Let's get ready to Moodle


Abstract

The growth of e-learning has been described as explosive, unprecedented, and above all, disruptive. The e-learning movement is gaining momentum and for teachers of Information Technology and Management pressure to get courses online is increasing. The majority of early e-learning adopters in New Zealand decided to adopt mature learning management systems (LMS) like Blackboard and WebCT. More recently a number of tertiary institutions have been looking to the open source community to provide a less expensive and hopefully equally functional e-learning support system. Internationally, and particularly within New Zealand, there are a growing number of institutions looking towards Moodle, an open source LMS built using PHP and MySQL.

This paper investigates Moodle from the viewpoint of an IT lecturer who has published courses on Blackboard for several years and who is facing the distinct possibility of having to migrate to Moodle in the near future. The paper compares the functionality of the two systems and examines issues such as materials migration, assessment, collaboration tools and activity reporting.

Keywords

Learning management system, Moodle, constructivism, Blackboard, course setup

1. Introduction

Learning Management Systems (LMS) have matured significantly over the last fifteen years. The increasing sophistication and improvement in user features of these systems has lead to an explosion in the number of institutions using LMS to deliver blended learning and distance education courses (Phillips, 2004). The early adopters of e-learning were attracted by the ease of use and functionality of systems like Blackboard and WebCT, and as a result they are now the most dominant LMS in use among tertiary educators. While Blackboard and WebCT are feature rich, they come with a hefty price tag, and as such, many smaller institutions have struggled to justify the expenditure required to provide the LMS needed to support e-learning. The open source community has come up with a number of more affordable alternatives and systems such as ATutor, Claroline, and Moodle now provide many of the features that have made Blackboard and WebCT so popular.

In New Zealand, Moodle has proven to be the most popular alternative to the major commercial products, attracting a growing number of polytechnics and private training establishments. Institutions such as Auckland University, Wairiki Polytechnic, Tairawhiti Polytechnic, the Open Polytechnic Nelson Marlborough Institute of Technology, Bay of Plenty Polytechnic, the Western Institute of Technology and Northland Polytechnic have already adopted Moodle, while EIT Hawke’s Bay, Otago Polytechnic and a number of other tertiary institutions are keeping a watching brief. Add to this the eCDF (e-Learning Collaborative Development Fund) funding provided by TEC (Tertiary Education Commission) to The Open Polytechnic and the apparent adoption of Moodle by TEC for courseware development; and the case for keeping abreast of the Moodle movement becomes apparent.

This paper compares the features of Blackboard and Moodle from the viewpoint of a
technically proficient e-learning instructor and provides advice for tertiary institutions that may be considering a change in their learning management systems. It starts by investigating the pedagogical support for the use of computer mediated tools in the delivery of educational courses and identifies the features that educationalists suggest are necessary to provide a meaningful learning environment. The paper then compares the features offered by Blackboard and Moodle, and describes the experiences of a lecturer attempting to migrate a course from Blackboard to Moodle and briefly discusses the attitudes of students who have experience working with both platforms. The paper concludes by offering practical advice to institutions that may be considering a change in platforms.

2. Pedagogical Support for the Use of LMS

Research would suggest that e-learning has some way to go before it could be said to be able to fully duplicate the experience of well conducted face to face learning (Johnson, Aragon, Shaik, & Palma-Rivas, 2000). For learners who through choice or circumstances prefer to participate in blended delivery or distance learning, e-learning offers a viable alternative.

The constructivist approach to learning is one of the most popular educational principles among educational sociologists today. The principle has been credited to Jean Piaget (1975), who suggested that knowledge is actively constructed by the learner, not passively received from the environment. Social constructivism, an extension to constructivism, has ideas that can be traced back to Vygotsky (1978). It focuses on the roles that society plays in the development of an individual. The social world of a learner includes teachers, friends, students, administrators, and participants in all forms of activity.

Teaching strategies using social constructivism include negotiating meanings with students, class discussion, small-group collaboration, and valuing meaningful activity over correct answers (Wood et al, 1995). A constructivist perspective views learners as actively engaged in making meaning, and requires that teaching looks for what students can analyse, investigate, collaborate, share, build and generate based on what they already know, rather than what facts, skills, and processes they can parrot (Dougiamas, 1998).

If learning management systems are to be used in support of distance learning, they should provide opportunities for learners to interact with instructors and fellow students, and allow learners to share ideas, build concepts based on existing knowledge, reflect on experiences and construct knowledge. Both Blackboard and Moodle provide collaborative tools like email, chat, discussion forums, virtual classrooms and reflective journaling features that assist students as they construct knowledge.

3. Blackboard and Moodle Comparison

Blackboard is a commercial product produced by Blackboard Inc. and is partially owned by Microsoft. Blackboard is the most dominant LMS. The provider’s web site claims that there are more than 50,000 sites in more than 70 countries. The current version is version 6 and users pay a yearly license fee based on the number of students that a site supports and the type of LMS platform used. Blackboard is a mature LMS with a large number of features that support blended and distance learning. The user interface is very intuitive and the majority of educators can, with minimal training, place materials on a server available for online delivery. Blackboard offers users a full and detailed online help system and is supported by user forums and Blackboard sponsored user conferences.

Moodle is provided freely as Open Source software (under the GNU Public License), which means that while Moodle is copyrighted, users are allowed to copy, use and modify Moodle provided that they agree to - provide the source to others; not modify or remove the original license and copyrights; and apply this same license to any derivative work. Moodle was first released in 2002 and was developed as an educationally sound alternative to Blackboard by Martin Dougiamas of Curtin University. Dougiamas now leads a team of developers worldwide who aim to continually improve
the product for a growing number of educators around the world. The Moodle site claims to have more than 3,200 sites in more than 115 countries. Dougiamas claims that the design and development of Moodle is guided by social constructivist pedagogy with an emphasis on tools that promote collaboration and self evaluation. Moodle provides many of the tools available within Blackboard, however, the user interface is more primitive and the online help is minimal in comparison. Like Blackboard, Moodle is supported by user forums and the Moodle community within New Zealand has started hosting Moodle user conferences.

While Blackboard has a reputation of being a stable commercial product that has been adopted by thousands of educational institutions worldwide, it comes with what many perceive as a "hefty price tag". Blackboard has many features that enable it to be customized to meet the individual needs of an institution, however, the process for making changes to the basic functionality of the system requires considerable community support and is very time consuming. In comparison to Blackboard, Moodle is a relatively immature product, although it has a growing reputation for stability. The early adopters within New Zealand have found that they have been able to influence the Moodle development team, and support for functionality changes has been both positive and timely.

4. Converting Two Courses

As a result of its growing worldwide and national popularity, a number of New Zealand polytechnics have adopted Moodle. The e-learning management team at the Eastern Institute of Technology (EIT) Hawke's Bay indicated that Moodle should be considered as an alternative to its existing Blackboard system and the writer, a keen exponent of Blackboard, decided to undertake a trial evaluation by attempting to duplicate a third year Web Application Development course using Moodle hosted on an internal EIT network. This was followed by an on-line trial, where Moodle was installed on a server which could be accessed externally using the Internet. This external platform was then used to support a second year Data Communications and Networking degree course.

The remainder of this paper describes the experiences of the lecturer and the students who participated in the two courses. The experiences of the lecturer as he went about setting up the courses and used a number of the features that Moodle provides are described, followed by some of the students' reactions who compared the features of Moodle to those of Blackboard.

5. Setting Up The Courses

Moodle claimed to able to import courses exported from Blackboard. Experimentation with the import facility proved fruitless. By tinkering with the Moodle code it was possible to import major headings and some associated documents, however major content such as quizzes, surveys, grade books and discussion forum content were unable to be successfully imported. Investigation at the Moodle site suggested that while problems exist with the current version of Moodle the importing problems should be solved with the next release. Having been unable to import content automatically, the writer decided to attempt to set up the course manually. Six months later the import process was tested once again, with similar results to the first attempt.

Setting up a new course was a relatively straight forward exercise. The online and site documentation did not really explain in any detail the function of the configuration tools, however experimenting with each of the tools enabled the course to be created and users and teachers added. The technician supporting the EIT platform was able to import students in bulk using a list of students exported from the institution's student management system without too much difficulty. The ability for students to self-enroll using a course key was also trialed; this feature was found to be simple to implement and worked well.

The process of making changes to the visual appearance of the course, which appeared primitive compared to Blackboard, was easily achieved using Moodle's theme feature. Moodle has adopted a one screen approach to editing course content; everything is done in one place in comparison to Blackboard where changes to content are made using the "Control Panel". The Moodle approach is far more intuitive and reduces the
number of steps needed to add a document or create a resource.

Since Blackboard at EIT is used primarily for course document management in support of blended learning, the writer attempted to duplicate the familiar look and feel of Blackboard using Moodle. This proved to be a frustrating exercise, as Moodle once again provided minimal online help and, unlike Blackboard, it appeared to adopt an approach where materials are organized into topics or weekly occurrences. Experimentation showed that Moodle has three modes of operation. Courses can be in community mode where discussion forums are displayed, in topic format which is similar to the traditional Blackboard format, and in a weekly format where materials are displayed in chronological order week by week. It did not take the author long to drop the topic approach that had been used by Blackboard and adopt the week by week format, as it encouraged better document organisation and students, when shown the result, indicated preference for document presentation based on time.

The next step in the evaluation process was to attempt the setting up of quizzes and surveys. Moodle documentation suggested that it supported all the Blackboard quiz and survey features as well as providing several extra features, including duplicate answer matching and embedded descriptive text and graphics. Once again Moodle claimed to have a Blackboard import process, which despite numerous attempts failed to work. It was possible to import quizzes, which converted the Blackboard quizzes into a text only format that Moodle was then able to import. Creating new quizzes in Moodle proved to be a simpler process. Like Blackboard, new questions are placed in a categorized pool for the course and you can then easily select questions for an individual test from the pool. Moodle offers an impressive number of test control features and accurately records the results of any quiz attempt in great detail. Moodle also offers a number of text importing facilities, where test questions can be created off-line using a text editor such as notepad and imported directly into the question pool. A similar feature is available in Blackboard, but only in the Enterprise edition.

The next feature duplication attempted was the discussion forum. Forums were easy to set up and control, however the way that postings are displayed did not clearly distinguish between an original posting and a reply. What was seen as a shortcoming was easily overcome, when the author discovered that Moodle allows several different formats for displaying forum contributions. Moodle can also be configured to allow or disallow course participants to create their own forums. This feature was not discovered until a group of students decided to create their own social forum. The forum proved extremely popular with students, who used it to share ideas and jokes and organize groups for assessment activities.

Moodle, unlike Blackboard, does not use announcements; instead it utilizes a news forum, which displays messages in chronological order. When students were shown this feature they indicated a preference for the Moodle methodology. An impressive feature of Moodle, which the writer had not used in Blackboard, was the scheduler. The scheduler is linked automatically with the news forum and the quiz and assessment creation tools. It automatically warned students of approaching assessments quizzes and activities. The scheduler proved very easy to set up and was enthusiastically received by students.

Moodle was able to duplicate the assignment features of Blackboard; configuration was simple and the control features were sophisticated and easy to apply. The reporting tools and grade book features were somewhat primitive when compared to Blackboard. Experimentation with the Moodle grade book showed that it could automatically report students results for quizzes, and that it could easily be used to deliver students the results for assignments that were not included as part of the Moodle environment. While a wide range of activities can be reported, Moodle does not supply the graphical reporting features of Blackboard.

Group work tools are a strong component in Blackboard. Even though Moodle indicated that group work features were supported, the writer was unable to get them to operate effectively and the supplied documentation did not provide much assistance. A check using a Google search of the Internet revealed that a number of users had struck similar problems and the solution was rapidly identified. The group work tool was
checked as being unavailable on the desktop, and once it was selected the creation of groups was a straightforward exercise. Chat facilities and virtual community features proved easy to set up as did the glossary, snap poll and student journal features.

The aim of the evaluation was to duplicate the features of Blackboard using Moodle. Apart from the lack of on-line help, Moodle was able to duplicate all the features that had been used in Blackboard. Moodle also provided a number of features that are not available in the standard edition of Blackboard.

6. Student Reactions

During the trial, students of a third year Web Application Development course and a second year Data Communications and Networking course were exposed to the features of Moodle. All the students had previously used Blackboard, and for the first course they were given the option of using Blackboard, Moodle or both. With the second course, the materials were delivered using only Moodle. Towards the end of both courses, students were interviewed to evaluate their reaction to the new environment.

When asked about the way that materials are organized on Moodle, all students found Moodle easy to use and preferred the way that Moodle presented materials week by week, rather than by topics within folders. Several students pointed out that the one page approach for presenting materials was preferable to the folder approach used in Blackboard.

When asked about Moodle's communication tools, most students indicated that they were happy with the forum and chat tools. Several students commented that they liked the way that Moodle automatically sent emails when a new posting was added to a forum. One student wrote, "Trying things out isn't very good though when you can't find your own post. I had to do a search by author to find it again!!!" suggesting that the collapsed view format of discussion forums output was not easy to navigate.

In terms of overall preference between the two systems, more than 80% of students stated that they preferred Moodle, while the remaining 20% stated that they did not prefer one system over the other. One student enthusiastically stated a preference for Moodle by saying "Moodle is a million times better than Blackboard, way easier to navigate through and find stuff, quizzes and crosswords are handy".

When asked if they would have any reservations if the Institute were to adopt Moodle as a replacement for Blackboard the majority of students suggested that they would be happy with either system.

7. Conclusion

The rapidly growing interest in Moodle within the New Zealand e-learning community as an open source virtual learning environment suggests that it would be unwise to ignore its likely impact.

On the basis of the writer's experiences in attempting to convert a course from Blackboard to Moodle, it would be unwise to suggest that Moodle is currently a mature product that could compete on an equal footing with Blackboard in terms of maturity and functionality. There are several features which the Moodle documentation claims to have that do not function correctly, in particular the content and quiz import procedures. The online help that accompanies Moodle is at best primitive and while Moodle claims that the interface is intuitive, the writer, a firm supporter of e-learning tools and a PHP developer, who has built a functioning LMS, had difficulty mastering some of the Moodle features.

During the evaluation, the writer moved from being a skeptic, who believed that Moodle adoption would be an unwise move, to an enthusiastic supporter of Moodle, despite its relative immaturity as a product. The way that Moodle encourages instructors to organize materials sequentially and the tools that Moodle offers instructors and students to encourage regular student participation in course activities, make it an attractive proposition as an institutional solution for supporting e-learning. The claims that Moodle was developed from the ground up with the principles of social
Constructivism in mind seem to be justified. The writer was so impressed with the Moodle approach that he has decided to stop developing the LMS that he has been using successfully in an intranet environment and move to Moodle.

For institutions that have no e-learning support tools, the writer whole-heartedly recommends the adoption of Moodle. For those who are using a different LMS and who are considering moving to Moodle, the writer suggests a more cautious approach. Regular users of alternative LMS will be reluctant to change and will find that migration requires substantial time and energy. Trying to duplicate the document storage approach of Blackboard and WebCT will not encourage instructors to take advantage of Moodle’s social constructivist approach and will frustrate instructors who have been happily using competitive commercial products. Successful migration will require an organization to invest in the services of an e-learning exponent who has experience developing courses using Moodle and who is a keen supporter of the constructivist approach that using Moodle encourages. A person who can motivate staff, point out the advantages that Moodle offers and explain best practice for converting courses.

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References