Integrating Moodle into a Course for Pre - and In-service Teachers

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Abstract: This paper discusses integrating Moodle, an Open Source course management system (similar to Blackboard), into a course designed to expose teachers into ways to use and integrate computers into their instruction. One problem in preparing teachers to use software in schools is the likelihood that the software taught in the course will not be available in the school where the students end up working. Using Open Source software can mitigate that problem. Toward that end, Moodle, rather than the university-supplied Blackboard, was used as the course management system, providing students with resources, assignments, and discussion boards. As a final project for the course, students used Moodle to build their own course, using the assignments they had done in class as content in their course, making Moodle a means of developing a portfolio of their work.

Classroom Context

Computer Applications in Education is an introductory technology course similar to those offered in many colleges of education. Students are introduced to using email, the web and productivity applications to support their teaching and the learning of their students. This course serves several purposes. It is a first course for students in our Instructional Technology Master's degree program and as a pre-requisite for other courses in the doctoral program. It is also a core course for pre - and in-service teachers in other Masters degree programs. The diversity of the students' reasons for being in the class results in an even wider range of technology abilities than is often seen in such courses.

One goal of the course was to design assignments that would be challenging and helpful to students with such a wide variety of technical skills. A frame used to guide the assignments in this course was to help students learn to solve computer problems in their classrooms using whatever means they had available. For example, the first assignment was for students to put a document on the web which described how to put a document on the web. Students were to report not only the steps required to get their file to a web server, but also the steps they went through to learn to solve this problem. Those who were already comfortable with publishing on the web were instructed to find a new way to do this (e.g. use a different tool for creating or uploading the page). Other assignments had students find examples of using various applications in classrooms similar to those that they were—or expected to be—teaching in.

The Importance of Free Software for Educators

The free software movement started almost twenty years ago (Stallman, 1985). Stallman's vision was to provide a complete operating system and utilities necessary to make computers useful without having to pay for software. Additionally, he believes the source code for all of these programs should also be available to allow people to study and change the programs, not merely that programs be available for use without payment (and neither of these classes of programs should be confused with "shareware," which does require payment to use it legally). The importance of this distinction, even for those who have no intention of modifying a program, is that a program's life is not dependent on a particular company; anyone can continue to maintain and improve a program even if the original company or individual who produced it ceases to exist. Stallman's dream has largely been realized by the combination of Stallman's GNU project and the Linux kernel (though Stallman is not completely satisfied http://www.newsforge.com/software/04/01/05/1146229.shtml).

For the school technology coordinator, free and open source software have the obvious benefit of being less expensive to procure than their non-free counterparts. Another significant advantage, however is that no bookkeeping is required to see that every computer is compliant with non-free licensing restrictions. When a new machine comes into the school one can set up a system immediately without the overhead of checking that

additional licenses are available. Many schools became painfully aware of this problem last June when Microsoft sent letters to school administrators warning them of possible software audits. The possibility of such an audit, however unlikely, combined with the availability of OpenOffice.org are reason enough not to use Microsoft Office. As a result, more schools are looking at completely free systems like the K12 Linux Terminal Server Project (http://k12ltsp.org/).

Another benefit of free software is its ubiquity. Those who learn to use free software will be able to use it wherever they go, as the availability of the software will not be determined by budgets or purchase orders, but the software will be available for the trouble downloading and installing it. Teaching students to use widely acclaimed but expensive packages is likely to be of limited use in many schools where they go, leaving students in the uncomfortable position of choosing among not using the skills they have, paying out of pocket or illegally acquiring a copy of the program.

Moodle: A Free Course Management System

Moodle (http://moodle.org/) is a web-based course management system (Blackboard is a popular non-free course management system) designed to support Internet-based courses. It is also able to provide web-based support to face-to-face courses or make course assignments available to parents. Moodle is well-suited to use in K–12 schools because it is Open Source and will run under Windows, Mac OS or Linux, so a teacher with some technical savvy can get a Moodle server up and running—even on a desktop computer in a classroom—without worrying about licensing with the associated money and paperwork. Because Moodle is Open Source, anyone with programming skills (or the funds to hire a programmer) can also adopt Moodle to meet specific needs of the school or district. Because Moodle's alternatives (e.g. Blackboard and WebCT) are expensive and typically require a dedicated server they are not likely to be available in many K–12 schools, so making teachers aware of free alternatives seems especially important for this class of software.

This course used Moodle to make readings available, to publish and collect assignments and to provide a forum for online discussion. One common use was to have students turn in an assignment by posting their work on a forum. This allowed other students to s ee the work of their peers and provide feedback.

A Brief Introduction to Moodle's Features

Moodle was used to give students assignments, and in most cases, to turn them in. This section shows how Moodle was used to support the course and provides examples of different ways we used Moodle for assignments.

Main Screen

This page shows the main page for the course. For this course, which met once a week, we used a weekly outline. Moodle also offers a "Topics format," which is not tied to a calendar and a "social format," which includes only a discussion board. To each "week" or "topic" the teacher can add activities like forums, assignments, or resources (like uploaded files). The next sections will give examples of how student work was assigned and turned in. For all assignments Moodle allows the teacher to grade the assignment and record the grade online.
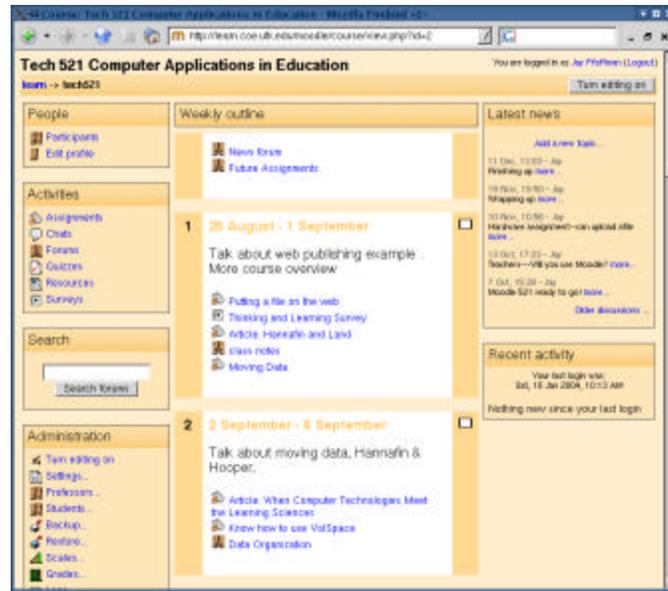
Assignment: Offline Assignment

In Moodle "Offline activities" are those that are not handled by Moodle. These might be assignments handed in on paper, or presentations in the classroom. For several "offline activities" in this course, students submitted a URL for their work to Webliographer, a URL database (Pfaffman, 1997).
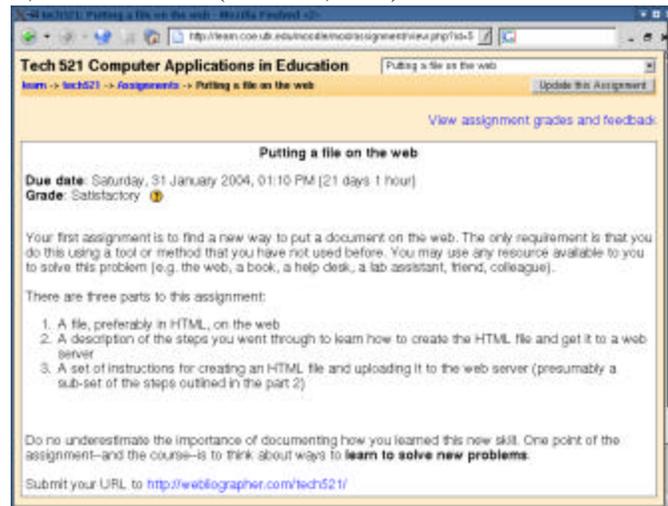

Assignment: Upload a Single File

Moodle also allows students to upload a file to the server. The teacher can then view the files of all the students and grade them. At the teacher's option, students can upload their file multiple times until the due date.
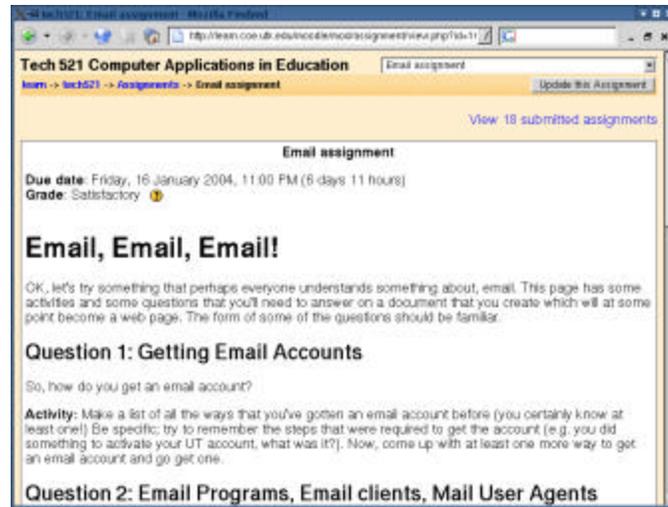
Forum

For some assignments in this course students submitted their work in a forum. Moodle has several types of discussions; the one that we used for assignments allows each student to submit only one discussion topic, but students can post responses to other students' work. This was an effective way to give students a more authentic venue for their work than merely having the professor see it.
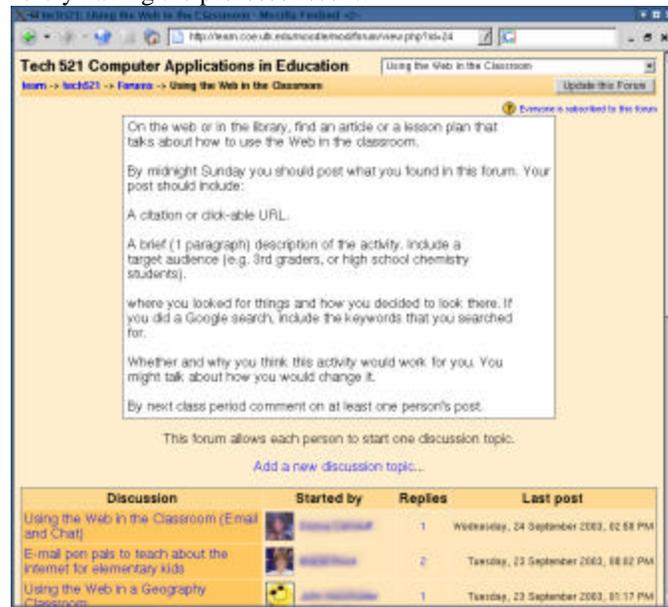
A New use for Moodle: Portfolio Manager

Throughout the semester students received formative feedback on their work, from both the professor and students. For the final evaluation a collection of all of their work seemed desirable. One way to accomplish that would be to have students create a web-based portfolio that included all of their work. The primary objective of the class is not web design, thus using Moodle as a means for collecting all of their work seemed like a preferable way for many students to publish on the web. Further, because many of the assignments were to create or find lesson plans, the affordances of Moodle aligned well with these assignments.

Upon first seeing how to create courses with Moodle, many of the in-service teachers were excited about the possibility of using Moodle in their own classrooms. One teacher, for example, was in a school that was starting to require web pages for each teacher's class, primarily for the purpose of letting parents know what is going on in each teacher's class. Though not adept at web publishing, a student in my class had been charged with collecting the information from the teachers in her school, converting it into a form suitable for publishing on the web and uploading the information to a web server. Teachers who wanted to make a change had to get the information to the teacher who would then update the file for them. For this teacher Moodle represented a way for teachers to publish and update their own information without requiring extensive training to learn how to create HTML documents and upload them to a server.

Using Moodle as a means for students to present all their work for the class worked well for some students, but much less so for others. Some students found clever ways to include all their work while demonstrating that they had explored Moodle's different features. Others included only some of their assignments using only one of Moodle's assignment types. When using this assignment in the future I will be more explicit about how students should demonstrate their knowledge of Moodle's features.

Conclusion

As more user-friendly Open Source software becomes available, Open Source software is increasingly important for education. Making teachers and future teachers aware of Open Source software and using it in education classes makes the skills taught in those classes more likely to be transferable to the classroom. Moodle is a good example of an Open Source application to teach students about since Moodle's competitors are often expensive and not often available in K–12 schools. Moodle worked well as a means to manage this course's assignments and giving students the opportunity to author their own Moodle course is not something that would be possible using the University's commercial course management system. With very little training students were able to author their own courses in Moodle.

References

Stallman, R., 1997. The GNU Manifesto. Online [Available: http://www.gnu.org/gnu/manifesto.html].

Pfaffman, 1997. Webliographer: Managing Web Resources for a Virtual Community. Sixth Annual International Conference on Telecommunications and Multimedia in Education '97, Austin, Texas.