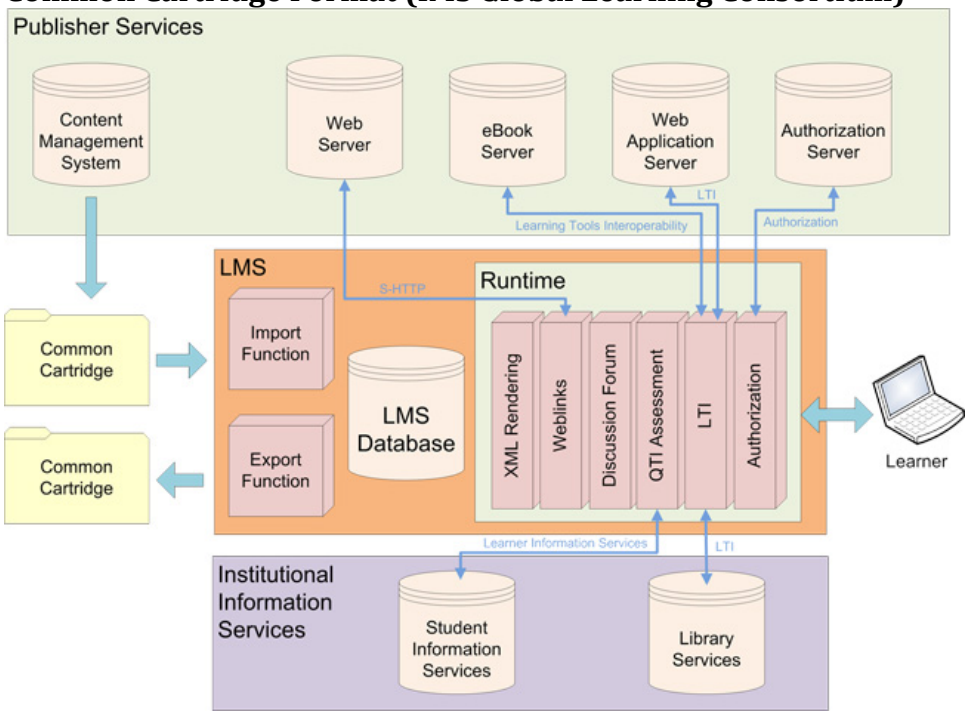
1. Functional capabilities of learning management systems to support ad hoc and bulk export and import of course materials and structures via established standards (e.g. SCORM, IMS Common Cartridge).

2. Functional capabilities of learning management systems to support the emerging instructional technology paradigm of the LMS as a hub/platform through which independently hosted learning tools and materials are tightly or loosely coupled with core LMS tools to deliver a richer learning experience.

3. An assortment of formal or informal usage and design practices employed by instructors and instructional support staff with the effect of promoting independence and portability of instructional materials.

The following diagram illustrates a general vision of a learning technology ecosystem facilitated by these aspects of content independence.

Common Cartridge Format (IMS Global Learning Consortium)[4]



[4] Source: http://www.imsglobal.org/cc/commoncartridge.html

Digital Repositories

Digital repository technology (also commonly known as learning object repository - LOR) provides a means for users to centrally store content files and provides some mechanism for federated discovery and access-controlled sharing of resources. While conceptually attractive, the management of stored assets is typically rather complex. Furthermore, many institutions that have implemented a locally hosted repository (including some peer *D2L* institutions) did not find significant faculty adoption.

A special task force on UWS LOR presented a study to the L@UW Executive Committee in 2009; the study confirmed assumptions that that supporting an LOR for storage would be costly, and that faculty did not have an interest in sharing their proprietary content beyond their classes.

With the increasing interest in open learning resources and the availability of Web 2.0 products and cloud services, the LOR may get new attention or may begin to present itself in a new form. Currently Desire2Learn's LOR and Pearson's Equella (which integrates with Blackboard, *Moodle* and *Sakai*) are two prominent vendor-supported LOR solutions.

It will be interesting to watch future developments of repository products and track whether there is a change in attitude among faculty about sharing content. A centrally supported repository strategy could be a viable option to manage content independence from the LMS.

Export/Import

The capability to export course materials and structures is often regarded as an important aspect of portability.

The current industry standard for LMS content portability is the Common Cartridge (CC) packaging format, developed by the IMS Global Consortium.

From the IMS Common Cartridge FAQ[5]:

> *Common Cartridge solves two problems. The first is to provide a standard way to represent digital course materials for use in online learning systems so that such content can be developed in one format and used across a wide variety of learning systems . . . The second is to enable new publishing models for online course materials and digital books that are modular, web-distributed, interactive, and customizable. . . The learning materials can be online, offline, or both.*

D2L is certified by IMS as compliant with v1.0 of the Common Cartridge specification – although notably, the capability to export in Common Cartridge format is not currently available. *D2L* does provide export capabilities (both ad hoc and bulk), but this is delivered through a custom format based on an early precursor to the Common Cartridge specification (IMS Content Packaging v1.1).
D2L competitors providing full Common Cartridge (import & export) capabilities include (source: IMS Global Consortium[6]):

[5] Source: http://www.imsglobal.org/cc/ccfaqs.html

- *Blackboard Learn* (CC v1.1 compliant, import & export)
- *Angel* (CC v1.0 compliant, import & export)
- *Canvas* (CC v1.1 compliant, import & export, CC v1.2 compliant import only)

Major LMS competitors NOT certified CC compliant include:

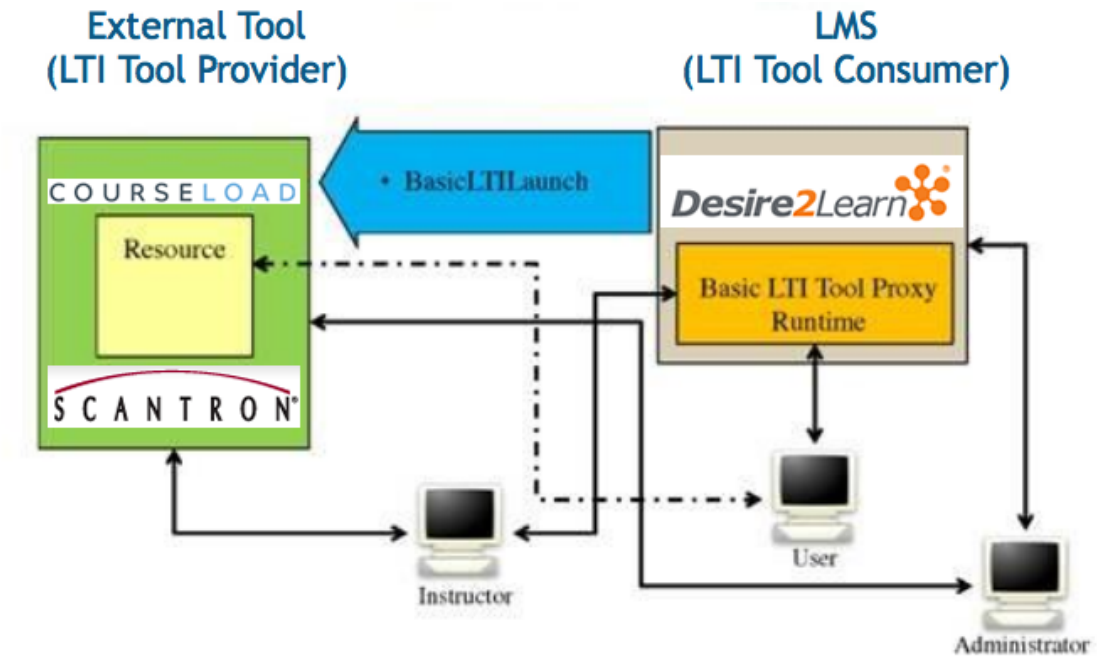
- *Sakai* (no import or export) – although "*Sakai* Lesson Builder" provides CC import.
- *Moodle* (no import or export)

Integrated Tools/Interoperability

Learning Tools Interoperability (LTI) is a standard developed by the IMS Consortium which provides a method to easily integrate the LMS with external learning tools. The external tool receives user data and application context information from the LMS, for example: name, email address, course offering information. The integration may also create the necessary user accounts and course spaces.

The LMS user (e.g., instructor, student) is presented with a link to the LTI-integrated tool from within the LMS and upon selection, the user accesses the tool without needing to re-authenticate (i.e., "single sign-on" type functionality). The tool may manifest as either a separate browser window/tab or as content embedded within a frame in the LMS. Through LTI integration, the user enjoys a seamless experience while using external tools that extend the capability of the Learning Environment.

The following diagram depicts an example of the LTI workflow facilitating integration of *D2L* with two external tools -- *Courseload* (eText provider) and Scantron *Class Climate* (online course evaluation system).



[6] Source: http://www.imsglobal.org/cc/statuschart.cfm

D2L (along with *Blackboard Learn*, *Sakai*, *Moodle*, and *Canvas*) implements v1.0 of the LTI standard (formerly known as Basic LTI). *D2L* was the first LMS product to implement LTI 1.0.

At present, Instructure *Canvas* is the only LMS to implement LTI v1.1, which adds additional capabilities for grade objects to be returned to the LMS from integrated tools.

Existing and potential future LTI integrations

The Learn@UW service currently employs LTI to integrate with the following external tools:

- *Courseload* – UW-Madison eText pilot (Spring 2012 and Fall 2013)
- Scantron *Class Climate* – UW Colleges online course evaluation

There are many opportunities to extend the use of the LMS. Many campus contacts have received consultations and additional requests continue to emerge. The following represents external tools supporting LTI that UW-System campus contacts have expressed interest in integrating with *D2L*:

- *CourseSmart* – eTextbook and digital materials
- *MediaSite* (Sonic Foundry) – webcasting/lecture capture tool
- Barnes & Noble *Nook* – Digital texts and materials
- *BadgeStack* – social learning tool used to acknowledge achievements
- *Piazza* – online Q&A site (similar to a wiki/forum tool)
- *NetTutor* – online tutoring service

Content Independence Survey – LTDC

In Spring 2012, a survey was distributed to UW Learning Technology Development Council members and UW Learn@UW/D2L site administrators. The objective of the survey was to collect information regarding campus-specific practices that support content independence. Those who completed the survey include site administrators, instructional designers, and technical support staff.

Most campuses report some practices that support content independence but none of these practices are broadly implemented, even at the campus level. These practices include the following (in approximate order from most to least common).

- Personal web space on a campus server: Instructors are given space on the campus web server to post files, which are linked to from within the D2L *Learning Environment*. Typically, instructors have access to their files for editing. A disadvantage is that these files are generally open to the public.

- Streaming servers for media: A few campuses use the UW streaming services supported by UW Madison, while others use campus-hosted streaming servers. The UW Madison streaming service is helpful but the upload and link processes are not necessarily intuitive.

- Kaltura *MediaSpace*: Campuses participating in the Kaltura pilot house media files on the *MediaSpace* server. Those respondents listing *MediaSpace* seem to appreciate and value the service.

- *Xythos*: A few UW campuses initially explored use of *Xythos* as an independent file storage solution for *D2L* course content. However, this approach was generally found infeasible. Users found it problematic and difficult to use effectively.

- *CommonSpot*: This content management tool offers features similar to personal web space listed above. It seems too early to determine if this will be effective or not.

- *Wordpress*: This blog tool has gained popularity for ease of use and clean interface. A few campuses are exploring campus-hosted *Wordpress*.

- Google apps: A few campuses report using *Google Docs* or *Google Apps*.

Most campuses recommend content independent practices to their instructors but do not actively promote the practices. All agree that adopting a content independent approach is at the discretion of the instructor, and very few instructors seem interested. Most instructors appear satisfied with the *D2L*-centric model and see no reason to change. Finally, many campuses freely admit that they do not know, and probably cannot know, the precise extent to which their instructors incorporate content independence but most say that the number is likely very small.

Content Independence Survey - CIC

We invited our peers in the Committee on Institutional Cooperation (CIC) to share their story and engage in an interactive discussion about the activities and experiences with hosting/storing content outside of the LMS.. The message was directed to the Learning Technology working group and we received seven (7) responses from the following institutions. The respondents currently hold titles that cover a wide gamut, including Instructional Technology Support, Professor, Director of Learning Services, Business Analyst, and eLearning Strategist.

- Indiana University
- Michigan State University
- Penn State University
- University of Illinois at Urbana - Champaign
- University of Iowa
- University of Michigan
- University of Nebraska (Lincoln)

The following themes emerged from the aggregate responses. We will share this with the respondents and further engage in a conversation on the topic of content independence.

General themes

1. A set of common products/services is in use by the campuses in the CIC
2. Most content independence solutions are utilized by specific faculty or units and not generally adopted campus-wide
3. Core and edge IT units provide support to faculty and instructors
4. Common practices have yet to take hold and flourish
5. Shared interest with the liberties that content independent solutions would afford – easier transition to another LMS platform, continuity of instruction, open educational directives
6. The most prevalent content for which a solution has been deployed involves rich media (video, audio)
7. The community is willing and open to engage in discussions about experiences, opportunities, challenges, and strategies

Solutions available to campus community

There is a fair degree of commonality of products and services in use among our peers. Some UW System institutions use a majority of the solutions; however, the extent to which they are offered as a common or centralized offering varies.

Technology	CIC Peers
Internet file storage	*SharePoint*, *Xythos*, *Box*
Personal web sites	Campus web service, *Drupal*, *Google Sites*, *Movable Type, Plone, WordPress*
Publisher hosted content	Based on faculty choice, eText initiative (McGraw Hill, MacMillan, Wiley, Harvard Business Publishing, Flatworld Knowledge)
Other	Blog, institutional repository, *iTunes U*, Kaltura, *MediaSpace*, video content through local solution, wiki

The channels that our peers use to promote and advertise the solutions cross the spectrum from "high touch" individual consultations to "broad reach" mass communications via web sites and email lists. Engaging campus partners and stakeholders is a primary vector through which the benefits and availability of the solutions are communicated. In addition, as it pertains to the LMS, direct integration with solutions such as iTunes U exposes the opportunities to the user community and allows them to use a familiar interface to access the tool/service.

The intrinsic utility may be readily discernible by some, and others may experience challenges with adapting to and learning new tools. Careful and instructive guidance is necessary to help shepherd the community through the myriad of options and develop common practices and knowledge.

Support for solutions

Many of the aforementioned technologies are familiar to those within the instructional technology communities, and a campus-supported service, regardless of where the solution is hosted (on-premise or cloud), provides assurance that help is at hand. The manner in which they are supported varies considerably, largely due to the decentralized manner in which the solutions are deployed (e.g., library, academic units, etc.).

The central IT (Information Technology/Instructional Technology) unit generally provides support to students, while campus teaching centers offer training, consultation and support to faculty and instructors. This model is quite similar to the manner in which UW institutions distribute responsibility for supporting teaching and learning technologies.

The diversity of solutions engenders both opportunities (e.g., needs of the educational community are addressed, innovation is encouraged, etc.) and challenges (lack of consistency with support, solutions age and are in need of replacement). We didn't ask direct questions about support provided by vendors from which cloud or SaaS solutions are delivered and how these solutions may align with local support resources.

Practices

It is evident from the responses that there is a lack of consistent practices and guidance regarding content independence. Specific campus departments and units may offer a solution (e.g., Learning Object Repository, Content Management System); however, it is not presented as a campus-wide strategy. The most prevalent option exercised is the hosting of multimedia content outside of the LMS – either via local campus streaming media service or a commercial platform (e.g., Kaltura*, iTunes U, YouTube*). The explanation for such options being utilized is likely due in part to the disk space required to host a sizable volume of video as well as the specialized needs for delivering the content in a reliable and consistent manner.

The challenge is to provide access to the resources in a manner that is simple and easy to use. Integration with the LMS presents the user community with a familiar interface with which to engage in course creation and content digestion. The real opportunity is extending the capability of the learning environment without

requiring the user to navigate to a different site, provide separate credentials, and make the connection to their content from their course.

The UW System is currently engaged in the second year of piloting Kaltura's rich media platform, which offers a platform that provides specialized features – content ingesting, transcoding, hosting, tagging, and streaming – all through an interface that allows the owner/creator to manage his/her assets effectively. We see tremendous potential as this type of platform provides the instructors and learners with unfettered access to tools needed to create, deliver, and share rich media content that isn't dependent upon the LMS.

The absence of well-defined and common practices indicates that there are opportunities to take a closer look at technologies and tools that foster content independence.

Flip of the coin – pros and cons

The respondents shared their thoughts about the advantages and disadvantages with their existing content independence solutions, which are summarized.

Advantages:

- Faculty retain control of the content they develop
- Improved user experience through integrated services
- Reduction of costs to run the LMS (e.g., storage)
- Logical separation between course and personal content
- Singular location of content, which prevents replication and redundancy (i.e., extra cost – labor and infrastructure resources)
- Continuity of access to content when LMS is unavailable during upgrades/maintenance
- Improved ability to transition to another LMS solution
- Addresses the "open educational mission" of specific campus units

Disadvantages:

- Content management systems inherent in the existing LMS poses challenges with future transition to another platform
- Lack of control from an institutional perspective
- Education necessary to acclimate users to different toolset and importance of hosting content independent of the LMS
- Difficulty with supporting the broad needs of a diverse community
- Lack of cross-system learning analytics
- Inconsistency of support models

Successes and unexpected outcomes

The respondents offered specific "success stories" that encompass different perspectives – teaching and learning, and support of instructional technologies. There have been positive outcomes with leveraging external services to host multimedia content of the user community, especially those that integrate directly with the LMS. Specific disciplines are able to use the tools that best suit their needs and educational mission.

Successful outcomes do not generally occur without learning some difficult lessons. Our peers expressed concern about the lack of mobility between LMS platforms (e.g., vendor lock-in), challenges presented with integrating between various systems, and the lack of flexibility with specific systems that necessitates instructional design support.

Final thoughts

As a group, the respondents have extensive experience and knowledge in the instructional technology field that is very consistent with the University of Wisconsin system institutions. We plan to coordinate a discussion with the respondents to explore the content independence topic further and identify opportunities to continue to share our respective explorations and experiences.

Student Use of LMS Survey

Introduction

While UWS institutions have been using the current learning management system, *Desire2Learn* (*D2L*), extensively for the past nine years, there has been no comprehensive assessment focused on students' feedback regarding *D2L*. With the rapidly changing climate in learning management systems (LMS), it is vital to keep pace with the evolving needs and expectations of our student users. Conducting a survey with a focus on students' perception of the LMS was a key recommendation of the LMS Task Force Report in 2011.

The main goals of this project were to get additional data regarding:

- Student overall satisfaction with the LMS as an educational tool
- Student perception of the usefulness & usability of the current LMS features
- Frustration students face using the LMS features
- Suggestions and expectations for a better student experience

Methodology

The Student Survey Subgroup designed a survey instrument to cover the goals above, adaptable for a wide audience of students in different disciplines, different years in school, and those taking courses delivered online, blended, and in traditional classrooms. The survey instrument was intentionally kept short and concise to avoid student survey fatigue. The instrument was tested for clarity and relevance by several groups of students on different campuses.

The survey was conducted in April 2012. All UWS institutions were strongly encouraged to participate. Each campus LTDC representative was tasked to distribute the survey. Marketing and distribution methods were chosen by each campus, and included: Email invitation to a broad or targeted audience, link to survey on the *D2L* login or MyHome page, and various other strategies. We wanted to reach the widest audience to achieve the best possible response rate.

The subgroup conducted the project with limited resources and a tight timeline, in addition to their regular campus responsibilities. The cooperation from the campus partners and the dedication of the subgroup yielded interesting results. These findings also validated some anecdotal observations and a call for further investigation and action.

Overall Results

A total of 6097 responses were collected from all 13 four-year campuses, UW Colleges and UW Extension. Of the respondents, 99.2% use *D2L* as their primary LMS; therefore the responses to survey items specifically about the LMS can be considered to be mainly about *D2L*. 75% of respondents indicated their primary use of the LMS is in F2F classes, 9% in blended, and 16% in totally online. About 25% of the respondents are first time users of the LMS. Upper classmen are more heavily

represented, based on their years in school (16% freshman, 17% sophomore, 24% junior and 30% senior, 12% graduate).

Overall, the students indicate that they are very satisfied with *D2L*. They generally find the features of *D2L* easy to use. Over 70% agreed that each of the components of *D2L* was either easy or very easy to use, with most tools in the 80% - 90% range. Likewise, the students found each *D2L* tool to be useful; over 75% of the respondents said all but two of the *D2L* tools were useful or very useful. The two exceptions were "calendar" and "online live lectures[7]," however a large percent (56% and 77%, respectively) of the students had not used those two tools. In general, students found *D2L* to be effective for completing their class work.

Students were asked about various possible features that, if they were to become available, had the potential to make the LMS a better tool for learning. More than 50% of the respondents expressed a desire to access course-related materials after the end of the course; this included both the student-created and the instructor-uploaded materials.

When asked what would make the LMS easier to use, the items that received more than 50% of the positive responses were:

- Access all grades on one screen
- Access all due dates for assignments on one screen, and
- Access reminders about assignments on one screen.

Students were given a list of features that are commonly available in social media sites, and asked whether they would use those features if they were available in the LMS. Surprisingly, all listed features received less than 50% positive responses from the respondents. The highest rated feature in this category was "collaborate with others using document sharing" (43%).

Students were also asked what features they would like to use with their mobile devices. The responses indicated they would mainly like the ability to:

- Check grades (75.3%)
- View course content (63.5%)
- View course announcements (62.8%)

Students are very interested in using the LMS in all their courses. Nearly 95% of the respondents answered that it was important to have course materials posted in the LMS, and 96% of the responses indicated it is important for them to track how they are doing in a course through the LMS.

Comparative Responses

Responses were compared among class delivery method (face-to-face, blended, totally online) and year in school. The overall opinions were largely consistent across class type. The only significant differences were to the extent that one group positively expressed their opinion compared to another. For example, Totally

[7] Live lecture is not an LMS tool, however the format is gaining importance in online delivery of content. Thus, the question was asked as an aspect of the overall online content experience.

Online students tended to be the most positive group about the LMS calendar tool and online lectures. Graduate students tended to be the most enthusiastic about features that help with collaboration.

In response to the survey questions about potential new features, freshmen tended to choose social-networking type features more often, whereas graduate students were more likely to choose features that aided them in doing the work in the course, such as having assignments in one place and the ability to access course materials after the course has ended.

First time LMS users tend to use "newer" features more often, and like them more than the more experienced users. This includes the calendar and online office hours. In most cases, first time users and totally online students liked similar features, with one big exception: first time users tended not to be as interested in collaboration-focused features, although they still viewed them positively.

Responses were also compared among the different majors or disciplines, however few results were significant, due to the large number of different categories. Students in the sciences tend to find the discussion area less useful than the respondents in other disciplines.

Key Findings & Themes

As 99% of the students surveyed are using *D2L*, these findings reflect student experience with this learning management system. Following are some key findings and themes derived from the quantitative data and supported by the comments in the open questions.

Features that need improvement

Although students in general perceive *D2L* as an integral part of their learning experience and are comfortable with *D2L's* tools and features, some students rated certain features to be "Not Useful" or "Totally Useless": Discussion (9.1%), Course Email (6.9%), Online Quizzes (3.6%), Be able to tell how I am doing (3.0%) Check Grades (1.8%),

The following major features were rated "Difficult" or "Very Difficult" to use by some respondents: Check grades (4.5%), Dropbox (5.0%), Online Quizzes (5.3%), and Discussion (9.3%).

Text comments from open-ended questions reveal a number of significant themes regarding recommended improvement of the current feature set in *D2L*:

- Improved navigation and interface, especially Discussion boards
- Grades and course access on one page
- Grades for all courses on one page
- Full access on mobile devices
- Notification of updates
- Good collaboration tools – *Google Doc*-like, wikis
- Easy IM tools with fellow students

- Single sign-on for access to multiple systems in addition to *D2L*
- Students did not express keen interest in social media-like interface in LMS

Very specific requests were related to the Gradebook. Although most students found it both useful and easy to check their grades in the LMS, many expressed a desire for easier access – arranging all grades on one page instead of accessing grades by course, accessing grades easily on mobile devices, and requiring all courses to have grades posted on *D2L*.

Regarding the Discussion feature, many commented positively on usability, but a relatively high number of comments indicated the interface is clumsy, with too many clicks, or that it is confusing to use. Some comments pertain to the pedagogical use of online discussions in their courses and not the *D2L* interface itself. Those respondents felt that online discussions are overused or are used in a way that does not enhance their learning experience in the course.

Better Communication Tools

Students in general desire better communication tools, akin to those they are accustomed to in the Web 2.0 social environment they live in, including better Instant Messaging tools, more instant notifications about course activities, and better tools for collaboration with peers.

Desire for Social Media-like interface and tools

Surprisingly, students did not show a strong desire for social interface. Less than 30% of responses were in favor of facebook or other social media like features, except for tools that facilitate collaboration.

I will use these features if available in my LMS	Percentage 'Yes'
Share profile pictures	20%
Create or join groups (as in Facebook)	22%
See and comment on a wall or news feed	23%
Selectively share video, pictures or links.	21%
Create or join real-time text or video chats	17%
Integrate with external social networks (as in FB, twitter etc)	20%
Find other students, faculty or groups with similar academic interest	32%
Collaborate with others using documents sharing (e.g. Goolge Dcos)	43%
Collaborate with others using real-time audio, video or text chats	21%

In fact, some of the most emphatic feedback requested the opposite:

> *"Trying to make it like facebook. / PLEASE... / DO NOT MAKE THIS LIKE FACEBOOK OR ANOTHER SOCIAL NETWORKING SITE!"*

> *"I like the system: Using it for educational purposes without social networking sites (facebook, twitter, etc) cluttering the page."*

Mobile Access

Interest in Mobile access was primarily expressed as a desire for notifications or quick grade-checking. Mobile access to the full LMS learning environment is likely to grow as mobile devices become more ubiquitous.

LMS effect on learning experience

We included a set of questions to get a pulse on how the LMS actually affects the students' learning experience.

Over 90% of students feel the LMS tools help them organize & utilize course materials:

	Strongly agree/ agree	Do not use
View syllabus Online	97%	12%
View News & Announcements	91%	13%
View Readings & online Material	95%	17%
View lectures outlines & notes	95%	17%
View practice exams & quizzes	85%	21%
View calendar & schedules	80%	46%

Over 80-90% students agree that the LMS provide more interactions with instructors:

	Strongly agree/ agree	Do not Use
Submit Assignments online	92%	12%
View Grades online	94%	11%
Receive Feedback online	85%	15%
Attend online Office hours	67%	68%
Ask questions before or after class	78%	25%

Over 70% of students agree that the LMS facilitates interaction with their classmates in the following areas:

	Strongly Agree/ Agree	Do not use
Small Group Online Discussion	78%	37%
Full Class online discussion	75%	13%
Group Assignment Online	70%	43%
Peer Review of work online	74%	50%

Access to course material beyond

It is notable that students want access to course material beyond the course completion date; 62.9% of students requested continued access to instructor-

provided materials and 70.5% of students requested continued access to their own coursework. This function is not lacking because of technical limitations of the LMS; current practice on most campuses eliminates student access to course materials when the term of the course is over, or allows the instructor to determine when access will end. Feasibility of continuing course access beyond the semester should be explored and discussed through proper administrative channels.

Ubiquitous use of LMS

While the survey was designed to measure student satisfaction with the LMS, a large number of comments indicated that many students believe strongly that faculty should be using the LMS more fully. Students are asking that the LMS be used for ALL classes; many want the use of the LMS Gradebook to be mandatory. Students also feel some faculty do not know how to use the system most effectively.

A few typical comments about what they like the least about the system:

> *"What I like least is how little many professors and students use the options that are available on LMS. Perhaps making the system more user friendly would assist in this because as it stands now very few professors here at XXXX campus use it outside of the 100-level classes."*

> *"I would love it if all of the professors used D2L and ALL of its features. It would make things easier not only for me, but all of the students in the class, I believe. And, I'm sure that once the professors get used to using D2L, they will find it easier than what they are doing right now and it will help them stay more organized."*

> "*Instructors fail to make use LMS to its full potential. Online quizzes? What's that?? Calendar with due dates, etc.--never used by any professor I've ever had. Submitting assignments in an online dropbox? Never happened. / / A required orientation to the many "wonders" of the LMS might encourage instructors & professors to make better use of it. Sure, it's a little time consuming to set up everything, but once the course is set up, it should be only a matter of updating due dates. / / I teach at a private career college & we use an online "ecourses" program that probably works in a similar manner. The conveniences it provides to both instructor and students are great."*

> *"When instructors do not update grades or included needed information."*
> *"when instructors do not use all features"*
> *"When instructors don't put enough information online."*

> *"D2L is only as good as the instructor using it. Many times I've had problems with instructors not keeping pages organized like the grade section or the discussion section. When the grade section is unorganized, it is the most frustrating thing I have ever come across in college so far. For a person who values grades and wants to keep track of them, the instructor keeping this section organized is a must!"*

Recommendations

The LMS Task Force believes the survey results indicate that students are generally satisfied with the LMS, its features, and the value the system provides. It is obvious that students expect to use an LMS as part of their educational experience. It is important that the LMS continue to function effectively as part of the course delivery process, and meet the diverse needs of students. As most students are adept with web applications, and internet connectivity is almost ubiquitous compared to a few years ago, UWS needs to note the rising expectations of students as we plan our future, with regard to learning management systems.

The LMS Task Force therefore recommends:

- UWS should share findings regarding feature improvement with Desire2Learn, Inc., our current vendor, and set clear expectations for improvement or feature redesign in the problem areas noted in the above section

- UWS should consider students' expectations for feature improvements, mobility and navigation/interface, in future explorations or RFPs for LMS systems

- UWS shall share campus-specific data with each campus's leadership and learning technology support staff for local review of their students' needs and expectations

- The Learn@UW Executive Committee shall assist in recommending to UWS academic leadership that the LMS, especially the Gradebook feature, be used ubiquitously in all courses, from F2F to totally online. Strong commitment of learning technology support resources and encouragement to hesitant faculty can affect the culture of LMS adoption.

Appendix 1 – Content Independence Survey

The Task Force constructed and distributed web surveys to collect information pertaining to the area of content independence from the representatives that serve on the UW System Learning Technology Development Council (see below). A slightly modified version of this instrument was shared with the Learning Technology subgroup of the Committee on Institutional Cooperation (CIC)[8].

Survey Instrument
The UW System Learning Management System (LMS) Task Force is gathering information about the processes and strategies campuses might have for housing content outside of the LMS. Content Independence typically involves storing and managing files outside of the LMS and linking to these files from the Content or other areas of one or more LMS courses. Content files are thus easily retrievable or reused outside the LMS environment.

The LMS Task Force is interested in the best practices on your campus, Content Independence options that are currently in place, had been tried but since dropped, and are under consideration. There is value in knowing what did not work; when completing this survey, please include those attempts that failed as well as those that seem to be working. We invite LTDC-reps, D2L site-admins, or others who provide close support for instructors using D2L and related LMSs to participate in this survey. We are hoping for one or two responses from each campus. Please take a moment to answer the following questions. Thank you in advance for your time.

UWS LMS Task Force – 2012
Please contact Leif Nelson nelsonl@uwgb.edu if you have any questions.

Q1 Your Campus affiliation

Q2 Your role at your institution (e.g., faculty development, instructional design, technology support, etc.)

Q3 What types of content independence solutions are available at your campus? E.g., personal (instructor) website, dropbox, Xythos, learning object repositories, etc. (do not include content that is exclusively housed by a publisher)

Q4 How are the solutions indicated above supported on your campus?

Q5 How are the solutions indicated above promoted or recommended on your campus?

[8] Headquartered in the Midwest, the Committee on Institutional Cooperation (CIC) is a consortium of the Big Ten member universities plus the University of Chicago (see http://www.cic.net for more information).

Q6 Are content independence practices widely used on your campus?

- Only among a few individuals
- Many faculty and departments
- Near ubiquitous
- Not sure
- Other _____

Q7 How are instructional "rich media" (e.g., web video) resources that are delivered through your LMS managed on your campus? (Specify details in the associated text boxes. If an option is not used, so indicate in the text box.)

	Much Less	Less	More	Much More
Campus or UW Streaming media server (please specify)				
Other campus-supported web service (please specify)				
YouTube or other commercial web-hosting service				
Uploaded to D2L course files				
Other				

Q8 What are the advantages of your content independence solution(s)?

Q9 What are the disadvantages of your content independence solution(s)?

Q10 What are the successes of your campus content independence solution(s)?

Q11 What are the things that didn't work or may be improved in your content independence solution(s)?

Q12 What other comments, suggestions, observations, etc can you share that might be of interest to the LMS Task Force regarding content independence?

Appendix 2 – UWS Students' Use of LMS Survey

Dear University of Wisconsin System students:
Please take about 5 minutes to fill out the following anonymous survey to gather your feedback on the use of a Learning Management System (LMS) – such as D2L (D2L), also known as Learn@UW or another specific name that your campus might have branded, or other products such as *Moodle*, etc. . Your input will help us as we strive to offer the best learning environment for your academic success.

LMS Task Force -2012
University of Wisconsin System
Office of Learning & Information Technology
Please direct any questions to Lorna Wong (lwong@uwsa.edu)

Q1 I have read and understand the above information and give my consent to participate in this survey.

- ❍ Yes, I want to take the survey.
- ❍ No, I do not want to take the survey.

Q2 My UW institution affiliation:
- ❍ UW Colleges
- ❍ UW Colleges Online
- ❍ Extension
- ❍ Eau Claire
- ❍ Green Bay
- ❍ La Crosse
- ❍ Madison
- ❍ Milwaukee
- ❍ Oshkosh
- ❍ Parkside
- ❍ Platteville
- ❍ River Falls
- ❍ Stevens Point
- ❍ Stout
- ❍ Superior
- ❍ Whitewater

Q3 I primarily use the following Learning Management System (LMS) in my classes this semester:
- ❍ D2L (aka - D2L, Learn@UW, Learn@UW-Stout, etc.)
- ❍ Moodle (aka eCOW2 etc.)
- ❍ Other _____

Q4 The majority of courses I take are:

- ❍ In the classroom (face to face/F2F)
- ❍ Blended (meet face-to-face, some sessions online)
- ❍ Totally online (I do not go into a classroom)

My Experience in using the LMS (Learn@UW, D2L, Moodle, etc.)

Q5 How important is it to have my course materials (syllabus, readings, etc.) available in my primary LMS?

- ❍ Very Important
- ❍ Important
- ❍ Somewhat unimportant
- ❍ Not at all Important

Q6 How easy is it to use these features of my primary LMS?

	Very Easy	Easy	Difficult	Very Difficult	Do not Use
Login to System	❍	❍	❍	❍	❍
Navigation & Layout	❍	❍	❍	❍	❍
Calendar	❍	❍	❍	❍	❍
Content	❍	❍	❍	❍	❍
Course Email	❍	❍	❍	❍	❍
Discussion Board	❍	❍	❍	❍	❍
Checking Grades	❍	❍	❍	❍	❍
Live Chat	❍	❍	❍	❍	❍
Online Quizzes	❍	❍	❍	❍	❍
Dropbox/Turning in Assignments	❍	❍	❍	❍	❍
Online Lecture (Live)	❍	❍	❍	❍	❍

Q7 How useful to me are these features of my primary LMS?

	Very Useful	Useful	Not Useful	Totally Useless	Do not use
Calendar	❍	❍	❍	❍	❍
Content	❍	❍	❍	❍	❍
Course Email	❍	❍	❍	❍	❍
Discussion Board	❍	❍	❍	❍	❍
Checking Grades	❍	❍	❍	❍	❍
Live Chat	❍	❍	❍	❍	❍
Online Quizzes	❍	❍	❍	❍	❍
Dropbox/Turning in Assignments	❍	❍	❍	❍	❍
Online Lecture (Live)	❍	❍	❍	❍	❍
Online Lecture (Recorded)	❍	❍	❍	❍	❍

Q8 How important is it to be able to tell how I am doing in a course using the LMS?

- ❍ Very Important
- ❍ Important
- ❍ Somewhat unimportant
- ❍ Not at all Important

The EFFECTIVENESS of the LMS (Learn@UW, D2L, Moodle, etc.) in helping with my learning.

Q9 The LMS is effective in helping me organize and utilize my course materials.

	Strongly Agree	Agree	Disagree	Strongly DIsagree	Do not use
View syllabus online	❍	❍	❍	❍	❍
View News & Announcements	❍	❍	❍	❍	❍
View readings and online materials before class	❍	❍	❍	❍	❍
View lecture outlines and notes after class	❍	❍	❍	❍	❍
View practice exams and quizzes	❍	❍	❍	❍	❍
View calendar or schedule of events pertaining to my class	❍	❍	❍	❍	❍

Q10 The LMS is effective in providing more interaction with my instructors.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Do not use
Submit assignments online	❍	❍	❍	❍	❍
Receive feedback online	❍	❍	❍	❍	❍
View grades online	❍	❍	❍	❍	❍
Attend online office hours	❍	❍	❍	❍	❍
Ask questions before or after class	❍	❍	❍	❍	❍

Q11 The LMS is effective in helping me collaborate with my classmates.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Do not use
Small group online discussion	❍	❍	❍	❍	❍
Full class online discussion	❍	❍	❍	❍	❍
Group assignments online	❍	❍	❍	❍	❍
Peer review of work online	❍	❍	❍	❍	❍

How can the LMS become a BETTER tool for learning?

Q12 My LMS would serve me better if I could : (Check all that apply)
- ❑ Share my course work with my classmates, advisors, and others in my campus community
- ❑ Share my course work outside my campus community
- ❑ Continue to access instructor provided course material after the course ends
- ❑ Continue to access my own course work after the course ends
- ❑ Contact classmates after the course ends
- ❑ Contact instructors after the course ends

Q13 My LMS would be easier to use if I could : (Check all that apply)
- ❑ Change the default layout of my entry page
- ❑ Change the color or theme
- ❑ Rearrange page elements (as in iGoogle, Yahoo)
- ❑ See grades for some or all of my courses on one screen
- ❑ See due dates and assignments for all my courses on one screen
- ❑ See reminders about some or all of my assignments on one screen
- ❑ Receive updates via text on my phone
- ❑ Have course calendar entries available in my personal calendar

Q14 I will use these features if available in my LMS : (Check all that apply)
- ❑ Selectively share my profile picture and personal information
- ❑ Create or join groups (as in Facebook)
- ❑ See and comment on a wall or newsfeed (as in Facebook)
- ❑ Selectively share video, pictures, or links
- ❑ Create or join real-time text or video chats
- ❑ Integrate with external social networks (as in Facebook, Twitter, Google+, LinkedIn, Flickr)
- ❑ Find other students, faculty, or groups with similar academic interests
- ❑ Collaborate with others using document sharing (e.g. Google Docs, wikis)
- ❑ Collaborate with others using real-time audio, video or text chats

Q15 If I have a mobile device (smartphone, tablet, etc), I will use it to:
- ❑ Get general campus information
- ❑ Communicate with my instructors
- ❑ Communicate with my fellow students
- ❑ View course announcements
- ❑ View course content
- ❑ Do my course work (e.g. submit assignments, take a quiz, join discussion)
- ❑ Check my grades
- ❑

Additional Comments

Q16 Overall, regarding the specific LMS I use, what I like MOST is:

Q17 Overall, regarding the specific LMS I use, what I like LEAST is:

Q18 If there are technologies outside the LMS that you use to help you learn or to manage your academic life, please tell us about them and how they help you.

Q19 This is my first year in using an LMS.
- ❍ Yes
- ❍ No

Q20 My current total number of college credits earned:
- ❍ 0-30 (Freshman)
- ❍ 31-60 (Sophmore)
- ❍ 61-90 (Junior)
- ❍ Over 90 (Senior)
- ❍ Graduate
- ❍ Other (certificate, non-credit)

Q21 My current major or program of studies is (check the closest area of studies)
- ❍ Business
- ❍ Education
- ❍ Fine Arts
- ❍ Humanities (English, History, Languages, etc)
- ❍ Health Related (Medicine, Nursing, Physical Therapy, etc)
- ❍ Social Sciences (Political Science, Psychology, etc)
- ❍ Sciences / Technology / Engineering / Mathematics
- ❍ Other Professional Studies
- ❍ Not listed
- ❍ Undeclared

Appendix 3 – Student LMS Survey Report

This report presents a summary of the distribution of responses on each question of the survey. In addition, the report is organized into five sections to highlight the different areas of study. The questions deviate somewhat from the order presented in Appendix 2 for more logical grouping and easier readability.

- Survey Respondent Demographics
- Overall Experience with LMS
- Ease of Use & Usefulness of LMS Tools
- Effectiveness of LMS in helping my learning
- LMS can be a better tool for learning

Statistical analyses were performed to compare demographic groups: Year in School, Primary use of LMS, First time users. The tests used were either a Chi-square Contingency Table test or Fisher's Exact Test (For Yes/No questions). Any differences noted below are significant at an a=0.05 level.

For further analysis suggestions or questions, please contact Lorna Wong (UWSA) and Barb Barnet (UW-Platteville).

I. Survey Respondent Demographics:

Q2 My UW institution affiliation

		Frequency	Percent
UW Institution:	UW Colleges	181	3.0
	UW Colleges Online	170	2.8
	Extension	30	.5
	Eau Claire	517	8.5
	Green Bay	501	8.2
	La Crosse	1073	17.6
	Madison	118	1.9
	Milwaukee	605	9.9
	Oshkosh	674	11.1
	Parkside	247	4.1
	Platteville	268	4.4
	River Falls	378	6.2
	Stevens Point	518	8.5
	Stout	288	4.7
	Superior	119	2.0
	Whitewater	410	6.7
	Total	6097	100.0

Q3 I primarily use the following Learning Management System (LMS) in my classes this semester:

		Frequency	Percent	Valid Percent
Primary LMS:	Desire2Learn	6036	99.0	99.2
	Moodle	14	.2	.2
	Other	37	.6	.6
	Total	6087	99.8	100.0
Missing	System	10	.2	
Total		6097	100.0	

Q4 The majority of courses I take are:

		Frequency	Percent	Valid Percent
Type of Class:	In the classroom (F2F)	4504	73.9	74.0
	Blended	595	9.8	9.8
	Totally online	985	16.2	16.2
	Total	6084	99.8	100.0
Missing	System	13	.2	
Total		6097	100.0	

Q19 This is my first year in using an LMS:

		Frequency	Percent	Valid Percent
First Year Using LMS:	Yes	1348	22.1	25.4
	No	3969	65.1	74.6
	Total	5317	87.2	100.0
Missing	System	780	12.8	
Total		6097	100.0	

Q20 My current total number of college credits earned:

		Frequency	Percent	Valid Percent
Number of Credits:	0-30 (Freshman)	855	14.0	16.0
	31-60 (Sophomore)	946	15.5	17.7
	61-90 (Junior)	1241	20.4	23.3
	Over 90 (Senior)	1587	26.0	29.8
	Graduate	653	10.7	12.2
	Other (certificate, non-credit)	50	.8	.9
	Total	5332	87.5	100.0
Missing	System	765	12.5	
Total		6097	100.0	

*Respondent categories by year in school according to credit hours (Freshman, Sophomore, Junior Senior, Graduate, Other)

Comparing Type of Class to Year in School, there was a significant difference (p = 0): The 'Graduate' and 'Other students' were more likely to be in totally on-line courses. Students in their first year using an LMS were also more often in Totally online classes (20.6%) and less likely to be in blended classes (6.8%) than students not in their first year of using an LMS.
When compared to Year in School (p=0): 89% of the Freshmen said this was their first year using an LMS.

Q21 My current major or program of studies is:

		Frequency	Percent	Valid Percent
Current Major or Program:	Business	907	14.9	17.0
	Education	599	9.8	11.2
	Fine Arts	175	2.9	3.3
	Humanities	323	5.3	6.1
	Health Related	903	14.8	16.9
	Social Sciences	680	11.2	12.8
	Sciences	920	15.1	17.3
	Other Professional Studies	244	4.0	4.6
	Not listed	428	7.0	8.0
	Undeclared	153	2.5	2.9
	Total	5332	87.5	100.0
Missing	System	765	12.5	
Total		6097	100.0	

II. Overall User experience with LMS

Q5 How important is it to have my course materials (syllabus, readings, etc.) available in my primary LMS?

		Frequency	Percent	Valid Percent
How important is it to have my course materials available in my primary LMS?	Very Important	4127	67.7	71.9
	Important	1368	22.4	23.8
	Somewhat Important	208	3.4	3.6
	Not at all Important	34	.6	.6
	Total	5737	94.1	100.0
Missing	System	360	5.9	
Total		6097	100.0	

When compared to Year in School, there is a significant relationship (p=0): 'Graduate' Students chose Very Important and Important at a higher rate than the others (total of 95.7%).
'Totally online' students overwhelmingly chose Very Important (93%).

Q8 How Important is it to be able to tell how I am doing in a course using the LMS?

		Frequency	Percent	Valid Percent
How important is it to be able to tell how I am doing in a course using the LMS?	Very Useful	4531	74.3	80.2
	Useful	937	15.4	16.6
	Not Useful	143	2.3	2.5
	Totally Useless	40	.7	.7
	Total	5651	92.7	100.0
Missing	System	446	7.3	
Total		6097	100.0	

'Freshman' (18.5%) are more likely to choose Useful and 'Graduate' (1.6%) and 'Other' students (4.3%) a little more likely to choose Totally Useless (p = .001).
Totally online students chose Very Useful 88.6% of the time.

III. Ease of Use & Usefulness of LMS Tools

A. Ease of Use of LMS Tools

Q6 How EASY is it to use these features of my primary LMS?

Login		Frequency	Percent	Valid Percent
How easy is it to use the Login?	Very Easy	3777	61.9	65.5
	Easy	1817	29.8	31.5
	Difficult	129	2.1	2.2
	Very Difficult	40	.7	.7
	Total	5763	94.5	100.0
Missing	System	327	5.4	
Do Not Use		7	.1	
Total		6097	100.0	

Navigation & Layout		Frequency	Percent	Valid Percent
How easy is it to use the Navigation and Layout?	Very Easy	2169	35.6	37.8
	Easy	3084	50.6	53.7
	Difficult	423	6.9	7.4
	Very Difficult	68	1.1	1.2
	Total	5744	94.2	100.0
Missing	System	334	5.5	
Do Not Use		18	.3	
Total		6097	100.0	

When compared to Year in School, Graduate students were less likely to choose Very Easy (33.4%) and more likely to choose Very Difficult (2.3%) with p=.017.

Calendar		Frequency	Percent	Valid Percent
How easy is it to use the Calendar?	Very Easy	819	13.4	30.4
	Easy	1292	21.2	48.0
	Difficult	465	7.6	17.3
	Very Difficult	116	1.9	4.3
	Total	2692	44.2	100.0
Missing	System	339	5.6	
Do Not Use		3066	50.3	
Total		6097	100.0	

Note that over half of the students state that they do not use the calendar.
More of the totally online students answered this question (60%) and they were the most likely to say using the calendar is Very Easy (36.4%).

Content		Frequency	Percent	Valid Percent
How easy is it to use the Content?	Very Easy	2499	41.0	43.8
	Easy	2889	47.4	50.6
	Difficult	282	4.6	4.9
	Very Difficult	42	.7	.7
	Total	5712	93.7	100.0
Missing	System	340	5.6	
Do Not Use		45	.7	
Total		6097	100.0	

Course Email		Frequency	Percent	Valid Percent
How easy is it to use the Course Email?	Very Easy	1780	29.2	40.6
	Easy	2094	34.3	47.8
	Difficult	406	6.7	9.3
	Very Difficult	101	1.7	2.3
	Total	4381	71.9	100.0
Missing	System	338	5.5	
Do Not Use		1378	22.6	
Total		6097	100.0	

'Graduate' (35.6%) and 'Other' students (23.1%) were less likely to choose Very Easy ($p = .008$).

Discussion Board		Frequency	Percent	Valid Percent
How easy is it to use the Discussion Board?	Very Easy	1930	31.7	38.1
	Easy	2573	42.2	50.7
	Difficult	489	8.0	9.6
	Very Difficult	80	1.3	1.6
	Total	5072	83.2	100.0
Missing	System	339	5.6	
Do Not Use		686	11.3	
Total		6097	100.0	

Totally online students were more likely to choose Very Easy (46.7%).

Check Grades		Frequency	Percent	Valid Percent
How easy is it to Check Grades?	Very Easy	3027	49.6	53.3
	Easy	2381	39.1	41.9
	Difficult	216	3.5	3.8
	Very Difficult	59	1.0	1.0
	Total	5683	93.2	100.0
Missing	System	329	5.4	
Do Not Use		85	1.4	
Total		6097	100.0	

Live Chat		Frequency	Percent	Valid Percent
How easy is it to do a Live Chat?	Very Easy	471	7.7	27.7
	Easy	771	12.6	45.4
	Difficult	331	5.4	19.5
	Very Difficult	127	2.1	7.5
	Total	1700	27.9	100.0
Missing	System	353	5.8	
Do Not Use		4044	66.3	
Total		6097	100.0	

Live Chat has an extremely high non-response rate, indicating the feature is not used often.
Graduate students were more likely to choose Very Difficult (13.4%) with p = .037.

Online Quizzes		Frequency	Percent	Valid Percent
How easy is it to do Online Quizzes?	Very Easy	2316	38.0	44.1
	Easy	2586	42.4	49.3
	Difficult	295	4.8	5.6
	Very Difficult	49	.8	.9
	Total	5246	86.0	100.0
Missing	System	341	5.6	
Do Not Use		510	8.4	
Total		6097	100.0	

Freshmen are more likely to choose Very Easy (50.4%), however Graduate students are less likely to (38%), with p = .023.

Dropbox		Frequency	Percent	Valid Percent
How easy is it to use the Dropbox?	Very Easy	2670	43.8	47.5
	Easy	2641	43.3	47.0
	Difficult	262	4.3	4.7
	Very Difficult	44	.7	.8
	Total	5617	92.1	100.0
Missing	System	343	5.6	
Do Not Use		137	2.2	
Total		6097	100.0	

Totally online students were more likely to choose Very Easy (53.1%).

Online Live Lecture		Frequency	Percent	Valid Percent
How easy is it to use Online Live Lectures?	Very Easy	327	5.4	30.8
	Easy	455	7.5	42.8
	Difficult	206	3.4	19.4
	Very Difficult	75	1.2	7.1
	Total	1063	17.4	100.0
Missing	System	344	5.6	
Do Not Use		4690	76.9	
Total		6097	100.0	

Note: Online live Lecture is not an LMS feature, but is often delivered as online content.
First year LMS users tended to choose easy more often (50.2%). Note that there is a significant number (76.9%) of students who do not use Online Live Lectures.

Online Recorded Lectures		Frequency	Percent	Valid Percent
How easy is it to use Online Recorded Lectures?	Very Easy	610	10.0	30.1
	Easy	1028	16.9	50.7
	Difficult	302	5.0	14.9
	Very Difficult	86	1.4	4.2
	Total	2026	33.2	100.0
Missing	System	348	5.7	
Do Not Use		3723	61.1	
Total		6097	100.0	

Note: Online Recorded Lecture is not an LMS feature, but is often delivered as online content through the LMS.
Note that 61.1% of the students do not currently use online recorded lectures. They may not be available to them.

B. Usefulness of LMS Tools

Q7 How USEFUL to me are these features (tools) of my primary LMS?

Calendar		Frequency	Percent	Valid Percent
How useful is the Calendar?	Very Useful	694	11.4	29.9
	Useful	852	14.0	36.7
	Not Useful	579	9.5	25.0
	Totally Useless	194	3.2	8.4
	Total	2319	38.0	100.0
Missing	System	363	6.0	
Do Not Use		3415	56.0	
Total		6097	100.0	

Freshmen and Sophomores are less likely to choose totally useless (about 5%), Juniors and Seniors more (about 10%), p = .017. First year LMS users chose Very Useful at a higher rate (34.6%).

Totally Online students were the most likely to choose Very Useful (49.4%).

Content		Frequency	Percent	Valid Percent
How useful is the Content?	Very Useful	4216	69.1	74.6
	Useful	1373	22.5	24.3
	Not Useful	48	.8	.8
	Totally Useless	17	.3	.3
	Total	5654	92.7	100.0
Missing	System	354	5.8	
Do Not Use		89	1.5	
Total		6097	100.0	

Course Email		Frequency	Percent	Valid Percent
How useful is the Course Email?	Very Useful	2063	33.8	49.2
	Useful	1711	28.1	40.8
	Not Useful	325	5.3	7.7
	Totally Useless	97	1.6	2.3
	Total	4196	68.8	100.0
Missing	System	356	5.8	
Do Not Use		1545	25.3	
Total		6097	100.0	

'Seniors', 'Graduate', and 'Other' students were more likely to choose Not Useful or Totally Useless (p = 0).

Discussion Board		Frequency	Percent	Valid Percent
How useful is the Discussion Board?	Very Useful	2100	34.4	42.9
	Useful	2233	36.6	45.6
	Not Useful	448	7.3	9.2
	Totally Useless	111	1.8	2.3
	Total	4892	80.2	100.0
Missing	System	356	5.8	
Do Not Use		849	13.9	
Total		6097	100.0	

'Graduate' Students are more likely to choose Very Useful (56.2%), p = 0.
There was a huge difference between 'Face-to-Face' and 'Totally online' students. Only 33.8% of the 'Face-to-Face' students said the Discussion Board is very useful, whereas 69.5% of the 'Totally online ' students did. The 'Blended' students were in between at 55.3%.

Checking Grades		Frequency	Percent	Valid Percent
How useful is Checking Grades?	Very Useful	4417	72.4	78.0
	Useful	1139	18.7	20.1
	Not Useful	79	1.3	1.4
	Totally Useless	28	.5	.5
	Total	5663	92.9	100.0
Missing	System	352	5.8	
Do Not Use		82	1.3	
Total		6097	100.0	

'Graduate' students (38.6%), 'Other 'students (23.7%) and 'First time LMS users' (23.4%) are more likely to choose Useful (p = .007).

Live Chat		Frequency	Percent	Valid Percent
How useful is the Live Chat?	Very Useful	323	5.3	21.7
	Useful	610	10.0	41.0
	Not Useful	402	6.6	27.0
	Totally Useless	153	2.5	10.3
	Total	1488	24.4	100.0
Missing	System	365	6.0	
Do Not Use		4244	69.6	
Total		6097	100.0	

'Juniors' are more likely to choose Totally Useless (15.2%), 'Seniors' more likely to choose Not Useful (33.9%), with p = .02. 'First time LMS users' are less likely to choose Totally Useless (6.9%).

'Blended' and 'Totally online' students were more likely to choose either Very Useful or Useful, 'Face-to-Face' students were more likely to choose Not Useful (about 65%) or Totally Useless (41.9%).

Online Quizzes		Frequency	Percent	Valid Percent
How useful are Online Quizzes?	Very Useful	2750	45.1	53.4
	Useful	2179	35.7	42.4
	Not Useful	163	2.7	3.2
	Totally Useless	53	.9	1.0
	Total	5145	84.4	100.0
Missing	System	371	6.1	
Do Not Use		581	9.5	
Total		6097	100.0	

'Graduate' students were less likely to choose Very Useful (45.6%) and more likely to choose more Useful (48.7%) and Not Useful (5.3%), with p = 0.
'Totally online' students were more likely to say Very Useful (62.5%).

Dropbox		Frequency	Percent	Valid Percent
How useful is the Dropbox?	Very Useful	3651	59.9	65.4
	Useful	1796	29.5	32.2
	Not Useful	97	1.6	1.7
	Totally Useless	37	.6	.7
	Total	5581	91.5	100.0
Missing	System	364	6.0	
Do Not Use		152	2.5	
Total		6097	100.0	

'Totally online' students choose Very Useful at the highest rate (72.0%).

Online Live Lecture		Frequency	Percent	Valid Percent
How useful are Online Live Lectures?	Very Useful	364	6.0	35.2
	Useful	414	6.8	40.0
	Not Useful	197	3.2	19.0
	Totally Useless	60	1.0	5.8
	Total	1035	17.0	100.0
Missing	System	368	6.0	
Do Not Use		4694	77.0	
Total		6097	100.0	

Note: A very high percent of students who do not use online live lectures.
'Graduate' students were more likely to choose Very Useful (46.8%) with p = .028.
'Totally online' students chose Very Useful at the highest rate of any group (47.5%).

Online Recorded Lectures		Frequency	Percent	Valid Percent
How useful are Online Recorded Lectures?	Very Useful	809	13.3	41.9
	Useful	852	14.0	44.1
	Not Useful	213	3.5	11.0
	Totally Useless	58	1.0	3.0
	Total	1932	31.7	100.0
Missing	System	361	5.9	
Do Not Use		3804	62.4	
Total		6097	100.0	

'Totally online' students chose Very Useful at the highest rate of 51.0%.

IV. Effectiveness of LMS in helping my learning

A. Course organization:

Q9 The LMS is effective in helping me organize and utilize my course materials.

View Syllabus Online		Frequency	Percent	Valid Percent
The LMS is effective in helping me organize and utilize my course materials: View syllabus online.	Strongly Agree	3744	61.4	68.8
	Agree	1583	26.0	29.1
	Disagree	83	1.4	1.5
	Strongly Disagree	32	.5	.6
	Total	5442	89.3	100.0
Missing	System	619	10.2	
Do Not Use		36	.6	
Total		6097	100.0	

'Other' students (9.3%) were more likely to choose Strongly Disagree (p = .001).
'First time LMS users' were more likely to choose Agree (32.8%).

View News & Announcements		Frequency	Percent	Valid Percent
The LMS is effective in helping me organize and utilize my course materials: View news and announcements.	Strongly Agree	2716	44.5	51.5
	Agree	2126	34.9	40.3
	Disagree	360	5.9	6.8
	Strongly Disagree	74	1.2	1.4
	Total	5276	86.5	100.0
Missing	System	631	10.3	
Do Not Use		190	3.1	
Total		6097	100.0	

View Readings & Online Materials		Frequency	Percent	Valid Percent
The LMS is effective in helping me organize and utilize my course materials: View readings and online materials.	Strongly Agree	3151	51.7	59.3
	Agree	1924	31.6	36.2
	Disagree	195	3.2	3.7
	Strongly Disagree	45	.7	.8
	Total	5315	87.2	100.0

Missing	System	591	9.7	
Do Not Use		191	3.1	
Total		6097	100.0	

View Readings & Online Materials		**Frequency**	**Percent**	**Valid Percent**
The LMS is effective in helping me organize and utilize my course materials: View lecture outlines and notes.	Strongly Agree	2937	48.2	58.7
	Agree	1800	29.5	36.0
	Disagree	204	3.3	4.1
	Strongly Disagree	60	1.0	1.2
	Total	5001	82.0	100.0
Missing	System	631	10.3	
Do Not Use		465	7.6	
Total		6097	100.0	

View Readings & Online Materials		**Frequency**	**Percent**	**Valid Percent**
The LMS is effective in helping me organize and utilize my course materials: View practice exams and quizzes.	Strongly Agree	2932	48.1	61.1
	Agree	1636	26.8	34.1
	Disagree	171	2.8	3.6
	Strongly Disagree	61	1.0	1.3
	Total	4800	78.7	100.0
Missing	System	631	10.3	
Do Not Use		666	10.9	
Total		6097	100.0	

Graduate students were less likely to choose Strongly Agree (53.3%), p = .03.

View calendar or schedule of events		Frequency	Percent	Valid Percent
The LMS is effective in helping me organize and utilize my course materials: View calendar or schedule of events.	Strongly Agree	1491	24.5	45.7
	Agree	1304	21.4	40.0
	Disagree	326	5.3	10.0
	Strongly Disagree	143	2.3	4.4
	Total	3264	53.5	100.0
Missing	System	632	10.4	
Do Not Use		2201	36.1	
Total		6097	100.0	

Almost half of the students did not answer this question indicating there is a large amount of non-use for this feature.

'First time LMS users' were less likely than other groups to Disagree or Strongly Disagree (11.3%). 'Totally online' students chose Strongly Agree 54.9% of the time; however Face-to-Face students only did 42.2%.

B. Interaction with Instructor

Q10 The LMS is effective in providing more interaction with my instructors.

Submit assignments online		Frequency	Percent	Valid Percent
The LMS is effective in providing more interaction with my instructors: Submit assignments online.	Strongly Agree	2932	48.1	55.1
	Agree	1991	32.7	37.4
	Disagree	316	5.2	5.9
	Strongly Disagree	83	1.4	1.6
	Total	5322	87.3	100.0
Missing	System	648	10.6	
Do Not Use		127	2.1	
Total		6097	100.0	

Freshman (5.2%) and First Year LMS users (5.5%) were less likely to choose Strongly Disagree and Disagree, but Juniors were more likely to do so (8.7%), with p = .029. Totally online student chose Strongly Agree 64.0% of the time.

Receive Feedback online		Frequency	Percent	Valid Percent
The LMS is effective in providing more interaction with my instructors: Receive feedback online.	Strongly Agree	2253	37.0	44.0
	Agree	2144	35.2	41.8
	Disagree	575	9.4	11.2
	Strongly Disagree	153	2.5	3.0
	Total	5125	84.1	100.0
Missing	System	659	10.8	
Do Not Use		313	5.1	
Total		6097	100.0	

'Freshmen' were less likely to Disagree or Strongly Disagree (11%), and 'Graduate' (48%) and Other students (58.5%) more likely to Strongly Agree (p = 0).
'Totally online' students were more likely to choose Strongly Agree (55.1%), whereas Face-to-Face students did only 40.1% of the time.

View Grades online		Frequency	Percent	Valid Percent
The LMS is effective in providing more interaction with my instructors: View grades online.	Strongly Agree	3466	56.8	64.5
	Agree	1649	27.0	30.7
	Disagree	172	2.8	3.2
	Strongly Disagree	83	1.4	1.5
	Total	5370	88.1	100.0
Missing	System	661	10.8	
Do Not Use		66	1.1	
Total		6097	100.0	

Attend online office hours		Frequency	Percent	Valid Percent
The LMS is effective in providing more interaction with my instructors: Attend online office hours.	Strongly Agree	643	10.5	33.8
	Agree	643	10.5	33.8
	Disagree	409	6.7	21.5
	Strongly Disagree	207	3.4	10.9
	Total	1902	31.2	100.0
Missing	System	660	10.8	
Do Not Use		3535	58.0	
Total		6097	100.0	

A very large number of students did not attend online office hours (58%). 'Freshmen' were less likely to choose Disagree or Strongly Disagree (24.4%) but 'Graduate' students more likely to choose Strongly Disagree (14.4%), with p = .008. 'First time LMS users' were also less likely to choose Strongly Disagree (6.3%).
'Blended' and 'Totally online 'students chose Strongly Agree over 40% of the time; however 'Face-to-Face' students did 30.5%.

Ask questions before or after class		Frequency	Percent	Valid Percent
The LMS is effective in providing more interaction with my instructors: Ask questions before or after class.	Strongly Agree	1193	19.6	34.1
	Agree	1493	24.5	42.7
	Disagree	575	9.4	16.4
	Strongly Disagree	238	3.9	6.8
	Total	3499	57.4	100.0
Missing	System	653	10.7	
Do Not Use		1945	15.5	
Total		6097	100.0	

'Freshmen' (16.7%) and 'First time LMS users' (17.2%) were less likely to choose Disagree/Strongly Disagree, but Seniors more likely to choose Strongly Disagree (9.3%), p = 0.

'Blended' and 'Totally online' students chose Strongly Agree over 40% of the time; however Face-to-Face students did 30.4%.

C. Interaction with Classmates

Q11 The LMS is effective in helping me collaborate with my classmates.

Small Group online discussion		Frequency	Percent	Valid Percent
The LMS is effective in helping me collaborate with my classmates: Small group online discussion.	Strongly Agree	1173	19.2	31.5
	Agree	1777	29.1	47.7
	Disagree	551	9.0	14.8
	Strongly Disagree	228	3.7	6.1
	Total	3729	61.2	100.0
Missing	System	422	6.9	
Do Not Use		1946	31.9	
Total		6097	100.0	

Totally online students chose Strongly Agree 42.5% of the time, but Face-to-Face only 26.4%.

Full Class Online Discussion		Frequency	Percent	Valid Percent
The LMS is effective in helping me collaborate with my classmates: Full class online discussion.	Strongly Agree	1038	17.0	30.1
	Agree	1561	25.6	45.3
	Disagree	610	10.0	17.7
	Strongly Disagree	238	3.9	6.9
	Total	3447	56.5	100.0
Missing	System	625	10.3	
Do Not Use		2025	33.2	
Total		6097	100.0	

Totally online students chose Strongly Agree 41.3% of the time, but Face-to-Face only 24.7%.

Group Assignments online		Frequency	Percent	Valid Percent
The LMS is effective in helping me collaborate with my classmates: Group assignments online.	Strongly Agree	917	15.0	27.5
	Agree	1431	23.5	42.9
	Disagree	672	11.0	20.1
	Strongly Disagree	317	5.2	9.5
	Total	3337	54.7	100.0
Missing	System	625	10.3	
Do Not Use		2135	33.4	
Total		6097	100.0	

'First Time LMS users' were less likely to choose Strongly Disagree (6.5%).
'Blended' students were the most likely to Strongly Agree at 36.2%, Face-to-Face were less likely at 24.2%.

Peer Review of work online		Frequency	Percent	Valid Percent
The LMS is effective in helping me collaborate with my classmates: Peer review of work online.	Strongly Agree	837	13.7	28.0
	Agree	1388	22.8	46.4
	Disagree	539	8.8	18.0
	Strongly Disagree	230	3.8	7.7
	Total	2994	49.1	100.0
Missing	System	633	10.4	
Do Not Use		2470	40.5	
Total		6097	100.0	

'First Time LMS users' were less likely to choose Strongly Disagree (5.7%).
'Totally online' and 'Blended' students were more likely to choose Strongly Agree than 'Face-to-Face' students, by 10%.

V. LMS can be a Better tool for Learning

Q12 My LMS would serve me better if I could : (Check all that apply)

My LMS would serve me better if I could:	Percent Yes
Share my coursework with my classmates, advisors, etc.	24.7%
Share my coursework outside my campus community.	10.2%
Continue to access instructor provided materials after the course ends.	62.9%
Continue to access my own coursework after the course ends.	70.5%
Contact classmates after the course ends.	31.3%
Contact instructors after the course ends.	41.7%

There were definite differences between the different years in school for these choices. Usually Freshmen and Graduate students were at opposite ends of the spectrum.

- For "Share coursework with my classmates, advisors, etc." 28.8% of the Freshmen chose yes, but 21.4% of the Graduate students did (p = .007).
- For "Share my coursework outside my campus community" 12.6% of the Freshmen made this choice, but only 8% of the Graduate Students (p = .016).
- For "Continue to access instructor provided materials after the course ends" the Graduate students were most likely to make this choice (74%) vs 52.5% for the Freshmen and 53.9% for First Year LMS users.
- For "Continue to access my own coursework…" Graduate students made this choice 74% of the time, but Freshmen did 65.8% and First year LMS users 65.4%.

Freshmen were more likely to want to "contact classmates after the course ends" (34.3%) and this dropped to a low of 29.5% for the Seniors, but Graduate students had the highest % for this one at 36.6% (p = .001). Surprisingly, Sophomores were most likely to want to "Contact instructors after the course ends" at 45.9% and Other students were less likely at 28.0% (p = .001).

In general, the Totally online students chose these items less often than Blended and Face-to-Face students, often by as much as 10% lower.

Q13 My LMS would be easier to use if I could : (Check all that apply)

My LMS would be easier to use if I could:	Percent Yes
Change the default layout of my entry page.	36.6%
Change the color or theme.	30.1%
Rearrange page elements (as in Google, Yahoo).	29.5%
See grades for some or all of my courses on one screen.	67.5%
See due dates and assignments for all my courses on one screen.	81.1%
See reminders about some or all of my assignments on one screen.	70.3%
Receive updates via text on my phone.	36.6%
Have course calendar entries available in my personal calendar.	35.3%

For these items, generally the 'Freshmen' are the most enthusiastic and the 'Graduate' and 'Other' students are less enthusiastic, with a few exceptions. 'Juniors' and 'Seniors' were more likely to want to *see their assignments on one screen* (about 73%).

'Graduate' students were more likely to want have *course calendar entries available in the personal calendars* (44.1%). There are no differences among the years in school for rearranging page elements. 'First year LMS users' tended to *want their grades on one screen more often* (71.2%).

With the exception of *have course calendar entries available in my personal calendar*, the 'Totally online' students chose these items about 10% less often than the other types of students. For this item, the 'Totally online' students were slightly higher.

Q14 I will use these features if available in my LMS:

I will use these features if available in my LMS:	Percent Yes
Selectively share my profile picture and personal information.	20.0%
Create or join groups (as in Facebook).	22.6%
See and comment on a wall or newsfeed.	21.1%
Selectively share video, pictures, or links.	17.1%
Create or join real-time text or video chats.	19.9%
Integrate with external social networks (as in Facebook, Twitter, etc).	16.3%
Find other students, faculty, or groups with similar academic interests.	32.1%
Collaborate with others using document sharing (e.g. Google Docs).	43.0%
Collaborate with others using real-time audio, video or text chats.	21.2%

'Freshmen' were more likely to choose these items, with the exception of any items involving collaboration items.

'Graduate' students were higher than the 'Freshmen' on: *Sharing their profile picture and personal information* (23.7%), *creating or joining real-time text or video chats* (26.2%), *collaborating with others using document sharing or real-time audio, video or text chats* (53.4%).

'First Year LMS users' were more likely to choose *Create or Join Groups* (as in Facebook) (26.0%), *See and comment on a wall or newsfeed* (24.0%), *Integrate with external social networks* (18.6%), *Find other students, faculty, or groups with similar academic interests* (35.8%) but less likely to choose *Collaborate with others using document sharing* (37.8%).

'Totally online students' were more interested in *Creating or joining groups* (22.9%), *Creating or joining real-time text or video chats* (26.5%), and *Collaborating with others using real-time audio, video or text chats* (29.5%), but less interested in *finding other students, faculty or groups with similar academic interests* (25.1%) and *Collaborating with others using document sharing* (37.8%).

Q15 If I have a mobile device (smartphone, tablet, etc), I will use it to:

If I have a mobile device, I will use it to:	Percent Yes
Get general campus information.	45.1%
Communicate with my instructors.	44.9%
Communicate with my fellow students.	47.5%
View course announcements.	62.8%
View course content.	63.5%
Do my course work (submit assignments, take quizzes, etc).	35.4%
Check my grades.	75.3%

'Freshmen' were more likely to *want to access general campus information* (49%), and 'Graduate' students were much more likely to *want to communicate with instructors* (53.3% - more than 10% higher than the rest).

For the rest of the items, the years in school were similar, with the exception of the 'Other' students who were less likely to *want to view course announcements* (32%), *view course content* (44%) and *check grades* (40%).

Not surprisingly, 'totally online' students were not so interested in *getting general campus information* (29.5%) but were also less likely to want to *check grades with a mobile device* (64.9%)

General Comparison Summary

'Graduate' students are more interested in features that are important to totally on-line courses, especially those that result in collaboration.

'Totally online' students are generally more in favor of the usefulness or ease of use for different features than 'Blended' students, who are more in favor than 'Face-to-Face' students.

First-time LMS users tend to access "less frequently used' features and are more satisfied with these features, than students who have used the LMS for a longer period of time; these features include the calendar and online office hours.

'Fine Arts' students were more likely to find navigation to be difficult, as well as checking grades.

'Education' students were more interested in ongoing access to instructor provided materials and their own coursework, than the other majors.

'Business' students were more interested in having course calendar entries in their personal calendars and more interested in using mobile devices to communicate with instructors and fellow students.

'Sciences' students find using the dropbox to be a little more difficult than the other majors and were less in favor of the usefulness of the calendar and discussion board and submitting assignments online. In general, 'Sciences' tend to rate features lower than the other majors.

'Health related areas' students were more in favor of the calendar, but less interested in being able to share pictures, video, and links.

'Other professional studies' students are more interested in real time text and video chats.

'Sciences' and 'Health related' students tend to be contrary to one another on a lot of features.