
AC 2011-872: STUDENT REQUIREMENTS FOR A LEARNING MANAGEMENT SYSTEM

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Student Requirements for a Learning Management System

Abstract

Use of learning management systems (LMS) in higher education is quickly growing. Methods of applying LMS vary among institutions. According to students, what content makes a successful learning environment in an LMS? What can universities do to better impact students in these systems? And what types of tools do students really desire? Using these questions to direct student focus group sessions at the School of Engineering and Technology (E & T) at Indiana University-Purdue University Indianapolis (IUPUI), researchers examined critical elements students identified as necessary to embrace a learning management system within their studies.

Researchers examined five vital areas affecting students in relationship to the LMS: overall impression of the LMS, communication, collaboration, sense of community, and online courses within the LMS. Three focus groups were held and detailed notes were taken from the discussions that took place in these sessions. A diverse and representative group of students from the School of Engineering and Technology at IUPUI attended the sessions. Results indicated that students “expected” the LMS to be used if available to instructors. Researchers also discovered that students desired to be “in control” of their studies and felt that the LMS did assist with student management of their studies especially in regards to online courses. Communication tools were identified as a necessary component to improve student usage and also to create a sense of community within the LMS. Training for both instructors and students was also a constant theme in the discussions. Since students communicated that they were not given formal training in the LMS, their engagement within the system was delayed.

Finally, two major findings in the study were that the LMS must (1) contain the necessary tools that students require to support their courses and (2) that instructors must set up the LMS effectively to encourage both engagement and a “sense of community” for students. Students count on being able to have all of the necessary elements within their reach in a LMS to aid them with their studies. Administrators, IT professionals and instructors must create an LMS that is both engaging and responsive to students in order to impact student learning success.

Introduction

Commuter students are a growing entity among higher education institutions, especially those within urban areas;¹ this may be due to several reasons, from cost to convenience, given the current economic climate. Whatever the explanation, this particular group can benefit from the added awareness from both faculty and administration in providing a “sense of community” that traditional students have long been privileged to on campus. That community allows for students to feel that they possess a relationship or “sense of belongingness” with their school and program.² One tool that can be used to aid in this effort is a learning management system (LMS).³

Just how much these urban, commuter students are engaged in their current learning management system at the School of Engineering and Technology at IUPUI was the goal of this study. Student engagement is simply that students “understand what they are learning.” When students become directly involved in their education, “the more adept they become at managing complexity, tolerating ambiguity, and working with people from different backgrounds or with different views.”⁴ Likewise, “for teachers, administrators and school staff, learning is focused on developing the school system’s ability to involve

students as well as individual teachers' ability to meaningfully involve students in different kinds of classroom learning opportunities.”⁵

Several key questions guided the research such as: (1) What content makes a successful online learning environment for students? (2) What can institutions do to better impact student engagement in these systems? (3) And what types of tools do students really desire in these systems?

Methods

Data collection was first conducted via an electronic student survey of undergraduate students in the School of E & T at IUPUI. The survey was a voluntary activity and available for student participation for exactly three weeks. A participation rate of 17.2% was recorded from all 2,418 potential respondents (undergraduate population of the School of Engineering and Technology for fall semester 2009.) Researchers determined this was an adequate representation for the purposes of this study.

The survey consisted of four categories of questions (1) instructor usage, (2) student usage, (3) general questions on the learning management system, and (4) individual student identifiers so that researchers were able to discover multiple findings involving the data. The survey required students approximately ten minutes to complete and there were both multiple choice and fill-in-the-blank questions. All of the fill-in-the-blank questions were for the purpose of extracting additional explanation or details relevant to the study.

The initial survey provided researchers with a foundation of understanding exactly how the current LMS was being used and what the students thought about the current system from a limited perspective. This led researchers to further expand their study by holding focus group sessions with representation of all student populations within the School of E & T. The focus group sessions provided researchers an opportunity to explore the students' sense of engagement within the online learning management system in greater detail.

All undergraduate students were invited to register and participate in the focus group sessions. Actual participation was limited and represented a very small percentage of total students. Researchers felt that based on the actual interaction and comments by students that this was enough participation to provide an accurate representation for purposes of this study. Participants came from a variety of backgrounds (majors and class standings) within the School of Engineering and Technology including seniors and sophomores, and electrical engineering, computer and information technology, mechanical engineering, and computer graphics technology students.

A more informal question and answer session was held during the focus groups due to the limited number of students participating, which actually provided for much more detailed discussions on the various topics. Researchers were able to ask students to fully explain their answers and/or provide more details that they would have not had the opportunity to do with a larger group. Students also appeared more at ease to discuss and provide detailed answers and information to researchers.

Findings

Students in the focus groups were engaged in a discussion featuring several categories of questions on and around the current LMS. Findings are reported by each category of questions to better understand the students' perceptions of the system as well as their general experience.

Overall Impression of the LMS

Students were first asked what they liked the most about the LMS or using the LMS during classes whether online or in the classroom. Student responses included various tools available in the LMS such as the gradebook, the chat tool, the message tool, resources, assignments and the roster so that students can see who else is in their course for multiple purposes. Integration of the tools was mentioned as a key to fully utilizing the LMS, “the integration of main aspects like the calendar, messaging, announcements, and assignments” are extremely helpful to students as one student commented. Other students quickly agreed that having these tools linked within the LMS environment can provide students with a “one-stop shop” for their course. When professors do not link the various tools in the LMS, students commented that they felt “confused” and were left searching for details to assignments, quizzes or resources.

Students were next asked about how much their instructors actually utilized the LMS within their courses. Answers varied based on students’ experiences. Some replied that “I have had instructors who just plain out don’t use OnCourse [LMS] at all - nothing. Their tab was actually removed for that class entirely. (But) then, I’ve had instructors that completely fully integrate it.” There was agreement among the students present that some instructors are still using alternative methods, and avoiding all or most of the LMS and its key features. Students related the experience of various professors creating Word documents for assignments, the syllabus and even a calendar feature. Others told that some professors have created their own websites with all class materials; some may incorporate these into the LMS or at the very least link them, but others may not, telling students to go to their websites and “not use OnCourse”, the LMS, for the course at all.

Common tools that students see used in the LMS by faculty are the assignments, gradebook, messages and announcements although the degree of use by faculty varies as mentioned before. Students also confirm that the syllabus for the course is almost always loaded in the LMS, but that the location can vary. Students conveyed their desire to be able to download course materials; have a calendar tool with announcements and assignments linked to it; and to have the ability to submit assignments online. The gradebook feature is one students find particularly useful, but only if it is maintained and grades are entered in a timely manner.

One of the main points to be noted here is the student expectations of the LMS in their courses. Students expect LMS usage by their instructors and feel “disappointed” and “frustrated” when it is not used. Students conveyed that they are proactive with the LMS “checking” it days before classes begin in a semester to see what the LMS contains for the course. Some admitted to asking their instructors why the LMS was not being used (if it was not) only to be told that the instructors “are not comfortable using OnCourse [LMS] entirely so they prefer to do it the hand-in method.” As one student commented “you can actually keep track of your grades (on the LMS.) You can actually go on - I have a couple of teachers that use the resources tab to upload formula sheets and the PowerPoint slides; because it really helps to (have those resources.) You have that online stuff and don’t have to a paper copy of everything.” Another student agreed saying “I look forward to professors using it. When they don’t, it’s kind of frustrating because it makes it a little harder to manage. Especially, the assignments - when they

pass back assignments, you can go on and see all of their comments digitally.” Researchers also confirmed that many students work on their courses in the LMS during odd hours such as evenings and weekends. Populating the LMS with a significant amount of course materials would be invaluable to students in regards to convenience then.

Communication within the LMS

Methods of communication were a continuous point in the initial survey of students so researchers wanted to spend time discussing these tools and their importance in the LMS with the focus group. Students confirmed their desire for a variety of communication tools within the LMS to be used both inside and outside their courses. The ability to send messages to their classmates with questions or to obtain information on a missed class time was one feature students felt essential in the LMS. Others were announcements that could tell them when their homework is due or when a test/quiz was scheduled and the use of chat rooms and forums for posting questions so that students could conduct discussions with each other. A significant number of students did convey to the researchers that their instructors were not using the chat or forum tools and that some of the instructors actually turn that feature off in their LMS. Students expressed the need for such tools due to collaboration efforts on projects or simply to be able to hold discussions on course topics outside of class. Other students mentioned that their instructors had actually required forum postings and incorporated both tools (chat and forum) within their courses which students liked.

Students also wanted the ability to be able to have their message tool in the LMS linked to their email so that they were aware of communication within the LMS even when they were not logged into it. Once again, instructor usage or the lack there of, was a vital aspect of the LMS. Some students conveyed that their instructors were not responsive or at the very least responsive in a timely manner, to their messages or postings in forums. Students felt that instructors must lead the course in the LMS and be actively involved in it if they are using it for their courses.

Collaboration within the LMS

As mentioned previously, the LMS examined has available tools for collaboration efforts by students and their availability is varied by the instructors in each course. Some students did not prefer to collaborate online and would still rather meet face-to-face to handle group projects. Other students conveyed a real desire to have a variety of tools within the LMS to handle all group efforts. Some liked the requirement of LMS usage within their course, “I’ve actually had professors who make assignments out of working in the forums. Last semester, one of our very first assignments was getting to know OnCourse [the LMS]. We had to post a topic in the forum and reply a couple of times. I think it really brought the entire class together to form a more cohesive team unit” remarked one student.

When discussing their experience with a required weekly chat time in the LMS in their courses such as Sunday nights from 7:00pm – 9:00pm, students expressed mixed feelings toward this forced collaboration by the instructor. Some students felt that a set time with their instructor was very helpful in the course, while other students felt that if an online time was required then “they might as well be in

class.” An optional online time where the instructor was available to answer questions but students were not required to log on and join in was a suggested solution.

Students were then asked what else they might use to work on group projects or papers, students responded with such software tools as “Google Docs, AIM, and Breeze.” Some students had experienced frustration with the chat tool in the current LMS and their instructors had opted to “just forget it... everyone is required to have AIM.” Other students had managed to have online chats successfully with their classmates in multiple chat rooms set up by their instructors within the LMS. One point agreed upon was that students would exclusively use the LMS if the system would be set up and contain the same type of elements that the software tools do (ability for document management, instant communication, sharing of PowerPoint documents and even video.)

Sense of Community and the LMS

Students were next asked about how they feel about the LMS environment, and in particular, the “sense of community” they receive from it. Replies varied from “none” to students who felt the possibility was there if faculty and administration applied the right tools and techniques. Students admitted to looking to be contacted about events or important issues via email or possibly the LMS. The students did convey that they log into the LMS at a much more frequent rate than the School of Engineering and Technology’s website. One student conveyed the idea of improving the features of the LMS to include pictures of students as well as links to social networking pages to provide a more personal experience for students. Other students agreed that this would create a more “personal” experience within the LMS.

Communication and the overall setup of the LMS were once again mentioned by students as factors that could help bring them together as more of a team. Students feel “distant” from their instructors when the instructor is slow or perhaps never responds to communication requests within the LMS using such tools as messaging or forums. They also confirmed the need for workspace in chat rooms or resources as discussed earlier so that collaboration with one another can be more easily accomplished.

Online Courses using the LMS

Researchers found that student experiences with online courses were also mixed. Students enjoyed “working at your own pace” and not being “confined” to a certain time and day for class. One student commented that he liked the freedom of online courses because he could “be in the middle of another assignment and say, ‘I have an idea for this’ and then go back to that.” Student remarks reflected the fact that they were learning to “multi-task” their course workloads with their everyday life and thus developing a subset of skills researchers had not anticipated.

Some students mentioned that they have had negative experiences with exclusively online courses in regards to learning to self motivate and manage during the course. “I think the fact that I didn’t go to class every week kind of messed me up because I didn’t have that set schedule. So, a lot of times, I would end up forgetting about due dates and things like that.” This was not the consensus though; most students felt an online course was a very rewarding experience since they put more time and effort into

it. “With the online experience it’s what you get out of it yourself, whereas with the face-to-face class, it’s whether you have an active instructor and whether everyone else is participating and things like that.” All students confirmed that with an online course in LMS “if you are required to complete an assignment or reading, you as an individual have much more accountability and engagement and you’ve got to really manage it yourself. You’re not really going to be rewarded for seat time for just showing up.” The key concept researchers found was that students want to be “in control” of their studies so even if they enjoy classes taken in person, they definitely like the ability to decide when they want to study, complete assignments, and work on projects.

Conclusion and Recommendations

The results of this study suggest that students will embrace a learning management system to aid them in their educational pursuits and even expect its usage by an instructor if it is available to them. The two key findings were that the LMS must (1) contain the necessary tools that students require to support their courses and (2) that instructors must set up the LMS effectively to encourage both engagement and a “sense of community” for students. Students count on being able to have all of the necessary elements within their reach in a LMS.

Communication tools were one of the largest factors identified as a necessary component to a beneficial system and one that provides that “sense of community” to students. The posting of messages, the syllabus, assignment and project details, grades and supplemental materials required for the course were the most requested communication tools. Students also had the desire to have chat and discussion forums (collaboration tools) available to them to utilize throughout the course. Interaction with the instructor was also vital and necessary to create a more “community” or “team” type of feel within the course.

Simply purchasing or enabling a LMS is not enough. Administrators and IT professionals need to realize that students and instructors require an adequate amount of training on the system to not only be comfortable with it, but to also fully utilize its capabilities. Students felt that the current LMS “was not intuitive for new users” so training becomes crucial for students to embrace the system. One suggestion given by a student was that IT professionals provide (and administrators require) a standardized version of the LMS to each instructor including a standard set of tools with the option to add tools where necessary based on requirements for each course. This would provide the “consistency” among courses that students so greatly desired in the study. This enables students and instructors to learn an LMS system more rapidly so that it also becomes easier to navigate for all involved. Researchers discovered that introductory courses within the school would provide an excellent opportunity to train freshman on the LMS and how the system can be utilized within their future courses.

A more personable approach to the design of the LMS per course was also suggested. The ability of students to upload pictures and write an introduction about themselves to their instructor and classmates provides students with a “connection” to one another. This, in turn, helps students develop relationships with fellow classmates that may last long past the course itself.

Consolidation is also essential to a successful LMS according to the study results. Students want “control” over their courses and the ability to access all required materials plus collaborate with their instructor and classmates at their convenience in one single system. A well managed and detailed LMS

can enable students to become fully engaged in their studies. Engaged students feel more connected to their programs and thus form a “community” within their schools, colleges or departments.

Next steps to expand upon this research include the examination of instructor usage as well as benchmarking other institutions. Instructors could be surveyed and interviewed to determine their limitations and capabilities with the system. This could provide administrators with more detailed information when designing training or a standardized version of the LMS. This could also help in maximizing the LMS for student usage. Finally, taking time to benchmark other institutions can give a better sense of where peer institutions are in regards to utilization of LMS products and student engagement.

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