

Moodling Around: A Tool for Interactive Technologies

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Virtual Learning Environments (VLEs) are becoming a widespread means of facilitating learning. The Moodle VLE is one of many technology tools that enable and support online learning. It is a user-friendly, free, open-source tool used to deliver instruction online and to supplement face-to-face learning.

Introduction

As the nature of teaching changes, so too do the tools that are used to facilitate that learning. Virtual Learning Environments (VLEs) are becoming part of teaching in the form of hybrid courses, supplemental materials, or as delivery vehicles for completely online courses. One of those VLEs is Moodle. This article introduces the basics of Moodle, how it compares to other Course Management Systems (CMSs) and/or Learning Management Systems (LMSs), how it is used in various environments, such as K-12, higher education, and corporate organizations, and the benefits, challenges, and implications that are commonly associated with its use.

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What Is Moodle?

Moodle has a two-fold meaning. Originally it was created as an acronym for Modular Object-Oriented Dynamic Learning Environment. According to the Moodle Website, <http://moodle.org>, the application is no longer strongly object-oriented and uses other scripting language to make it more user-friendly. The second definition of Moodle is "a verb that describes the process of lazily meandering through something, doing things as it occurs to you to do them, an enjoyable tinkering that often leads to insight and creativity" (Moodle, para. 4). Those who use Moodle are "Moodlers."

Moodle is described as both a Course Management System (CMS), allowing for storage of documents, the posting of announcements, and limited interaction as well as a Learning Management System (LMS), which is often thought of as more robust, allowing for more collaborative interaction. These terms and definitions are often interchangeable and malleable, depending upon the audience. Moodle fits into either of these systems, and, if necessary, a user could choose the system by the way in which Moodle is used. Moodle is not the only VLE (the preferred term, used to avoid the CMS/LMS debate) that is commonly used. Others include applications such as Blackboard and Desire2Learn. **Table 1** provides a comparison of these two VLEs and Moodle.

One of the differences among VLEs is cost. In the case of Moodle, the software can be downloaded free. It can be installed on any computer that supports an SQL (Structured Query Language) database. Moodle is based upon social constructivist principles and provides the tools for instructors and students not only to read from the Web, but also to write to the Web and contribute to the learning process. To that end, Moodle was developed as open-source software. Open source means that the software source code is made freely available, and users are able to use, modify, and improve the software. Copyright is retained and users are not permitted to remove original licensing and copyrights, but users do have additional freedoms and are permitted, even encouraged, to customize Moodle to meet their particular needs. Although the software was initially developed and copyrighted, Moodle is constantly evolving with the support of the Moodle community. This robust, supportive community is another reason users choose Moodle over other VLEs.

In general, a VLE is a tool that facilitates online learning, teaching, or training. Content can be delivered synchronously or asynchronously. Learning can be assessed through assignments, quizzes, discussions, and student interaction through activities such as wikis and blogs. The tool can be used as a document repository: syllabi can be stored, and assignment specifications and rubrics can be posted and made available to students

Table 1. Basic comparison of three VLEs.

	Moodle	Blackboard	Desire2Learn
Grading	Gradebook	GradeCenter	Gradebook
Student Activities	Quizzes, Glossaries, Polling, Surveys, Assignments, Chats	Quizzes, External Links, Assignments,	Quizzes, Self-assessments, Surveys, Reporting
Interaction Tools	Forums, Wikis, Databases, e-mail	Discussion Boards, Chat, Groups, e-mail	Discussion Forums, Locker (student storage), Blogs, e-mail
Assignment Submission	Assignments are uploaded by student and date-stamped	Tied directly to GradeCenter, DropBox	DropBox
Other Resources	Resources (electronic content), Wimba Live Classroom	Portfolios, content collection, SafeAssign, Wimba Live Classroom	LiveRoom (synchronous meeting room), portfolios, BlackBerry accessible
Tracking and Logging	Graphs showing access times, number of times read, and a detailed "story" of student involvement	Graphs and numeric data showing access times and areas, Performance Dashboard	Classlist—tracks user progress through the course
Benchmarks	Benchmarks are able to be added to courses	Benchmarks are able to be added to courses	Uses standards and competencies
Customizable	Very	Somewhat	Very
Countries/Languages	208 (registered) Over 70 Languages	Language packs with English, Simplified Chinese, Dutch, French, German, Italian, Japanese, and Spanish. More than 10 languages	World-wide implementation
Cost	Free (with option of fee-based external hosting)	Cost based on various factors including user and faculty count	Cost based on various factors including user and faculty count

any time, anywhere, in any place, and in any space. Since the interface is Web-based, students can access a course as many times as they wish, from any Web-enabled device, such as a laptop, iPhone, or PDA.

Common Applications

The Use of Moodle is not content- or field-dependent; therefore, many different organizations can create and make use of a Moodle.

K–12

A quick search of Moodle on the Web reveals that it is more commonly used by K–12 educators and instructors in higher education than it is in business, healthcare, and non-profit organizations. Moodle is used in K–12 schools for instruction, by internal committees such as department or grade level groups, for professional development, and to engage in outside

communication, such as the PTA and other school- or community-based organizations.

When asked, "What were your initial thoughts of Moodle when you first began using it?" five-year Moodle user, educational technology blogger, and long-time educator James Gates stated: "I loved the fact that... this tool was student centered...[i]f a teacher chose to use it that way. It provided tools that let the students contribute content...the glossaries, the wikis, the discussion forums, [if] approached the right way, could be a playground for students to play with content" (Gates, 2009). He claims that his original thoughts of Moodle still hold true, but problems arise because teachers are not using it in a student-centered way. He says: "[teachers] will use the discussion forums, but few use the other tools. Many like it for the quizzes...as it lends itself to the creation of true/false and multiple-choice questions, not the kinds of authentic assessments we are looking for today."

Troy School District in Michigan is completing its second school year with Moodle, and the District has found many benefits for its use within the school community. As an instructional piece at the elementary level, the District is using Moodle for book clubs, posting unit resources, in other areas, and, for example, during elections, to post election facts, candidate information, current issues, interactive Websites, political cartoons, and historical campaign commercials, and as an avenue for student mock voting. The District currently uses Moodle for its secondary science and language arts courses, and says it will roll out Moodles for all core subjects. The current courses post videos, persuasive essays, and exams, and make use of the discussion forum feature. A teacher in Troy states that the "kids love seeing others' comments and they took [the feedback] seriously," and another claims, "the persuasive essay topics are current and relevant to them" (Williams & Crawford, 2009).

Gates also discusses another Moodle success story. He explains how one middle school teacher had his students add vocabulary words to the Moodle glossary each week. The teacher had to change the settings to allow multiple entries on the same term, since the students who rode the bus home complained that the walkers got home first and had the words entered already. "You've got to love a tool if kids fight to be able to use it" (Gates, 2009). This "fight" to use technology tools prepares students to meet the Michigan Educational Technology Standards and Expectations as well as the State of Michigan Merit Curriculum Requirements, which include an online learning requirement necessary for graduation (MDE, 2009).

Higher Education

As more K-12 schools begin to access various VLEs, including Moodle, higher education professors will need to follow suit in order to keep their students engaged and continue preparing them for careers and employment in the 21st century. An Oakland University professor has been using Moodle for the past four years for teaching program evaluation and instructional technology to graduate and undergraduate students. He said, "I have much experience in many learning [management] systems and this was quite an easy system to get used to [using]" (Quinn, 2009).

An instructional technology professor at Wayne State University has used Moodle and claims that Moodle helped her learn "how to use technology in the classroom." She goes on to say that it added "another form of interactivity, and most importantly, communication, a grading system, [and] student-to-student interface" to her instruction (Tracey, 2009). A professional colleague at a private university uses Moodle as a recruitment system in a nurse anesthesia graduate program. Potential applicants worldwide

can log into the Moodle to gain career information as well as interact with faculty, administrators, students, and alumni (Dosch, 2009).

Instructors who used Moodle with undergraduate students in a physics course found that posting new material every two weeks allowed the students to work with content and on problems and exercises that would be covered in the upcoming classes (Martin-Blas & Serrano-Fernandez, 2009). They also found, as did Tracey (2009), an increased level of interactivity with students through the use of chats and forums. Instructors can communicate with their students using the personal message feature in Moodle. "This tool has been proven to be very useful for many students, as they can ask questions of their teachers and other students in order to clarify specific aspects of the tasks they are performing. This is an important aspect of the learning process, because the students feel more confident if they know that their teachers will answer their doubts and questions personally and privately" (as cited in Martin-Blas & Serrano-Fernandez, 2009, p. 41).

Corporate

A classified advertisement was posted on the LearningTown! Website (2009), a social network for learning professionals, searching for Moodle users in other arenas. Only one response was received. However, Murali Padmanabhan, who has been a Moodle user in the corporate field for four years, states that some departments within his company use Moodle for tracing their training. Initially, Padmanabhan "thought it [Moodle] was more suited for schools and academic institutions, and was [too] difficult to be used in a corporate environment," but now thinks "it will give enterprise LMS vendors a run for their money" since all you have to do is, "just download, install, and start using." Padmanabhan also feels that Moodle is keeping pace with the current learning trends, and views the "adoption [of Moodle] in the corporate environment to be on the increase" (Padmanabhan, 2009).

Healthcare

Moodling isn't confined to formal training, as in schools or corporate environments. Any teaching and learning opportunity can benefit from a Moodle. Healthcare offers another field that is supported by Moodles. Annual training, mandatory skills, and certification skills can be enhanced by using Moodles on topics such as assessment of child and family, neonatal care, basic life support and resuscitation, and many others.

As highlighted in the Blood Pressure Measurement (2007) course site, the background, principles, and equipment necessary for hands-on skills can be taught online.

Benefits

The benefits of using Moodle include managing content, organizing courses, monitoring learning progress, and promoting involvement and collaboration (Angeli, 2006). These are similar benefits to any VLE. What may set Moodle apart from others is the cost, or as is the case for Moodle, that there is no direct cost to the consumer.

As we seek a higher quality of learning coupled with today's economic concerns, Moodle as a free-open resource can provide many benefits with regard to its functionality and features.

Berry (2005) summarizes benefits, including instant feedback, motivation, opportunity to review work, sense of community, and technology literacy. Bremer and Bryant (2005) elaborate and report that constructivist thinking is supported through Moodle.

Moodlers can apply strategies such as Gagné's Nine Events of Instruction. For example, colorful presentations can be used to gain attention; navigable course sites and structured content can be used to present learning materials; discussion forums provide peer support; and the digital drop box is a platform for teachers to review students' work and give feedback (Cowan, 2007).

Moodlers are further supported by the vibrant learning community at *moodle.org*, which has robust discussion boards dealing with application, issues, tips, challenges, successes, and modifications. One focus of the discussions centers on the ability to modify, update, and include various plug-ins to best suit individual classroom needs and instructor abilities.

With the diversity of populations and globalization, learning becomes a social collaboration process, which geographically and demographically connects learners from different nations. Moodle, with all its functions and features, meets the needs of a culturally dynamic learning environment, and establishes virtual communities to exchange resources within the training industry and non-profit organizations (Stevens, Gatling, & Murdock, 2004).

Challenges

As with any other new technology, software, or skill, a plan needs to be developed for the effective implementation of Moodle into any environment. "It is sometimes a challenge to get teachers to adopt these systems" (Adams, Ngampornchai, & Khawaj, 2009, p. 1). Organizations need to decide how and who will use Moodle, then develop and implement a training plan for all users.

Tammy Maginity, Technology Coordinator at Pennfield Schools in Battle Creek, MI, told MACUL (Michigan Association for Computer Users in Learning) attendees that, "I'm not going to lie to you; you're

going to have to put a lot of time in creating this site and putting things in there" (Maginity, 2009). To assist teachers with this issue, another local school district provides a workshop environment for their teachers and allows each teacher group four to five days for gathering resources (Williams & Crawford, 2009).

Gates advises new Moodle users to "design the class with students in mind. Give them every opportunity to contribute, and DO NOT look at Moodle as just a place to post handouts or to give quizzes" (Gates, 2009).

Quinn suggests learning Moodle by "starting slowly and with a little use, for example, just uploading materials for use. Then, maybe have some discussion as part of a blended course. Then, maybe include grading/quizzes. I always think it is efficient to go to a short [training] course or a series of short courses rather than figuring it out for oneself" (Quinn, 2009). The gradual process allows for both students and instructors to become familiar and confident with the online tool.

Implications

Moodle is one of many VLEs that can be used for designing, managing, and potentially delivering instruction or training. Moodle can aid instructors by providing a place to record and publish grades, to post documents necessary for learning, to track discussion and participation, and generally to manage the online component of a course. Students who Moodle are able to manage their learning through the review of documents, online discussion, constant access to the gradebook, and other features Moodle provides. Moodle is free to use as well as easy to maintain and modify as desired for each course. Moodle extends the interaction that an engaged course requires, whether it is asynchronous or as part of a synchronous, live classroom.

Conclusions

Based upon the previously discussed applications, benefits, and challenges, Moodle can be used in any learning environment. The robust interaction of online learning can be supplemented with Moodle. Complete virtual learning environments or hybrid courses can also be supported with Moodle.

While there is a "learning curve" for both the instructor and the student, and a process for setting up a Moodle, the benefits, such as improved interaction and focused communication, ubiquitous learning, and varied activities, outweigh those challenges and provide a useful collaborative online tool. □

References

- Adams, J., Ngampornchai, A., & Khawaj, Z. (2009). Moodle in action: A case study. Paper presented at Society for Information Technology and Teacher Education Conference, Charleston, SC.

- Angeli, Z. (2006). Using CMS to support and not to drive pedagogy. In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2006* (pp. 2150–2155). Chesapeake, VA: Association for the Advancement of Computing in Education.
- Berry, M. G. (2005). An investigation of effectiveness of Moodle in primary education; <http://www.eduspaes.net/mberry/files/520/1528/primarymoodle.pdf>.
- Blood Pressure Measurement. (2007). Course: Blood Pressure Measurement; <http://hcc.mood07.bcu.ac.uk/course/view.php?id=1536>.
- Bremer, D., & Bryant, R. (2005). A comparison of two learning management systems: Moodle vs. Blackboard. *Proceedings of the 18th Annual Conference of the National Advisory Committee on Computing Qualifications*; http://www.naccq.ac.nz/conference05/proceedings_05/concise/bremer_moodle.pdf.
- Cowan, P. (2007). Encouraging reflection on pedagogical practices through the use of MOODLE. In C. Montgomerie & J. Seale (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia, and Telecommunications 2007* (pp. 29–36). Chesapeake, VA: Association for the Advancement of Computing in Education.
- Dosch, M. (personal communication, April 6, 2009). Program Director and Chair, Nurse Anesthesia, University of Detroit Mercy, Detroit, MI.
- Gates, J. (personal communication, March 23 2009). Gates Ideas; http://gatesideas.com/index.php?option=com_content&view=article&id=49&Itemid=54.
- LearningTown! (2009). LearningTown! A Village for Learning Professionals; <http://www.learningtown.com>.
- Maginity, T. (2009). We're just Moodlin' along. Presentation at Michigan Association for Computer Users in Learning Conference, Detroit, MI.
- Martin-Blas, T., & Serrano-Fernandez, A. (2009). The role of new technologies in the learning process: Moodle as a teaching tool in Physics. *Computers & Education*, 52, 35–44.
- MDE. (2009). MDE; <http://www.michigan.gov/mde/>.
- Moodle. (n.d.). Moodle.org: Open-source community-based tools for learning; <http://moodle.org>.
- Padmanabhan, M. (personal communication, March 27, 2009). Head, Learning Technology Solutions Group, L&D, Tata Consultancy Services.
- Quinn, J. (personal communication, April 20, 2009). Associate Professor, Oakland University, Rochester, MI.
- Stevens, G., Gatling, S., & Murdock, T. (2004). Designing "culturally dynamic" online learning environments using MOODLE implementations. In G. Richards (Ed.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2004* (pp. 2440–2445). Chesapeake, VA: Association for the Advancement of Computing in Education.
- Tracey, M. (personal communication, April 13, 2009). Associate Professor, Wayne State University, Detroit, MI.
- Williams, J., & Crawford, K. (2009). Making Moodle work for you. Presentation at Michigan Association for Computer Users in Learning Conference, Detroit, MI.

Language Learning in Multi-User Virtual Environments

Using the Enter-the-Story Teaching Method

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The authors propose using the Enter-the-Story teaching method for language learning in Multi-User Virtual Environments (MUEs). A MUE's immersive story-world imbued with rich cultural artifacts provides an appealing environment for young learners to learn a language by taking on roles in a story and describing their imaginative experience in the story

Introduction

A recent scoping study conducted by the Joint Information Systems Committee (JISC) revealed that the application of virtual worlds has accelerated exponentially over the last several years (de Freitas, 2008). Multi-User Virtual Environments (MUEs), for example, have been gaining popularity among youths despite their short history of development. Building on earlier text-based environments, MUEs have evolved rapidly to include 3D graphics, text descriptions, and informal communication tools like chats.

MUEs appeal to youths because of the realistic 3D immersive environment and the opportunities to interact with others in virtual communities for social purposes. MUEs create the sense of *being there*, in the company

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