LEARNING MANAGEMENT SYSTEM EVALUATION

ACADEMIC SENATE INFORMATION TECHNOLOGY COMMITTEE

TUESDAY, FEBRUARY 22, 2011

TABLE OF CONTENTS

3-10-11 Academic Senate Approved Unanimously to Adopt Report

MEMBERS OF THE COMMITTEE

Name	Department (College)
Elahe Amani	Director of Technical Services Student Affairs, Designee of Vice President of Student Affairs
Will Breitbach	Librarian and Library Instruction Coordinator (L/A/C/E)
Melissa Brouguiere	CSUF Student Representative
Pam Caldwell	Faculty Internship Coordinator, Communications (Communications)
Cliff Cramp (Fall)	Professor, Visual Arts (Arts)
Charles Grieb (Spring)	Associate Professor, Visual Arts (Arts)
Amir Dabirian	Vice President Information Technology, Designee of President
Loretta Donovan	Associate Professor, Elementary and Bilingual Education (Education)
Naomi Goodwin	Assistant Vice-President Administration and Finance, Designee of Vice-President of Administration and Finance
Volker Janssen	Assistant Professor, History (HSS)
Chris Manriquez	Designee of Vice-President of Information Technology
Sue Robertson	Assistant Professor, Nursing (HHD)
Chris Renne	Director, Faculty Development Center, Designee of Vice-President of Academic Affairs
Dennis Robinson	Director, Distance Education, Extended Education
Michael Shafae	Assistant Professor, Computer Science (ECS)
Jon Taylor	Associate Professor, Geography (HSS); Senate Executive Liaison
Sean Walker-Committee Chair	Associate Professor and Vice Chair, Biological Science (NSM)
Jenny Zhang	Associate Professor, Information Systems and Decision Science, (MCBE)

ACKNOWLEDGEMENTS

Although the following individuals are not members of the committee, they contributed to our discussions, participated in our evaluation of Moodle and Blackboard and provided technical assistance.

Kristin Stang- Associate Professor, Special Education (Education); Curtis Williams- Part-Time Faculty, Geological Sciences (NSM); Susan Gaitan and Catherine Dinh, Faculty Development Center; Shariq Ahmed, Matt Ahola, Nicole Calucag, Marci Payne, Rommel Hidalgo- Information Technology.

Executive Summary

1. Our current learning management system (LMS), Blackboard 8.0, is out of date and requires an upgrade. Blackboard does not currently support version 8.0 to Information Technology's satisfaction and is slow, at best, to develop tools that are readily available for version 9.1.

2. Two candidate LMS, Moodle 1.9 and Blackboard 9.1, were evaluated by the Academic Senate Information Technology Committee. These two options were evaluated because we are currently using Blackboard 8.0 and upgrading to 9.1 would provide us with new features, fewer clicks, increased accessibility and a better LMS than 8.0. Moodle is an open-source option that several CSU campuses have adopted and thus there is a community of developers in place for Moodle- the CSU Moodle Consortium. Moodle is also ADA §508 compliant, meaning that according to US government standards the LMS is accessible to disabled students. Moodle would allow CSUF-IT to develop CSUF-specific applications and potentially provide better support and quicker response time to solve problems with the LMS because support and development would reside in CSUF-IT or the CSU Moodle Consortium.

3. Members of the Academic Senate Information Technology Committee had access to both Blackboard 9.1 and Moodle 1.9 from late October 2010 until February 2011. In addition, the Faculty Development Center and the committee surveyed the faculty about which features faculty preferred and IT provided data on faculty use of Blackboard. Information Technology provided a cost estimate for the transition year.

4. A large number of instructors use the LMS and any change to the current system will greatly impact faculty.

5. The Academic Senate Information Technology Committee unanimously recommends that CSUF adopt Moodle as its LMS. The majority, but not all, of the committee preferred Moodle to Blackboard. The features used and preferred by faculty at CSUF are available in both Blackboard 9.1 and Moodle. In the short-term, monetary and time costs for transitioning to Moodle will be higher than moving to Blackboard 9.1. However, in the long-term, having no yearly licensing fee will provide some cost savings and moving support and development to CSUF-IT will presumably give faculty and students better service when dealing with LMS problems. Upgrading to Blackboard 9.1 would be accomplished very quickly with no or a very short transition period where Blackboard 9.1 and Blackboard 8.0 would simultaneously be available to faculty. The transition to Moodle could occur over the course of 2011-2012 allowing a gradual rather than abrupt change and Blackboard 8.0 will continue to be available during our transition.

6. Given the predicted state of the CSU budget next fall and current faculty morale, it is imperative that there is recognition of how faculty workload will be impacted during the transition between Blackboard 8.0 and the new LMS. Regardless of whether CSUF moves to Moodle or upgrades Blackboard, the Senate Information Technology Committee **strongly** recommends that a large amount funding and resources (e.g., stipends, summer salaries for additional FDC coordinators and/or staff) be made available for training faculty, staff and administration on the new LMS. This will be especially important if we move from Blackboard 8.0 to Moodle, since Blackboard 9.1 is more similar to Blackboard 8.0 than Moodle and existing Blackboard courses will be easier to import. If insufficient funding is available for this transition, the Senate Information Technology Committee does not recommend upgrading to Blackboard 9.1 or moving to Moodle.

7. Information Technology has proposed the following timeline. In spring of 2011, they will create an active Moodle 2.0 installation and transfer current Blackboard courses to the new Moodle installation. Users will be able to see and try Moodle 2.0 during spring of 2011 prior to production use in fall of 2011. Moodle 2.0 will be upgraded to Moodle 2.1 during the summer and ready for production in the fall of 2011. This upgrade will have minimal impact on the user interface.

8. The Academic Senate, Information Technology, and Student Affairs should work closely to develop methods to allow more students to participate in evaluating software and technology that greatly influences their educational experience.

WHY ARE WE EVALUATING MOODLE AND BLACKBOARD 9.1 AS OPTIONS FOR THE LEARNING MANAGEMENT SYSTEM (LMS) AT CSUF?

We are currently using Blackboard 8.0. By staying on this system our campus is missing out on new features, security enhancements, and other upgrades that are being developed for the current version of Blackboard and are unlikely to be developed for older versions of Blackboard. Blackboard is also slow to respond to our requests for assistance and, because of the proprietary nature of the Blackboard software, addressing CSUF specific needs is dependent on their developers and their timeline. Lastly, we spend approximately $130,000 licensing Blackboard per year.

Currently there are a number of open source solutions (e.g., Moodle and Sakai) that do not have recurring yearly license fees and will never have a license fee. This means that, along with a community of developers, we are free to develop CSUF specific tools and modifications as long as the expertise and resources are available. We chose to evaluate Moodle because 1) it has been in use by several CSU campuses (as well as many other Universities across the country) and 2) there is a consortium of CSU's who share in the development of tools for Moodle. Upgrading to the current version of Blackboard or changing to Moodle will be a significant upgrade that will hopefully improve many of the features used in the current learning management system (LMS) and add new features (e.g., mobile device access) that many students and faculty have asked about.

LEARNING MANAGEMENT SYSTEM USE AT CSUF

In the spring and fall of 2010 there were 13,757 courses created on Blackboard and 34.8% of those were active. 65% (1,524) of instructors had active Blackboard courses based on the individual identification numbers assigned by Blackboard. For instructors with active courses, the approximate number of hits on their Blackboard sites ranged from 0 – 1,913.3 hits/student with an average of 172 hits/student (st. dev. = 197, n =1,524). The students in these courses were accessing the sites at a fairly frequent rate. Fifty percent or more of these courses were being visited by students at frequencies indicating they may be accessing the site at least once per day. These data indicate that the LMS at CSUF is used heavily by both students and faculty.

SURVEY OF FACULTY, STAFF AND ADMINISTRATION REGARDING FEATURES

We received responses from 412 full-time tenure track faculty, part-time faculty, and administrators. For the most part, the features that CSUF users want and use are consistent with the features currently available in Blackboard 8.0 (see Table 1). 97.38% of the respondents use Blackboard. The most important features (based on ranking the percentage of Yes responses) are the ability to upload files, import old course content into new courses, copy a course from one semester to the next, export/archive courses, reorder columns in the Grade Center, e-mail students, link to external websites, create announcements, access files across courses and allow students to submit assignments. Of the

additional features we asked about, being able to see the course as a student and verification of student identity were the two top rated features.

All of these features are available in almost any of the current LMS and are available in both Blackboard and Moodle (although some may require add-ons to the base software or the addition of a generic student account to all courses). In addition, the high ranking of features associated with moving courses and materials from semester to semester stresses the anxiety and trepidation faculty have about moving their courses to a new system and the amount of additional workload this might entail. The written comments by faculty and administration also mirror the anxiety they have about moving materials from our existing system to a new system and their wishes that, whatever the new system, the disruption and change in workload be minimal. The comments are available, by request, from Sean Walker (swalker@fullerton.edu or 657-278-3610).

EVALUATION OF MOODLE (V 1.9) AND BLACKBOARD (V 9.1)

HOW THE EVALUATION WAS CARRIED OUT

Over the course of the fall semester of 2010, the Academic Senate Information Technology Committee was given access to Blackboard 9.1 and Moodle. The versions that we were evaluating did not have all of the add-on features we would have in a production version at CSUF (e.g., Turnitin.com) but did have all of the basic elements of each LMS and many of the features that the faculty thought were important. The committee members were given from late October 2010 until February 2011 to evaluate each LMS and several features based on a rubric developed by Chris Manriquez, Matt Ahola and Shariq Ahmed and discussed at the November and December Senate Information Technology meetings (Table 2). At our February meeting we discussed both Blackboard 9.1 and Moodle and conducted a poll of which of the two systems each person preferred.

FEATURES

The chair of the committee received six of the rubrics back from committee members, staff involved in the evaluation, and our student representative. Overall, the committee agrees that the features faculty want in an LMS are in both systems and based on the rubrics received, the committee is tied in their preferences for Blackboard compared to Moodle (3 scored Blackboard higher and 3 scored Moodle higher). In our roundtable discussion, the majority of the individuals present preferred Moodle. However, the entire committee agreed that a transition to Moodle will be difficult and will require a greater investment from Information Technology and Academic Affairs in faculty training than will upgrading to Blackboard 9.1.

TRANSFERRING COURSE MATERIALS AND TRANSITION PERIOD BETWEEN BLACKBOARD 8.0 AND THE NEW LMS

TRANSFERRING COURSES TO MOODLE AND FROM SEMESTER TO SEMESTER

For course content currently on Blackboard, Information Technology will move existing Blackboard 8.0 courses into Moodle. This has been done at several other campuses and many tools are available to help do this efficiently and effectively. However, Question Pools may only be able to be transferred by exporting them from Blackboard 8.0 to Respondus and then importing them into Moodle. As in our current version of Blackboard, there are tools for the user to move materials from semester to semester. In addition, there may be some content from publishers that may not be available in the same format for Moodle as it is in Blackboard (e.g., Course Cartridges from McGraw-Hill). However, according to the McGraw-Hill website, they are able to provide this material in a format that works with most LMS and, in discussions between the chair and the McGraw-Hill representative, these will be available for Moodle.

TRANSFERRING COURSES TO BLACKBOARD 9.1 AND FROM SEMESTER TO SEMESTER

Moving from Blackboard 8.0 to Blackboard 9.1 should be fairly straightforward and existing Blackboard materials can be copied by Information Technology to Blackboard 9.1. As in our current version of Blackboard, there are tools for the user to move materials from semester to semester. Committee members were easily able to upload existing Blackboard 8.0 materials into Blackboard 9.1 during the trial period.

TRANSITION

If CSUF Moves to Moodle

Our transition to Moodle would occur over the 2011-2012 academic year and would not be abrupt. Starting in the fall of 2011, both Blackboard 8.0 and Moodle 2.1 would be available for faculty to use and faculty would be allowed to transition at their own pace (e.g., Fall – Early Adopters versus Spring – Late Adopters) and training would be provided. In addition, Information Technology is planning on moving Spring 2011 Blackboard 8.0 courses to a Moodle 2.0 test environment so faculty and students can see what their courses would look like in a different LMS.

If CSUF Moves to Blackboard 9.1

The transition from Blackboard 8.0 to Blackboard 9.1 would be abrupt. In the worst-case scenario it might require approximately three-weeks when the LMS would not be available according to CSUF-IT. Amir Dabirian and Chris Manriquez have stated that this is because of the licensing rules of Blackboard (we can only have one active production server) and the large amount of data (approximately 2 TB) that would need to be copied. While this event is unlikely and CSUF-IT realizes that the LMS being down is not an option, it epitomizes CSUF-IT's interactions with Blackboard and part of the reason CSUF-IT would like to move away from Blackboard. If a transition period occurs where Blackboard 8.0 and Blackboard 9.1 are available, it will require CSUF to pay additional licensing fees. All faculty would be required to use Blackboard 9.1 in the fall of 2011. Training would be provided for Blackboard 9.1.

SUPPORT AND FACULTY TRAINING

BLACKBOARD

Switching to the new version of Blackboard will require more training to be available for faculty since the interface is similar but not exactly the same as Blackboard 8.0. We will still be dependent on Blackboard for certain kinds of support and fixes for technical issues and will require increased resources from Information Technology and Academic Affairs during the first year. Information technology has generally been unhappy with the level of support they have received from Blackboard and feel they could do a better job supporting Moodle.

MOODLE

Moodle will require more faculty time to adjust to and that more training be made available for faculty since it is very different from our current LMS environment. Thus Information Technology and Academic Affairs must provide resources to the Faculty Development Center and faculty during the transition period. The initial amount of resources required for Moodle will be greater than for Blackboard.

INFORMATION TECHNOLOGY COST ANALYSIS

The following is a projection of our costs to transition over the next year from Information Technology. The primary cost for Blackboard is the $130,000 annual licensing fee. Moodle has no licensing fee, but maintaining Blackboard 8.0 during the year-long transition will require us to pay a reduced Blackboard licensing fee. Whether we switch to Blackboard 9.1 or Moodle, there must be an investment by CSUF to help train faculty. Although Blackboard 9.1 will be more familiar to faculty and likely require fewer training sessions, additional resources (e.g., summer salary for FDC faculty coordinators or additional staff, resources to create web-based CSUF specific Blackboard 9.1 training) and these costs could range between $25,000 - $75,000. Since Moodle is very different from our current Blackboard installation, it will likely require more money for training personnel because of the longer time-period for transition (see below) and a potentially larger number of faculty that will require training and would likely range between $50,000 - $150,000. In addition, there will be greater development costs for Moodle compared to Blackboard ($150,000 versus $25,000). Increases in staffing required for Moodle in Information Technology can occur with minor or no increases in cost by filling currently unfilled positions.

It has been suggested that faculty be given compensation for attending training. Given the number of part-time and tenure-track faculty, this would require a substantial amount of funding from Academic Affairs and Information Technology. Depending on the amount of the compensation (which should be dependent on the time required for training), the number of faculty that participate in training, this could range from $150,000 - $1,000,000. Thus, this would substantially raise the cost for upgrading to Blackboard 9.1, and in particular, for moving to Moodle.

Thus the initial cost estimates from Information Technology suggest that, in the short-term, moving to Moodle will be more expensive than upgrading to Blackboard 9.1.

CONCLUSIONS AND RECOMMENDATIONS

Our campus utilizes the LMS heavily and any upgrade or change to the current system should be approached carefully and be well planned. Both Moodle and the new version of Blackboard are capable of providing the features the CSUF community would like to have in a LMS and, as such, either is a viable LMS solution for our campus. However, there will be costs associated with the transition to either Blackboard 9.1 or to Moodle 2.1.

MOODLE 2.1

The transition period from Blackboard v 8.0 to Moodle will require a moderate amount of faculty time, resources from Information Technology, Academic Affairs, and the Faculty Development Center. However, this transition can occur over the course of the 2011-2012 academic year and will not be abrupt. CSUF Information Technology will have more control over the LMS and be able to provide direct support and development for Moodle.

BLACKBOARD 9.1

The transition between Blackboard 8.0 and 9.1 will likely be abrupt because of the licensing costs to run two versions of Blackboard. The change from Blackboard 8.0 to 9.1 will also require investment from Information Technology, Academic Affairs, and the Faculty Development Center, but because of the similarity between v 8.0 and 9.1 the investment of faculty time over the transition period will be much less than required for Moodle. CSUF will continue to need support from Blackboard and, because the software is proprietary, rely on Blackboard to develop any new tools that we might need. In addition, we will continue to pay the license fees for Blackboard and for the addition of certain features (e.g., mobile) we will be required to pay more fees.

RECOMMENDATION

The Academic Senate Information Technology Committee unanimously recommends that CSUF adopt Moodle as its LMS. The majority, but not all, of the committee preferred Moodle to Blackboard. The features used by faculty at CSUF are available in both Blackboard 9.1 and Moodle. In the short-term, monetary and time costs for transitioning to Moodle will be higher than moving to Blackboard 9.1. However, in the long-term, having no yearly licensing fee will provide some cost savings and moving support and development to CSUF-IT will presumably give faculty and students better service when dealing with LMS problems. The transition to Moodle can occur over the course of 2011-2012 allowing a gradual change.

Given the predicted state of the CSU budget next fall and current faculty morale, it is imperative that there is recognition of how faculty workload will be impacted during this transition and how this will impact their teaching, research, and service. Regardless of whether CSUF moves to Moodle or upgrades Blackboard, the Senate Information Technology Committee strongly recommends that a large amount funding (e.g., stipends, summer salaries for additional FDC coordinators or staff) and resources be made

3-10-11 Academic Senate Approved Unanimously to Adopt Report

available for training faculty, staff and administration on the new system by Information Technology and Academic Affairs.

Currently, Information Technology has proposed the following timeline. In spring of 2011, they will create an active Moodle 2.0 installation with copies of current courses. Faculty and students will be able to see and try Moodle 2.0 during spring of 2011 prior to production use in fall of 2011. Moodle 2.0 will be upgraded to Moodle 2.1 during the summer and ready for production in the fall of 2011.

We had very high quality input from Melissa Brouguiere, our student representative, and some input from students who took Chair Walker's Behavioral Ecology class in fall of 2010 and used Moodle. Given CSUF's commitment to inclusive and collegial governance, the Academic Senate, Information Technology, and Student Affairs should work closely to develop policies and procedures that allow more students to participate in evaluating software and technology that greatly influences their educational experience.

3-10-11 Academic Senate Approved Unanimously to Adopt Report

Table 1: Responses to Faculty Survey

Full-Time Tenure Track Faculty =FTF, Part-Time Faculty=PTF, and Administration =Adm														
IDK= I DON'T KNOW, RESP= RESPONSES														
	YES			NO			I DON'T KNOW			TOTAL				Percentage	
	FTF	PTF	ADM	FTF	PTF	ADM	FTF	PTF	ADM	YES	NO	IDK	RESP	YES	YES (NO IDK)
Do you use Blackboard	245	110	16	7	2	1				371	10		381	97%	97%
COMMUNICATION FEATURES															
Announcements	252	112	14	14	7	2	7	1	1	378	23	9	410	92%	94%
Calendar	68	39	9	127	49	6	59	26	1	116	182	86	384	30%	39%
Chat (text only)	69	31	6	120	51	7	64	28	2	106	178	94	378	28%	37%
Chat (audio,video,text combined)	57	18	10	125	56	5	74	32	2	85	186	108	379	22%	31%
Discussion Boards	190	82	15	43	19	2	29	14	0	287	64	43	394	73%	82%
Email	256	113	15	14	5	2	2	1	0	384	21	3	408	94%	95%
Whiteboard	53	27	8	92	41	4	105	39	5	88	137	149	374	24%	39%
Groups (the ability to assign students to groups)	152	61	13	60	35	3	51	18	1	226	98	70	394	57%	70%
Wikis/Blogs	78	31	6	101	45	6	78	32	5	115	152	115	382	30%	43%
ESSENTIAL CONTENT FEATURES															
Upload Files	272	119	17	1	0	0	2	1	0	408	1	3	412	99%	100%
Access Files across courses	215	97	13	20	5	1	29	15	3	325	26	47	398	82%	93%
Link to External Websites	240	109	16	19	3	0	13	6	0	365	22	19	406	90%	94%
Integration of Media (e.g. YouTube, Audio, Video)	212	87	16	30	19	0	31	9	0	315	49	40	404	78%	87%
Integration of user created web pages (e.g. Soft chalk)	101	47	11	65	27	2	101	41	3	159	94	145	398	40%	63%
ASSESSMENT FEATURES															
Quizzes	209	90	12	31	16	2	31	9	2	311	49	42	402	77%	86%
Question Pools	119	66	9	62	25	2	83	20	5	194	89	108	391	50%	69%
Randomization of question order	162	72	9	56	25	2	47	16	5	243	83	68	394	62%	75%
Surveys	170	69	12	44	25	1	49	21	3	251	70	73	394	64%	78%
Assignment submission	234	98	14	19	11	0	18	7	2	346	30	27	403	86%	92%
Plagiarism detection	212	96	13	33	13	2	26	8	1	321	48	35	404	79%	87%
Add comments to papers and/or grade with a rubric	188	88	13	46	13	1	36	14	2	289	60	52	401	72%	83%
Peer review of assignments	109	38	7	84	36	4	74	34	5	154	124	113	391	39%	55%
GRADEBOOK FEATURES															
Ability to weight grades	180	72	11	52	31	2	34	10	2	263	85	46	394	67%	76%
Ability to order columns as desired	246	102	9	13	4	2	13	9	4	357	19	26	402	89%	95%
Import/export to Excel	225	95	12	24	13	1	18	11	2	332	38	31	401	83%	90%

Table 1 - Responses to survey questions by Full-Time Tenure Track Faculty (FTF), Part-Time Faculty (PTF), and Administration (Adm). Continued

IDK= I DON'T KNOW, RESP= RESPONSES

3-10-11 Academic Senate Approved Unanimously to Adopt Report

	Yes			No			I Don't Know			Total				Percentage	
	FTF	PTF	ADM	FTF	PTF	ADM	FTF	PTF	ADM	YES	NO	IDK	RESP	YES	YES (NO IDK)
COURSE MANAGEMENT FEATURES															
Course Copy from one semester to the next	266	116	15	6	3	0	2	3	0	397	9	5	411	97%	98%
Export/archive courses	250	107	15	9	7	0	14	5	1	372	16	20	408	91%	96%
Import old course content to new courses	265	112	16	4	4	0	5	5	0	393	8	10	411	96%	98%
Adaptive release of content (e.g. by date/time or other criteria)	189	95	13	23	6	2	56	16	1	297	31	73	401	74%	91%
Track student access to course and content items	186	90	12	44	20	2	37	9	2	288	66	48	402	72%	81%
ADDITIONAL FEATURES															
Ability to access course as a student	208	98	12	31	11	1	32	8	3	318	43	43	404	79%	88%
Faculty access and use via mobile devices	120	58	12	70	31	1	78	28	3	190	102	109	401	47%	65%
Student access and use via mobile devices	127	62	12	66	27	1	77	26	3	201	94	106	401	50%	68%
Verification of student identity for assignments turned in online	192	93	14	29	12	0	48	13	2	299	41	63	403	74%	88%
Ability to have online communities	121	50	12	60	33	2	83	27	2	183	95	112	390	47%	66%

3-10-11 Academic Senate Approved Unanimously to Adopt Report

Table 2: Rubric used to evaluate Moodle and Blackboard

Enter a "+", "-", or "=" under the Blackboard 9.1 and Moodle 1.9 columns. The comments field can be used to specify importance of the item. The "other" section below can be used to add important items not already listed. Filling out the Technical Features area is optional.

Areas of Consideration	Blackboard 9.1	Moodle 1.9	Comments
LMS Basic Features			
Announcements			
Email			
Discussion Boards			
Chat			
Whiteboard			
Calendar			
Groups			
File management/sharing			
Assessment Features			
Quizzes, Surveys			
Question Pool Management			
Selective Release/Time Control			
Import/Export			
Discussion Grading			
Assignment Dropbox			
Class Management Features			
Roster			
Tracking Reports			
Group Management			
Import/Export/Migration			
Design and Structural Flexibility			
Gradebook Features			
Import/Export			
Flexibility of Views			
Customizability			
Other			
Technical Features			
Accessibility			
Mobile Device Compatibility			
Web Browser Compatibility			
Content System			
Communities			
Social Media Integration			
Web Conferencing Integration			
Scalability			
Backup/restore options			
Stability			
Single Sign-On			
Training			