Concise paper

A Comparison of Two Learning management Systems: Moodle vs Blackboard

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ABSTRACT

A trial was undertaken to consider whether Moodle warranted a more formal consideration as an alternative to the institution's current LMS. The results indicate that the product appears worthy of further consideration. This report documents the reflections of the instructor using Moodle to teach, the systems administrator supporting the system, and the students involved in a trial use of Moodle.

1. INTRODUCTION

Otago Polytechnic has been using Blackboard as a Learning Management System (LMS) for a number of years. Academic staff and students are familiar with using this tool within various courses. The IT Support (ITS) staff are also very experienced in the administration and maintenance tasks involved with this system.

During 2004, staff within ITS and the B.InfoTech trialled Moodle as an alternative to Blackboard in an existing course. A third year networking class (IT310) was selected as a trial case. All staff and students involved in this trial had previously experienced Blackboard. The course itself was primarily an on-site, in class course. The LMS was used as a tool to provide students with external access to various resources (handouts, links, software) as a forum for asynchronous discussion of various topics.

This report identifies the opinions and experiences of several of the main people involved in teaching a course involving a LMS, namely the instructor, the systems administrator and the students.

2. METHODOLOGY

2.1 Operational Sequence

ITS and academic staff downloaded, installed Moodle and became familiar with Moodle's general operation. We became aware that a comparison could not be adequately made without experiencing the tool being used with students in an actual course.

A course was selected that posed a low risk factor to students, IT310 – Third year networks. This course also included people who had previously experienced Blackboard in the same domain (year two networking). We felt that these students would be able to make direct comparison's as clients of both systems.

The course was conducted similarly to previous iterations with minor alterations designed to improve the course, these were independent of the LMS. The main aspects of the LMS that was used was the provision of resources such as course notes and software, discussion forums and the gradebook.

2.2 Course Selection and Risk Mitigation

We should not do anything that could potentially risk the student's learning experience. Any system that is not fully evaluated could potentially be detrimental to the students learning. The on-site course was selected as the role played by the LMS was not central to the students learning. If the LMS was a total disaster then the students would not be substantially disadvantaged. Also, this course was well developed on Blackboard. It would be possible to migrate the students to

that LMS at any stage during the trial.

Data was gathered from students via a survey at the end of the course. The instructor and sysadmin kept notes of their experiences.

2.3 Data Collection

The current trial of Moodle was an initial investigation. The intention was to identify whether of not Moodle was worth a more complete trial and evaluation. The design brief precluded any recommendation of whether or not Moodle should be adopted.

To accomplish this aim the course instructor and the ITS systems administrator kept journals and notes on the implementation. Towards the end of the project the students were asked to complete a small survey.

3. RESULTS AND DISCUSSION

3.1 Systems Administrator

As Moodle is an Open Source software package (OSI 2004), the purchase cost to the organization is nil. Moodle requires a platform running Linux, Apache, MySQL and PHP; this set of applications is often referred to as a LAMP. The ITS department at Otago Polytechnic has well established experience in administering and maintaining such systems.

The trial used Moodle version 1.4.3 on an Intel Pentium 700 with 500mb RAM. The installation wasn't overly tricky. However, the install instructions accompanied the download were not overly helpful when various issues did occur. The installation of Moodle's prerequisite applications was made very easy with SUSE's configuration tool YAST.

We initially installed the test system on Novell's SUSE Linux 9.0 professional. When the decision was made to release Moodle to a production environment with students, the system was reinstalled using Novell's SUSE Enterprise Server 9.0 as this is a more robust and stable server environment.

Version 1.4.3 of Moodle has its own user database. There are modifications to the current system that allow the use of LDAP as a user database. We are looking forward to version 1.5 as LDAP will then be configured during the installation.

One of our current issues is that we cannot interface directly to the backend database of Blackboard without breaking terms and conditions of purchase. We wish to do this to reduce the administration overhead of maintaining student accounts on blackboard. There is no technical reason why this cannot be done, the database is able to be queried and modified. However, as Moodle is Open Source, we were able to apply a middle-tier system to load students directly from our SMS (Student Management System) into the MySQL database of Moodle. This is huge time saving for the eLearning administration staff.

To make the move to Moodle from Blackboard would depend on the ability to import courses from Blackboard or Blackboard cartridges into Moodle.

We have had no real issues with Blackboard apart from the yearly cost of licensing which has made us start to look for alternative systems. We also take issue with the license restriction against customizing Blackboard as we would wish. This is echoed by Scavo (2004) who reports that rather than cost, "the key appeal of open source software is that it avoids vendor lock-in and gives buyers the freedom to choose what to do and when to do it"

The problem resolution procedures between the systems are quite different. With a closed system like Blackboard usually, the problem is logged or ticketed and then someone is assigned to your problem. With an Open Source system such as Moodle you need to search the user forums and if no one else has had the same problem, you then submit your problem to the forum hoping that someone can help. This can sometimes be problematic; more so if the problem is critical

While the product is free, the overall cost of running an Open Source product is not nil. Our observation is that GPL software may have a higher installation cost (due to time). This cost is primarily in the installation stage when initial configuration and tuning of the system is occurring. These can be a steep learning curve. From a systems administration perspective, Moodle is able to be run on lighter hardware (slightly older), with less maintenance, and the removal of yearly

license costs are big bonuses.

Overall, Moodle seemed to be very stable and relatively quick on the hardware we used for the trial. Very few administration issues occurred during the trial.

3.2 Instructor

The interface to Moodle seemed reasonably straight forward. There were a number of things that were vast improvements on Blackboard 5 which is used in other courses. As this course is primarily on-site, our use of a LMS is limited. However, that use is the core of the system. The main features we used were the supplying of resources, discussion forums and gradebook

3.2.1 Resources

Course resources are listed on the main course page. There were several features which were a vast improvement on Blackboard. Amongst these were:

· The ability to move files between collection groupings or folders

· An HTML editor for describing resources or making linke (I am sick of typing HTML into blackboard)

· The ability to hide or show items by clicking on an icon rather than entering a whole configuration page via a control panel

However there were some aspects that were not as well implemented. It is possible to go through blackboard , prior to the beginning of the course, setting the date and time that various resources should appear. This was totally manual in Moodle. If I forgot to make resources viewable, they remained hidden until either I noticed or a student requested access.

3.2.2 Discussion Forum

Moodle has been developed from a constructivist philosophy model. The discussion forums are far more developed than we experience with Blackboard. The class engaged in an on-going discussion with a local business manager, and from this had to develop a proposal for improving IT security. The aim was not so much to assess the students security proposal as to give the students an experience interacting with a non-IT client.

It was very useful to have the discussion forum email the user when a new message was posted. The email would contain a link that would allow the student to reply via the forum. But the thing that I found really useful, was the ability to dissect forum discussions. When a particular thread moved away from the original point of the thread it was possible to move the message, possibly to create an entirely new thread. This was a simple tool but one that proved extremely useful.

3.2.3 Gradebook

The grade-book in the version of Moodle that we installed was far inferior to Blackboard. It did not perform any calculation or apply weighting to arrive at a final grade. Apparently this has been implemented in later versions

3.2.4 Other

The main feature that was missing in Moodle was the ability to import quizzes developed by publishers for WebCT or Blackboard. Several courses that I teach use textbooks that come with resources such as these. I find them extremely helpful, and students report that they are good study aids. These tools reduce the tutor workload, an important factor in online courses (Young & McSporran 2004).

While I am enthusiastic about everything that I have experienced with Moodle – the ability to import text-book resources created for Blackboard is a “deal breaker”. Without this I would not voluntarily choose Moodle over Blackboard, if it is implemented then I would migrate immediately.

3.3 Students

The students were asked to complete a small survey near the end of their course. This was offered online. The class had a population of 20, the survey received 14 respondents.

The survey asked the students, in hindsight, which system they felt was easier, and which they preferred. Table 1 shows the results for ease of use. An additional column gave the students the

Table 1 Which was easier to use for the following activities?

			BOTH	MOODLE		
ACCESSING COURSE NOTES	0% (0)	0% (0)	40% (4)	50% (5)	10% (1)	10
ACCESSING ASSIGNMENT REQUIREMENTS	0% (0)	0% (0)	36% (4)	45% (5)	18% (2)	11
ACCESSING GRADES	0% (0)	9% (1)	55% (6)	18% (2)	18% (2)	11
CLASS COMMUNICATION (FORUMS/DISCUSSION BOARD AND EMAILS)	0% (0)	0% (0)	9% (1)	45% (5)	45% (5)	11
GENERAL NAVIGATION AROUND THE SITE	0% (0)	18% (2)	18% (2)	45% (5)	18% (2)	11
TOTAL RESPONDENTS						11
SKIPPED QUESTION						3

Table 2 Which did you PREFER for the following activities

	MUCH PREFER	SLIGHTLY PREFER	BOTH ABOUT THE SAME		MUCH PREFER	
ACCESSING COURSE NOTES	10% (1)	0% (0)	40% (4)	20% (2)	30% (3)	10
ACCESSING ASSIGNMENT REQUIREMENTS	10% (1)	0% (0)	40% (4)	10% (1)	40% (4)	10
ACCESSING GRADES	0% (0)	10% (1)	50% (5)	0% (0)	40% (4)	10
CLASS COMMUNICATION (FORUMS/DISCUSSION BOARD AND EMAILS)	0% (0)	0% (0)	30% (3)	20% (2)	50% (5)	10
GENERAL NAVIGATION AROUND THE SITE	0% (0)	20% (2)	30% (3)	10% (1)	40% (4)	10
TOTAL RESPONDENTS						10
(SKIPPED THIS QUESTION)						4

option of saying that they could not remember this item in blackboard. As that was never selected it is deleted from this report. Table 2 displays the result to the students being questioned about their preference. Again, a "can't remember or didn't use" option was offered to the respondents but not taken, so not reported.

Students were asked for an overall vote on the system. This is shown as Table 3

The final question asked students for any comment that they would like to make about the two tools. Only three comments were received

· *It's great to see open source applications being used in a commercial environment. Hopefully the use (and relative success) of moddle [sic] will convince those higher up that open source applications can be useful - and save lots of money at the same time.*

· *Moodle provides a generic interface for completing the majority of tasks required. Customization for the Otago Polytechnic would result in further benefits for students or a complete build. (3rd year project?). Use free keep fees down.*

· *Moodle is outstanding because its free to use! why pay for blackboard when moodle can perform EXACTLY the same tasks?*

Table 3 Which did you prefer as an overall tool for learning?

	RESPONSE TOTAL	RESPONSE PERCENT
MOODLE	8	80%
BLACKBOARD	2	20%
I DON'T LIKE ANY OF THESE TOOLS	0	0%
I PREFER A DIFFERENT TOOL (PLEASE SPECIFY)	0	0%
TOTAL RESPONDENTS		10
(SKIPPED THIS QUESTION)		4

3.3.2 Student Discussion

The students seem to prefer Moodle to Blackboard on most counts. It is interesting that they liked the gradebook as Blackboard offered a weighted grade whereas Moodle just displayed the raw score. Students then had to perform their own weighting calculation. The final comments show that the students were acutely aware of the open source nature of Moodle, and approved. While the students were aware that they were partaking in a trial, we did not emphasise the Open Source aspect of the product. While Moodle is receiving their almost total endorsement, it may be that computing students see anything that is Open Source as inherently "good".

4. CONCLUSION

Moodle has some interesting features. The fact that constructivist thinking is designed into the tool, rather than as an afterthought, is a good thing. Some further development is necessary before the product would be adopted by choice by the instructor in this trial but these features appear to be currently in Beta.

The GPL licensing provides opportunities for localized integration of the LMS with other systems. This aspect alone is enough to make the systems administration team enthusiastic to continue considering the product. Development of the LMS also gives opportunity for various capstone projects. While Moodle is free to acquire and use, administration and maintenance costs are often more significant than purchase (Brown & Eis 2003). However, in this case Moodle appears to be relatively straight forward to run

All of those involved in the project were impressed by Moodle and continue to consider its place as a resource within the learning environment. We are recommending to our e-learning team that the product shows significant potential and should be seriously considered for further investigation.

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