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# Let them Moodle: Utilizing an open source learning management system to extend the English classroom

Mark Randall Rousseau-Smith

# LET THEM MOODLE™: UTILIZING AN OPEN SOURCE LEARNING MANAGEMENT SYSTEM TO EXTEND THE ENGLISH CLASSROOM

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A Project

Presented to the

Faculty of

California State University,

San Bernardino

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In Partial Fulfillment

of the Requirements for the Degree

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in

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by

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ABSTRACT

Between the increasing mandates towards raising testing performance and budgetary concerns to fund interventions needed to raise such testing performance, schools and educators need a viable avenue to extend the classroom beyond the 55 minute block allotted in the secondary setting that is both practical and cost effective. This project sought to determine the efficacy of utilizing Moodle™—an open source, free Learning Management System—to extend the classroom. Specifically, this project centered on creating video tutorials and a demo class aimed to help teachers utilize this powerful medium. TechSmith's Camtasia Studio® was used to create the video tutorials and a "sandbox" class, which only allowed participating teachers in to experiment with features, was created to help facilitate the learning of how to create and manage an online class with Moodle™. The project itself was successful as demonstrated by the teacher participants' willingness to continue utilizing the site beyond the testing period and a want to utilize the system in the coming years. However, further study will be needed to see pragmatically how to run the site with an increased number of students.

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DEDICATION

This thesis is dedicated to my wife and children: Veronica, Cheyenne, Sage, and Skyler. It was through their selfless acts of allowing their husband/father to spend his free time relentlessly sifting through papers and typing by the fluorescent glow of the computer screen that allowed me to complete my degree.

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# BACKGROUND

## Introduction

Facing decreasing budgets and increasing standards, the 21st century educator must find new and innovative methods of engaging students to subject matter. The traditional method of disseminating the information to the students, the filling of the proverbial vessel approach, is no longer applicable in today's educational setting. Rather, in the technologically-rich environment today's students interact with on a day-to-day basis, educators must learn to fuse subject matter with the socially constructed informational world where the students reside; insofar as, students, on their own volition, learn about subjects that interest them through community created Internet sites such as YouTube™, Wikipedia™, Facebook™, and a myriad of other new Web 2.0 collaborative technologies/websites.

The key feature of Web 2.0 technologies that differentiates it from early Internet manifestations is the interactivity between site and user. That is, the Internet site, in its early form, merely was a receptacle of information—a one way interaction from site to user. This early form of the Internet mirrors the traditional teacher-driven pedagogy at the heart of instruction during the

course of most of the 20th century with teachers being the holders of information who dispense their information to the homogenous empty vessels that were students (Reiser & Dempsey, 2007; Spring, 2008). As more learning theories came into being though, educators discovered that the Pavolian training of the students often divorced the crucial interaction needed with the actual subject. Sure, the students could salivate the answer two, but could they conceptually understand why one plus one equals two?

As learning pedagogies were challenged with the constructivist ideas of Piaget and the socio-cultural ideas of Vygotsky, not to mention the radical individual conceptualization models of the emerging post modern theorists, traditional methods of learning have shifted from teacher-student centered pedagogies to student-content pedagogies (Gordon, 2009; Spring, 2008). Interestingly, this new perspective on content learning has taken shape already on Internet sites of Web 2.0 nature. Yet, even though these are educational learning theories educators are seeing emerge on places like Wikipedia™ and YouTube™, they are not seeing them as much in the classroom. One important inclusion, however, in this student-content pedagogy that must not be divorced from the situation is the teacher him/herself. Finding how to effectively blend this triad of

interaction between teacher-student-content was at the heart of this project. Consequently, helping fellow teachers to utilize a modern LMS, Learning Management System, to help extend this interaction outside of the classroom while providing cost savings and an open platform was the goal of this design project. Specifically, the use of Moodle™, Modular Object-Oriented Dynamic Learning Environment, was utilized and training was provided to three English teachers who voluntarily chose to be a part of this pilot project in order to determine the efficacy of using this platform across the department.

## Statement of the Problem

The problem is the chosen Southern California high school's current CMS, Content Management System, Edline™, is an expensive, proprietary, and limited system seemingly designed more for the dissemination of information rather than true student interaction with socially constructed learning theories at its heart. This is evident as Edline's primary rollout included categorization of departments, clubs, and student groups but lacked any true student interaction with content within the classroom groups. A later rollout of Edline™ introduced a "dropbox" type of interaction enabling students to submit assignments through the class page. The latest update to Edline™ has included a

simplistic forum with a very limited feature set for the students to interact with. Meaning, Edline™ has tried to supplement their CMS, Content Management System, to include more student-content interaction but started from a different premise altogether. However, Moodle™, from the onset, was designed with this pedagogical stance from the beginning. In fact, Martin Dougiamas, original creator of Moodle™, based his PhD project around this platform and the social constructionism and connected versus separate ways of knowing learning theories are at the core of Moodle™ (Dougiamas & Taylor, 2003). This distinction is at the heart of the difference between a CMS and an LMS, Learning Management System. Consequently, the problem was to address how this secondary school's English department could extend classroom learning virtually with minimal cost and maximum flexibility while still limiting the number of additional sites students would have to visit.

## Purpose of the Project

The purpose of the project was to install a Moodle™ installation on a server and deploy it to select teachers while developing a series of training modules to help assist teachers to utilize Moodle™ as an online supplement to their classroom teaching. In so doing, the goal was the teachers involved were provided with an additional outlet for

learning to occur beyond the classroom setting. As an end result, the project aimed to determine the efficacy of utilizing Moodle™ site-wide as a learning management system for this secondary school's English Department.

## Significance of the Project

The significance of the project was finding a way to help teachers utilize a robust learning management system to extend their classroom online—a platform which allows students to engage concepts in a mediated yet socially constructed method that mirrors the interactions they currently, or most likely will, participate in online. Furthermore, this project aimed to help lessen the gap between the increasingly digital world educators live in with the often antiquated 20th century teaching practices they utilize while being cognizant of ever increasing budget crises present in today's educational landscape. This latter element was a primary motive for embracing open source technologies, with the low setup costs, as well as the freedom to not be tied down to one proprietary format if the need arises to switch technological direction in the future.

## Limitations

During the development of the project, a number of limitations were noted. These limitations are the following

1. The major limitation of this project was the amount of time given to implementation. Meaning, while the project was active for seven months, and continues to be utilized as of the writing of this thesis, a more longitudinal examination needs to be conducted to determine the true efficacy of utilizing this LMS, Learning Management System, across the department and possibly site-wide.
2. Another major limitation is scalability. While many large institutions have utilized Moodle™, this project only dealt with three active teachers utilizing the system with 391 total users accessing the system. This is far below the 2,000 plus users who would be utilizing the system if used site wide across the English Department. As such, server loads and "bugs" in the program itself might not have presented issues that could arise when an increased number of users access the system.
3. Cost is also a limitation to implementing this project across the department. While the Moodle™ software itself is no cost, there is the cost of running the servers to house the LMS. For this project, shared servers were utilized that host

many services for many users which helps keep costs down. However, if more users were to access the Moodle™ service, the cost of at least one dedicated server might need to be factored in to the cost of operating the site to ensure adequate system resources.

## Definition of Terms

The following terms are defined as they apply to the project.

1. Backend: A backend is the administrative, or elevated user, side to a website that allows changes to be made to a website. The normal visitor to this website will not see the backend.
2. Bugs: A software/hardware glitch or malfunction that causes unexpected or undesirable outcomes.
3. Content Management System (CMS): As used in context with websites, a CMS is a predesigned website that helps to facilitate content creation and management more easily by allowing the creation and manipulation of content to occur through access to the website itself rather than website creation programs that reside on the individual's computer; thus, content creation and manipulation becomes operating system agnostic.

4. Learning Management System (LMS): An LMS is similar to a CMS in the purpose of helping to create and manage content; however, the major differentiation is the focus. CMS's are designed agnostic to content matter, yet LMS's are geared specifically to help facilitate learning in the academic arena.

5. Open Source: Open source, in regards to software, is software in which the actual code is available to be inspected, and often, modified. This is in stark contrast to most software labeled proprietary in which the code is not available to be seen or modified. While there are many licenses that tout the open source label, they all allow the code to be seen, and many allow modifications if attribution has been given. While not all open source projects/programs are free in cost, the vast majority are with the financial angle often being taken that the program is free but support might cost money.

# CHAPTER TWO

# REVIEW OF THE LITERATURE

## Introduction

With the advent of the Internet, the distance learning model of the 20th century has been transformed. This in conjunction with more teachers leaning towards a constructivist teaching pedagogy, in which the students construct meaning for themselves, has led to a revisioning of where online education needs to head. The educational triad, being the teacher, student, and subject, is at the heart of this literature review. Specifically, the first section will examine modern constructivist notions of learning and how these pedagogical stances are being infused in online learning. This approach to learning is subject-centered in nature but complementary to the educational triad on a whole. The constructivist approach to learning is directly beneficial to students when appropriate mediums such as asynchronous and synchronous learning is applied to online learning platforms and is explored in the second section of this review. Furthermore, teachers and districts can institute these pedagogical approaches to learning, while saving money and fostering a sense of collaboration and authorship for all involved, by utilizing open source technologies. The cost savings and collaborative nature of

open source software is reviewed in section three. Lastly, an examination of the need for solid instructional design is reviewed in section four.

## Benefits of Online Learning for the Subject

### Constructivism

Constructivist-centered pedagogy is "becoming more prevalent in teacher education programs and public schools across the nation, while demonstrating significant success in promoting student learning" (Gordon, 2009, p. 40). As Piaget's research pointed out, "knowledge [is] a process of inquiry and reasoning" (Gordon, 2009, p. 51). As teachers, we are not dealing with empty vessels waiting to be filled but rather humans who bring their own perspectives and experience to the table. Consequently, the notion that "teaching is a political act" (Kroll, 2004, p. 216) is a central tenet to many constructivist activists. When we allow our students to feel a part of the learning process, they play a more central role in the forming of knowledge itself. Paulo Freire, a Brazilian educator, furthers this notion of teaching being a political act as he asserts that traditional pedagogies placing the teacher as a feeder of knowledge to the students becomes a form of ideological oppression in which the students become servants to the

educational society at large (Spring, 2008). Freire extrapolates that this "banking education, [in which] the teacher is the primary actor whereas the students are the recipients" will result in students feeling as if they are objects and thus "be treated as if one were without life" (Spring, 2008, p. 208).

While many constructivist advocates might not concern themselves as much with the oppressive nature of traditional educational pedagogies of the early 20th century as Freire does, most would agree that "students need to be exposed to the variety of ways [constructivist theories are] framed" (Kroll, 2004, p. 200). However, as Osborne(1996) points out, "a more serious criticism of the constructivist theory is that it provides no well-defined mechanism by which the individual can develop new constructs with which to see the world" (p. 76). Gordon (2009), citing Baines and Stanley (2000), exemplifies this notion of not having a solid foundation in which to practice constructivist pedagogy as many teachers often only "set up the learning environment, know student preferences, guide student investigations, and then get out of the way" (p. 40). However, this notion of constructivism being completely student led negates the fundamental theories that are infused into modern constructivist pedagogy; insofar as, Vygotsky's Zone of

Proximal Development is an integral part of constructivist practices as his original assertion was "what children can do with the assistance of others not only needs to be taken into account...but may be even more indicative of their mental development than what they can do on their own" (Gordon, 2009, p. 52). The constructivist mantra is not merely to tell the student to open a book and learn; rather, the teacher must help scaffold concepts to allow the student to construct meaning for themselves. Clark and Graves(2008)epitomize this conceptual understanding stating "inherent in the concept of scaffolding is the gradual release of responsibility model" (p. 10).

Online Learning and Constructivism

Many online learning platforms center around discussion type forums. As previously mentioned with constructivist practices, teachers must help students engage in construction of meaningful exploration of concepts through "discussion prompting that moves student discussions beyond mere information sharing to higher levels of critical response and knowledge construction" (Whipp & Lorentz, 2008, p. 179). A crucial part of helping students to critically engage concepts in an online medium is to infuse a social presence, discussed in further detail in the next section, into the online class. Whipp and Lorentz (2008) suggest

using first names of students when addressing them as well as paralinguistical cues, such as emoticons, to "help lessen the physical and psychological distance between themselves and their students" (p. 182). If teachers create a friendly, yet rigorous, online environment, students will be able to take advantage of the medium to help facilitate their own cognitive construction of concepts presented.

## Benefits of Web Based Learning for Students

### Asynchronous e-Learning

Asynchronous learning is similar in nature to traditional distance learning. Hrastinski (2008a) succinctly defines "[a]synchronous e-learning, commonly facilitated by media such as e-mail and discussion boards, [as] support[ing] work relations among learners and with teachers, even when participants cannot be online at the same time" (p. 51-52). The benefits for students, being able to log on whenever is convenient for them, is obvious. However, the real benefit is seen when examining the power of asynchronous learning environments in conjunction with a traditional classroom. This is especially true in the English classroom. As Love (2006) asserts, "text response, where students read, discuss, and prepare a formal response to a literary text, is a central component of high school

English/Language Arts" (p. 218). Hrastinkski's (2008a) study showed:

> Almost every sentence in the asynchronous discussions of the smaller group, and a vast majority of sentences in the larger group, were classified as content-related...a remarkable result—imagine if learners on campus spent more than 90 percent of their time discussing issues related to course content. (p. 53)

With increasing demands mandated at the state and federal level, the extending of the classroom virtually offers a myriad of opportunities for students to continue the conversation. While online discussion forums, one example of asynchronous learning, are completed in a written medium, and consequently "relatively distant from the reader in time and space[,] meanings are still negotiated turn by turn, as in F2F [(face to face)] classroom discussions, and still regulated by teacher moderators who can potentially determine the direction and focus of the discussion" (Love, 2006, p. 219). That being said, online participation is key in asynchronous learning. This sentiment is epitomized as Hrastinski (2008b) points out "many researchers seem to agree on that online participation is a key driver for learning even though their perceptions of how online participation may be conceptualised[sic] is very different"

(p. 1755). Nevertheless, "learning and participation are not separate activities that can be turned on and off" (Hrastinski, 2008b, p. 1760). One method to help increase participation is for the teacher to provide a "social presence" (Whipp & Lorentz, 2009). Tu and McIsaac (2002), based on Short, Williams, and Christie (1976), define social presence "as the degree of awareness of another person in an interaction and the consequent appreciation of an interpersonal relationship" (p. 133). While this initial examination focused on "face-to-face (FTF), audio, and closed-circuit television encounters" (Tu & McIsaac, 2002, p. 132), modern researchers are examining the relationship in Computer-Mediated Communication (CMC). In fact, it seems there is a cyclic nature between social presence and online participation as Whipp and Lorentz (2009), based on Jung et al. (2002), cite a study that "found that student online discussion participation and achievement on course assignments were higher when [the students] were supported socially and academically by instructors in contrast to students who did not or who only interacted with peers on academic tasks" (p. 171). This then becomes a crucial area of focus for the teacher utilizing asynchronous learning—how to increase social presence. Whipp and Lorentz (2009) suggest the utilization of emoticons, addressing students by

their first names, and, overall, trying to provide a more intimate experience between teacher and student. This casual environment is especially important to reduce anxiety students may feel about their own computer expertise, which plays a crucial role in the social presence dynamic as there seems to be "a positive relationship between social presence and a student's perception of his/her own computer expertise" (Tu & McIsaac, 2002, p. 135). Therefore, the benefits of increased participation online will be advantageous to the student as "the online mode of communication itself is likely to provoke a more spontaneous and informal type of interaction...inviting expressions of affect and moral opinion that might not be as visible in the more formal mode" (Love, 2006, p. 224).

Synchronous e-Learning

One major benefit of the Web 2.0 movement for education is the new influx of media supporting instant communication between people such as videoconferencing applications, like Skype™, chat applications, and other synchronous-type mediums (Hauck & Youngs, 2008; Hrastinski, 2008a; Laurillard, 2009). Interestingly, students in one study responded they felt they learned better in asynchronous discussion over the synchronous chat sessions (Johnson, 2008); however, "in every contrast of synchronous chat and

asynchronous discussion, student achievement was equivalent" (Johnson, 2008, p. 168-169). This anomaly might be attributed to the fact that, as cited in one study, "in synchronous discussions, participants also discussed things other than course work...especially evident at the beginning and end of each discussion" (Hrastinski, 2008a, p. 53).

This juxtaposition between perceived learning and actual learning in online environments is still actively being researched "as technologies have been developing faster than pedagogical and methodological reflection, [and subsequently] published research has fallen behind" (Hauck & Youngs, 2008, p. 99). The discrepancy might also stem from students not knowing how to use the technology available as one study reported the majority of students felt "that [the] 'awareness of the learning environment (i.e. finding out what you can do with tools such as websites, blogs, chat rooms, audio-conferencing, etc.)' was very important" (Hauck & Youngs, 2008, p. 96). Nevertheless, the benefits of synchronous learning become apparent as "it can also be expected that the sender becomes more psychologically aroused and motivated because he or she knows a response is likely" (Hrastinski, 2008a, p. 54).

The best use of online learning platforms seems to be a combination of both asynchronous and synchronous learning as

both have their positive and negative aspects. Both of these mediums provide a "collaborative learning combin[ing] constructivism with social learning...[and] gives focus to [the students'] discussion, enables them to learn from and build on the outputs of their peers, and to share their reflections and interpretations of what happened within their practice" (Laurillard, 2009, p. 10).

## Benefits of Open Source Technology in Education for Teachers and Districts

### Cost Savings

While many people equate open source software with free, as in money, the actual "term refers not to cost but to the freedom users have to modify source code" (Guhlin, 2007, p. 16). However, a side benefit of open source software is the lack of cost with the actual software itself. This is due to the collaborative nature of open source—you are free to modify the source code. As such, many open source software projects will have a myriad of contributing programmers. This collaborative nature of open source is seen as opportunistic for many companies. The average cell phone contained two million lines of code in 2008; yet, this number is expected to increase to ten million lines of code by 2010 (van Genuchten, 2008). Often, the recycling nature of open source software (there is no

need to reinvent the wheel mentality), is attractive to large corporations looking to save costs. However, van Genuchten (2008) warns that many companies' existing software licenses do not play nice with open source licenses, reusing a piece of software could land the individual in trouble with existing patents, and "exposing your company's intellectual property by opportunistically accepting a [General Public License] can be a career breaker" (p. 82).

For school districts, adopting open source solutions could save a bundle. For example, the cost of a commercial CMS, course management system, can run upwards of $280,000 initially and 22% of the initial cost for support fees and annual licensing (Guhlin, 2007, p. 17). Yet, an open source solution such as Moodle™, which costs nothing initially, can be "implemented on a commercial online web service provider for a small monthly subscription fee (less than US$5 per month)" (Schweik et al., 2009, p. 123). While the previous cost was for a small-scale setup in a pilot program on geographic information systems, and a CMS, Content Management System, run district wide would need greater server consideration, the absence of the initial cost would still be a windfall gain for the district. This same cost savings could be seen with a district deciding to replace a

proprietary office suite, such as Microsoft Office™, which on average costs $40 per computer to license, to an open source solution such as OpenOffice™, which costs $0 per user (Guhlin, 2007, p. 17).

Open Collaboration

Beyond cost savings, which is significant, open source software promotes a sense of collaboration. From teachers openly sharing ideas to students trying new programs without the enticement to pirate a proprietary equivalent, open source software encourages a freer exchange of thoughts and ideas (Guhlin, 2007). New movements, such as the Open Educational Resources (OER), aim to provide open source textbooks—thus allowing the content to evolve and be authored by a global audience (Baraniuk & Burrus, 2008). A key example of this open exchange of ideas can be found with Wikipedia™. While academia, on a whole, has rejected the use of Wikipedia™ as "there are no guarantees for accuracy and veracity on a wiki...a recent survey conducted through the journal *Nature* found that Wikipedia...is at least as accurate as *Encyclopaedia Brittanica*" (Wheeler et al., 2008, p. 990).

However, the real problem with the adoption of open source software seems to lie in the fundamental philosophical manner in which we see content ownership as

those in academics "tend to protect their ideas as their own work" (Wheeler et al., 2008, p. 992). Schweik, Fernandez, Hamel, Kashwan, Lewis, and Stepanov (2009), in detailing their results of utilizing an open source geographic information system, which didn't work quite as planned, concluded that "[i]t is important to reach a balance between the open-content philosophy for teaching material and the movement toward asset protection at higher institutions"(p. 128). While open collaboration is a vital step forward, it does not mean that all proprietary systems need to be abandoned—nor do we need to create a system where no one makes any money off his/her efforts. For example, Apache, an open source server solution, has massively benefited from "for-profit companies like Red Hat and IBM" (Baraniuk & Burrus, 2008).

## Instructional Design

To make an effective instructional design project, it is critical to have an instructional design model that facilitates a systematic approach to not only the design, development, and implementation of the project but also an effective means of evaluation of the project. The beginning of instructional systems design is rooted in the United States military's need "to find a more effective and manageable way to create training programs" after World War

II (Allen, 2006, p. 430). As various learning theories came into existence, different instructional design models were created. Today, there are a myriad of instructional design models from rapid prototyping to holistic design models such as the Four-Component Instructional Design model (Reiser & Dempsey, 2007). Yet, the vast majority reflect the basic tenets of the ADDIE model, which is analysis, design, development, implementation, and evaluation (Allen, 2006). One problematic area with the early linear versions of the ADDIE process is the increasing need for subject matter experts—be it outside experts proficient in a certain program/software utilized in the instructional design or content experts needed for a subject outside of the instructional designer's expertise (Reiser & Dempsey, 2007). In order to accommodate this more complex system of negotiations in the instructional design, a revised model of the ADDIE process positions the evaluation step to be placed as a recursive step so that after each of the four primary steps, such as analysis and design, evaluation occurs (Allen, 2006). This cyclic nature of continuously evaluating after each step helps to deal with the complexity of projects when more than one person is responsible for the instructional design.

The first step of the ADDIE process is the analysis step. This crucial first step guides the overall design process as it tries to figure out what the need is; insofar as, the design and development of a project is futile if there is no need to have the project in the first place. This identifying of a problem often necessitates a needs assessment "to assist professionals in making data-driven and responsive recommendations about how to solve the problem or introduce the new technology" (Rossett, 1995, p. 184). This assessment can come in a variety of formats including interviewing, observing actual performance, examining records and outcomes, facilitating groups, and/or surveying through questionnaires (Rossett, 1995). Once a needs assessment has been conducted, it is often useful to perform a task analysis if certain tasks must be performed to successfully implement the project (Jonassen & Hannum, 1995).

The next step is the design stage. This step is guided by the analysis step and provides objectives, details what the learning activities will be, and specifies what media will be used in the development and subsequent implementation of the project (Reiser & Dempsey, 2007). As the instructional design is being developed and implemented,

it is often necessary to revisit the design stage to make changes as needed.

Following the design, the instructional technologist proceeds to the development stage which "includes preparing student and instructor materials...as specified during the design [stage]" (Reiser & Dempsey, 2007, p. 11). This often labor-intensive step provides the substance in which the participants will be utilizing during the implementation stage; consequently, as alpha and beta tests are implemented, new material, or modified materials, might need to be developed again to ensure positive results.

The implementation stage is the actual dissemination of materials and training the project was designed to deliver (Reiser & Dempsey, 2007). This often includes alpha pilot tests, in which one or a small handful of participants try out the developed materials, and beta pilot tests where a larger, but still small, number of participants utilize the developed materials. During these pilot tests, the design and development of the materials is modified as needed.

The final stage is the evaluation stage. While the evaluation is ongoing through all of the stages, there still needs to be a final evaluation of the project to measure its overall efficacy in regard to the objective set forth in the analysis phase. The formative evaluation is the ongoing

evaluation utilized throughout the process while the summative evaluation is the measuring of the overall effectiveness of the project (Reiser & Dempsey, 2007).

## Summary

By examining the benefits of online learning to the subject, students, and teachers/districts, the researcher provided a framework in which the project was centered. The utilization of open source software, specifically Moodle™, helped to achieve this goal. The flexibility of Moodle™, as witnessed by the numerous uses of this Learning Management System (LMS), makes this a prime vehicle with which to deliver synchronous and asynchronous content to extend the physical classroom (Hargadon, 2008). In addition, unlike many other proprietary Content Management Systems (CMS), the modular design of Moodle™ is "designed to support a style of learning called social constructionist pedagogy" (Romero et al., 2008, p. 371).

Whether the 21st century ushers in new pedagogical stances such as postmodernism or continues to evolve constructivist pedagogy from the 20th century, has yet to be seen. Regardless, the behaviorist-centered teaching of the early 20th century is seemingly being used less and less in modern teaching practices. This is not to say the behaviorist "drilling" of information does not have a place

in modern education, but the heterogeneous population of today's students seem to need a way to construct their own meaning from the information laden world they occupy. Moreover, people live in a world where information is abundant, but not all of the information is valid. Educators must seek to critically engage their students to be independent thinkers who can disseminate the often opaque masses of information out there—to discern applicable information from useless information. This job cannot be limited to the physical classroom but must transcend virtually online as this is where many of the students have their "second life." By harnessing the power of the collaborative nature of Web 2.0 technologies, educators can critically engage their students with the timeless themes of the human experience.

# CHAPTER THREE

# PROJECT DESIGN PROCESSES

## Introduction

While the current content management system, Edline™, of the Southern California secondary school utilized in this project has proven to be an effective communication tool between staff, parents, and students, the more robust features of a full learning management system, such as blogs, full media-rich forums, wikis, and other new interactive technologies are limited or non-existent in the current system. As the literature suggests, teachers need to approach education through a constructivist lens in order to truly enable their students to synthesize the plethora of concepts presented to them; yet, with increasing student class sizes coupled with more rigorous demands to teach to the "standards," the 21st century educator must utilize all available tools to help their students succeed. Therefore, in order to be successful, the English department needs to provide an immersive literary experience to its students in which they are asked to engage in academic writing and conversation beyond the classroom walls. This project was designed to provide training modules to help select teachers engage in a pilot test of Moodle™ with their students during the 2009-2010 school year. A CD of the website accompanies

this thesis (see Appendix A); yet, due to the nature of Moodle™ utilizing databases, the website, www.hesperiaenglish.com, will be incomplete on the CD. However, the training tutorials on the CD will work independent of the website. Principal consent (see Appendix B) and Institutional Review Board exemption (see Appendix C) was obtained before starting this project.

## Analysis

The need for a more robust system to supplement the existing CMS was evident through examination of actual performance within the English department. While the existing CMS, Edline™, did add the feature of forums prior to the start of the project, the teachers who did try to utilize its features found it lacking in richness, i.e. no way to embed multimedia or attach files, and overly simplistic in design. The few teachers who tried to utilize the forums ceased before this project even began. Conversations about the antiquated CMS were common at department meetings; as such, the need for a replacement system was self-evident. However, the factor of cost was a major player in deciding which alternative to look at as the district was, and still is, facing major budgetary concerns. After having read literature on the selection of various LMS's, Learning Management Systems, Moodle™, with its robust

educational feature set and zero cost for the program itself, seemed the right choice.

The only cost factor that had to be examined was server hosting costs. The current CMS, Edline™, includes hosting in its annual fee; therefore, the researcher could not put the Moodle™ installation on their servers. The option of hosting on a local computer and serving through the site's intranet, while viable, seemed overly complicated for this project since the computer would have to be allowed an outside connection for students and teachers to access it off campus. With the principal's permission, it was decided to host the site on the researcher's shared server, which already hosts other sites, and pay $13 a month.

The participants to pilot this project were found by asking for volunteers at a department meeting. Three teachers volunteered. With the researcher included, this would put the pilot participants at four teachers with five classes each. However, one teacher did not continue utilizing the site past the beta stage. When asked during the formal evaluation stage, the teacher stated they did not have enough time to learn the new system.

As previously mentioned, a needs assessment was inherit at the start of this project as many teachers complained of the limitations of the current CMS, Content Management

System. However, in order to successfully build a training program, an informal learner analysis was given. This leaner analysis consisted of a basic interview type format were the teacher participants were asked about their technology experience and comfort level. All of the participants reported they had used at least some type of online forum in the past with their students, yet they were unfamiliar with the Moodle™ platform itself. This insight helped to inform the design stage of this project as the learning objectives needed to deal with participants who needed to learn merely how to navigate the system before embarking on more lofty learning goals such as how to successfully create specialized forums for their students. This created a performance gap that would have to be addressed in the design stage.

In addition, since many of the department meetings served as a free flowing focus group already with ideas of what people wanted to see, a structured focus group was used, with the help of the learner analysis already conducted, with questions to explore to help with the design phase (see Appendix D). Out of this focus group, the general consensus seemed to be that the group wanted to start with forums, utilize email as the primary means of communication between themselves and myself, be able to post assignments,

utilize video tutorials and a "sandbox" area to experiment, and generally become more adept at using new technologies in the classroom.

## Design

Moodle™'s design by nature was perfect for the project because rather than a series of users logging in to one site, Moodle™ is divvied up into classes with roles of students and teachers pre-established. This allows one main page with separate classes the students enroll in; consequently, each teacher has their own mini-site known as their class page. However, Moodle™'s included templates are generic and have the words "Moodle" as the main graphic logo. For both aesthetic reasons and pragmatic reasons, a more personalized design was desired so the teachers and students would know this was their website. Therefore, a decision was made to purchase a black and gold template, which reflected the school colors, for $30. Unfortunately, the included graphic (see Figure 1) was of a flower and seemingly arbitrary to the site.

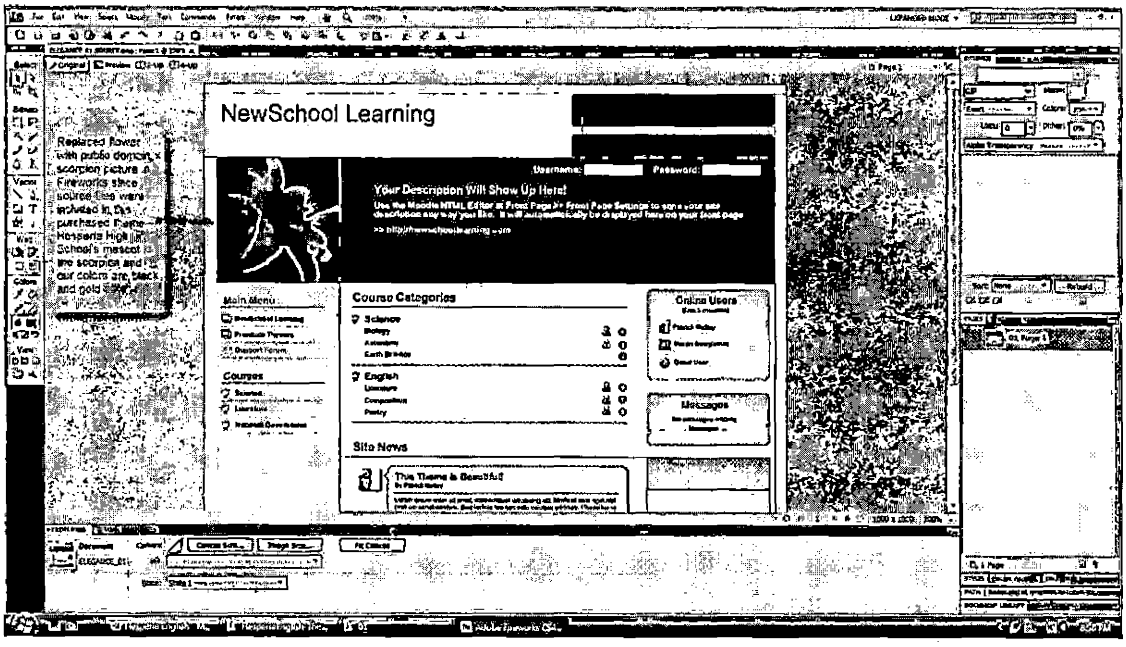



Figure 1. Screenshot Showing Original Template

The template's flower was not able to be merely replaced as the background color was a gradient and too hard to match up by merely replacing the picture file. This was corrected by using Fireworks®, an Adobe® software program that can edit layers of a Portable Network Graphics, PNG, and removing the layer of the flower and substituting an edited picture of a scorpion (see Figure 2) to match the school mascot.

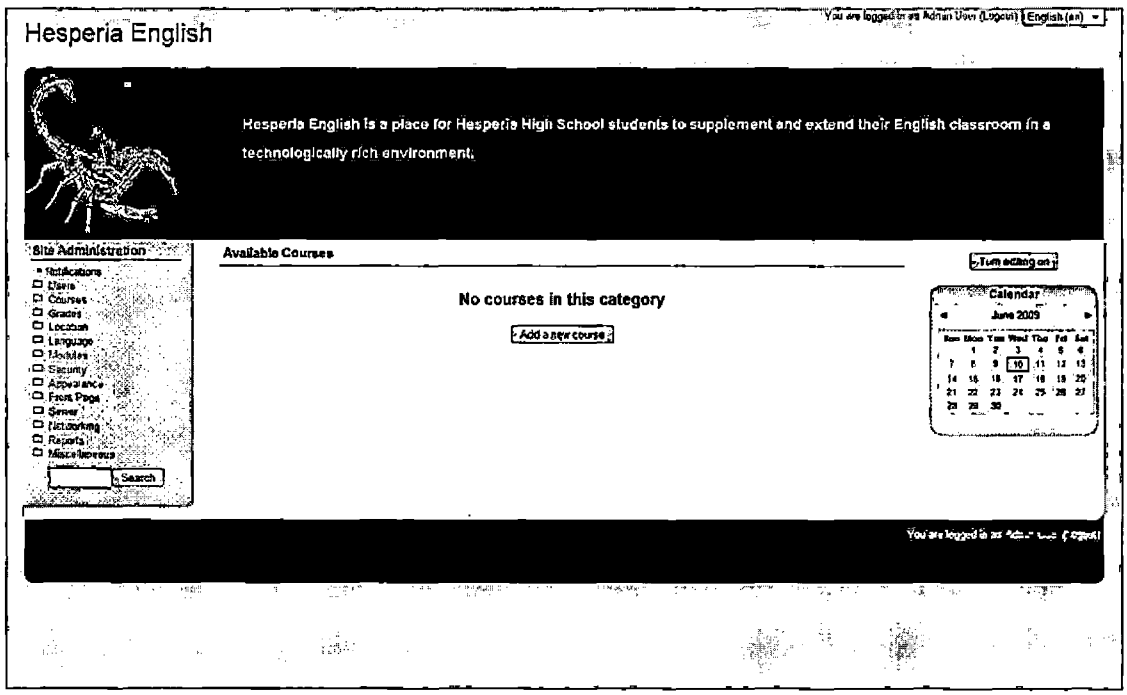



Figure 2. Screenshot Showing Modified Template

In addition to creating a sandbox area for the teachers to experiment in, there was also a desire to provide video tutorials on how to utilize the beginning features of Moodle™. This section of the design phase was guided by the task analysis and learning objectives from the analysis stage. Consequently, the sandbox area was merely an empty class that all teacher participants had the role of teacher in and two sample students, John Doe and Jane Doe, were added to the class. Regular students could not see or enter this sandbox class. The idea behind the sandbox class was to provide an area teachers could experiment with features in and merely reset the class when done. Since one of the major

learning objectives, and subsequent performance gaps, was learning how to navigate the system, the sandbox class allowed the teacher participants an unhindered area to try out features of the system without fear of "messing up" a live class with students. Inside the sandbox area, video tutorials were created to help facilitate the learning of key features of the system. This, in combination with the sandbox class, allowed the teacher participants to learn how to navigate and create groups, forums, blocks, and finally a course. A video tutorial for the creation of forums was specifically created as that was a chosen learning objective from the teacher participants during the focus group.

Five video tutorials were developed in all. The first video tutorial, displayed on the front page of the site, guided the visitor on how to create an account on the site. This video tutorial was placed on the front page by design as teachers and students must register before proceeding into the system. The remaining four video tutorials were placed within the sandbox class to allow the teacher participants to watch and emulate in the demonstration class. The second video tutorial created was designed to show how to create groups since secondary teachers have multiple periods of the same class. For example, a teacher might teach three periods of English III, so rather than

creating three classes, a teacher can create one English III class. This second tutorial was designed to help the teacher participants conceptualize how to utilize Moodle™ with their own classes. In addition to showing how groups worked, basic navigation was also depicted in the second video. The third video tutorial depicted how to create forums as this was a learning objective identified by the teacher participants during the focus group. The fourth video tutorial was designed to illustrate how blocks could be utilized in a class. Lastly, the fifth video demonstrated how to actually create a course. This was placed last in design as the teachers, after experimenting with other features in the sandbox class, would be ready to create their own real, functioning class for their students.

After online research, two major screen capturing programs—programs that record the computer screen and all mouse movements and exports the recording out to a video—stood out as contenders: Adobe's Captivate® and TechSmith's Camtasia Studio®. Both programs offered screen recording and voice-over narration but differed in cost and some features. Captivate® has a retail cost of $799 at the time of this writing while Camtasia® retails for $299 currently. Captivate® has advanced features such as quizzes and simulations that Camtasia® does not have or is limited in;

however, Camtasia® is seemingly designed more for screen recording as it features an automatic zooming feature to zoom in on a particular area of the screen and a highlight feature to help highlight the mouse cursor for easier visual guidance. As such, between the features needed for this project and cost consideration, Camtasia® was chosen for the design of the video modules.

## Development

The initial prototype of this project was a complete install of Moodle™ as there is no way to conduct alpha or beta tests without actually having the learning management system on a server. In order to create the video tutorials, a Moodle™ installation was needed to be up and running. Therefore, after securing server space, the Moodle™ installation guide was followed, included with the program, and installation was completed in 28 steps. The initial steps included downloading the software, setting up a cron job—a server setting that allows the server to run a particular command at scheduled intervals—to run required Moodle™ scripts, setting up a database—an external application that stores actual data such as usernames and forum entries that the server accesses when needed—for Moodle™ to access, and uploading the actual Moodle™ files (See Figure 3).

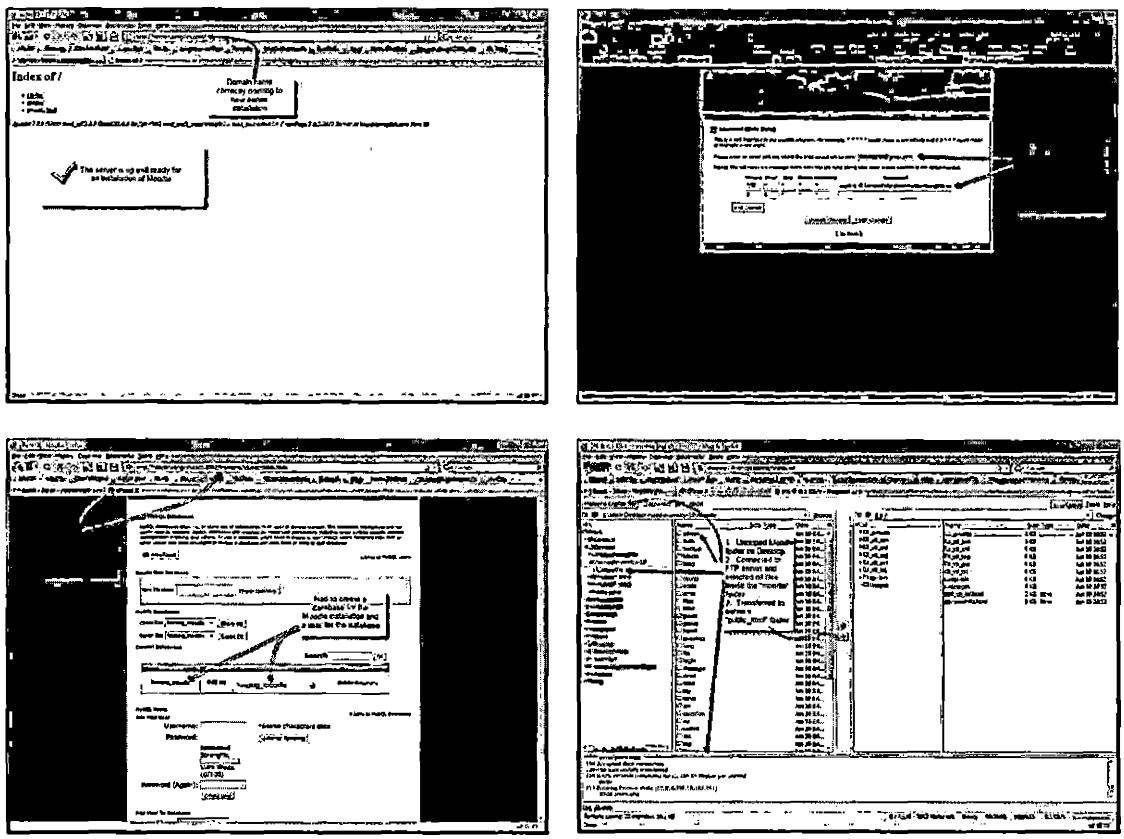


Figure 3. Screenshots of Moodle™ Preinstallation Setup

Once the preinstallation was done, the Moodle™ process continued upon first accessing the website. The installation involved answering questions about the database name used, administration username and password, accepting the terms of the open source license, and a series of screens that check for the right server environment and successful installation of the Moodle™ components. The entire process was 24 steps and took under 30 minutes.

Moodle™ users are setup into roles, which is basically a name for categories of permissions. The initial user created has the role of Administrator; meaning, this initial user has full permissions to do everything allowed on the site. Being this is somewhat of a security concern as not only can courses and users be accidently deleted but settings can be changed to render the site inoperable, Moodle™ has the role of teacher and student that can be assigned automatically or manually. These roles have dramatically less permissions than that of the Administrator. For example, the Teacher role can add and modify activities, such as forums, in a class but cannot delete a user, minus him/herself, and cannot create a course. Students have even less permissions. The teacher participants needed to be able to create courses as well, so they were assigned the Course Creator role enabling them to create their own classes plus have all of the normal teacher permissions. While students can be manually registered in the system, the process can be tedious when each teacher has approximately 120-180 students each. Batch uploads can be done, but many of the fields would still have to be manually updated for each student. A batch upload would be to take a text file of student names and upload it to the system which would then create accounts based on a Comma Separated Value

system. This is a common export and import feature in many gradebook and attendance programs to help facilitate easier data transfer. Consequently, the settings for registration was changed to email confirmation; meaning, the students, and teachers, would register themselves and confirm their registration by clicking on a link set to them in an email. This is a common registration method employed by many websites as it allows the system to verify email addresses in the process. In order to show how to use this email registration system, a video screen capture of setting up an account was recorded. This screen capture was uploaded to screencast.com, which houses screen captures for free if under 2 gigabytes and less than 2 gigabytes of bandwidth are used a month, and then embedded on the front page of the site to allow teachers and students to view and understand how to register.

In addition to the registration screen capture, four more video tutorials, utilizing Camtasia Studio® and a professional microphone and sound board, were created as discussed in the previous design stage section of this chapter. Each video tutorial was roughly outlined, to provide a reference when recording, and then recorded. During post-production of each screen capture, appropriate zooms, to help the viewer see vital information, and arrows

were added to the screen capture to aid in comprehension of the information presented.

## Implementation

The alpha implementation of the site occurred immediately following the upload and installation of Moodle™ itself in early July 2009. This early testing involved setting up different permissions and creating a sandbox course in order to learn the steps necessary to create a class and add activities. Moodle™ activities are items such as blogs, forums, wikis, and quizzes among many other learner-centric technologies. Once comfortable with the creation of classes and activities, video screen captures detailing how to create groups, how to create forums, how to manage blocks, and how to create a course were created(See Figure 4). These video tutorials were created with Camtasia®, stored on ScreenCast.com, and embedded in the sandbox class created for the teachers to use.

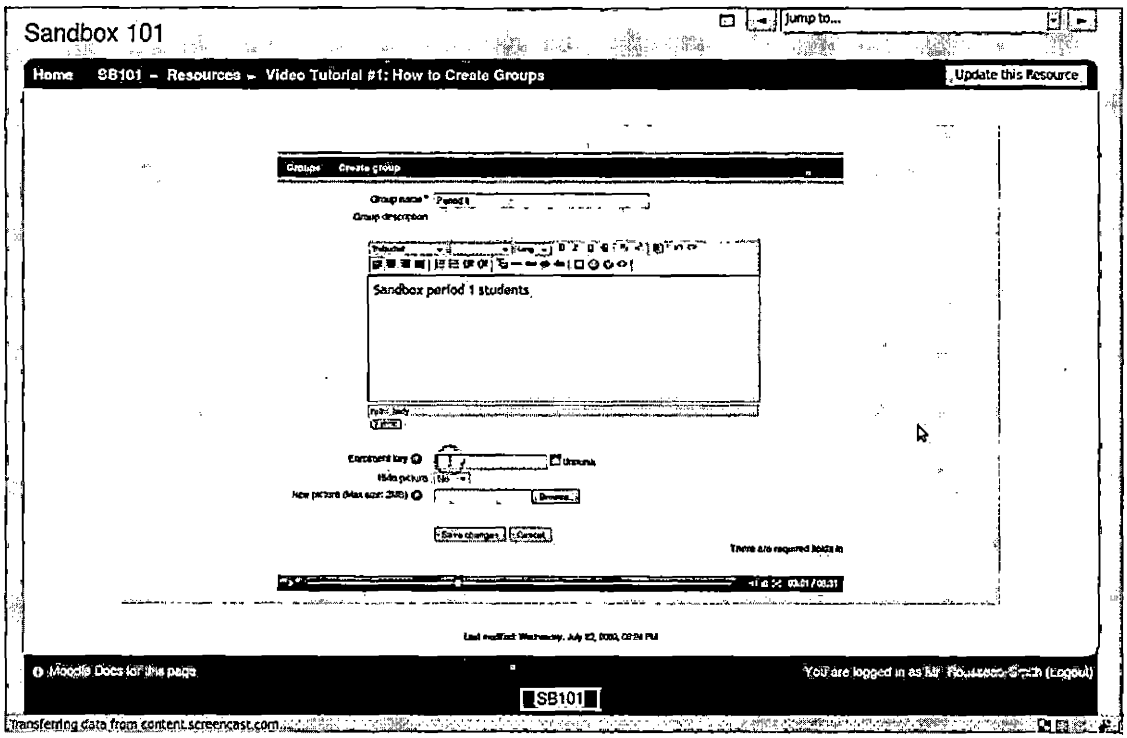



Figure 4. Screenshot of Video Training Module Playing

In late July and early August, the teacher participants were asked to engage in the beta testing before the 2009-2010 school year actually started. This involved them registering themselves, setting up their permissions to be Course Creators, and having them go to the sandbox class, watching the video tutorials, and experimenting with the features themselves. Two sample students were created, John Doe and Jane Doe, and the teachers were supplied the usernames and passwords of both. The beta testing presented no issues, so the actual pilot testing began as the school year started the second weekend of August.

During the actual pilot test of Moodle™ with real students utilizing the system, one major issue arose in the informal "check-up" formative evaluations. The issue the teacher participants expressed concern with was the creation of student accounts. A handful of students stated they created accounts but never received the email confirmation to complete the registration. Upon investigating the matter, it seemed the problem was two-fold. First, many of the students' confirmations were apparently going into their Spam folder in their email client. This is a fairly common occurrence as mail programs like Yahoo® sees system emails, such as what Moodle™ generates, as a type of Spam, or junk email, since it is generated automatically and not manually like when a person personally writes an email to someone. This was a fairly easy bug to fix as the teachers merely told the students to look in their Spam folder for the email confirmation. The second issue was a bit more complex as it involved user error. After looking through the user accounts, a handful of students apparently was not comfortable with what an email address actually is; insofar as, the pending user accounts often had email addresses missing the "@" symbol or had "www." prefixes, like website addresses, attached to their emails. This issue was not a system bug but rather a user generated bug. While it was

easy to fix in the administrative role, the teachers had trepidations about constantly asking to have students manually enrolled. To fix this, a new permission role based on the Course Creator permission was created which enabled the teachers to manually add students and reset passwords as needed. This new permission role was named Course Creator Plus for ease of remembering the added permissions given. This solution fixed the latter problem.

## Evaluation

While the teachers are still actively using the site at the time of this writing, a summative evaluation was conducted on the project in early February 2010 with formative evaluations that occurred continuously throughout the project in the form of informal "check-ups" with teacher participants that consisted of verbal or email inquiries as to how the site was working for the participants. This summative evaluation consisted of a survey (see Appendix E) to obtain a general overview of what was most and least beneficial about the program as well as generate questions for an informal interview conducted immediately after the teachers filled out the survey. While initially three teachers, not including the researcher, volunteered to be a part of the project, only two teachers remained throughout the pilot testing period as one teacher stopped utilizing

the site. When asked why the teacher stopped utilizing the site, the participant responded s/he did not feel s/he had the time to learn how to utilize the website to its full potential. When asked if s/he utilized the sandbox and watched the video tutorials during the beta testing, s/he responded s/he did, and it was beneficial; albeit, the teacher never had his/her students ever register on the site.

The survey showed that both teachers found the screen recordings to be extremely helpful with both marking 6's on the survey for every section except the "Blocks" category. When asked, both teachers stated they didn't even try to use blocks. Both teachers marked the sandbox area as being slightly less useful and the actual use of the activities in their own virtual classroom as being more useful. Both teachers reported having no "major technical problems" with the site.

The survey was a solid stepping stone for an informal one-on-one interview about the efficacy of utilizing Moodle™ across the department. Both teachers enthusiastically voiced their support for incorporating this design across the department and stated Moodle™ seemed more academic than the current CMS, Edline™. When asked how often they utilized the site with their students, both teachers stated they

tried to have the students access it at least once a week. Both teachers rated themselves as novice computer users but also stated they did not feel overwhelmed with Moodle™'s features. Both responded they would like to utilize more features but felt comfortable learning them over time. When asked the best way to train other department members how to utilize Moodle™, they both stated the video tutorials would be the best method as teachers can learn at their own pace.

## Summary

Overwhelming, the project was successful in demonstrating Moodle™'s capability to serve as a learning management system for this Southern California secondary school's English department. The biggest challenge ahead seems to lie with other department members' willingness to learn a new system; although, it seems creating a video tutorial bank of some kind would help colleagues learn how to utilize the system at their own pace. While both teacher participants expressed a desire to continue with the project through the next school year, a new server solution must be examined; insofar as, the shared server did not show any noticeable slowdowns with over 40,000 hits from August 2009 to February 2010, but there was only 391 users. If the entire English department utilized the system, the users would jump up to over 2,000 as nearly every student must

have English every year of their high school career. This massive spike in users would probably affect the server's stability, and, as such, either local hosting or dedicated hosting would probably be needed.

# CHAPTER FOUR

# CONCLUSIONS AND RECOMMENDATIONS

## Introduction

The need for educators to extend the educational experience beyond the classroom walls is becoming self-evident; insofar as, there is not enough time to teach the rigorous standards expected in the secondary setting as class sizes keep exploding but instructional time is often being cut due to budgetary concerns. Educators also are competing with a vast array of technological advances happening outside the classroom—advances which the students are actively involved with such as the Internet, mp3 players, streaming video, social media networks, and a myriad of other advances the students utilize on a day-to-day basis. Yet, while the educational benefits of these advances seemingly have immense potential, many classrooms still only function with antiquated 20$^{th}$ century teaching tools.

This project, through the use of the ADDIE—Analysis, Design, Development, Implementation, and Evaluation—model sought to determine the efficacy of utilizing a free, open source LMS, Learning Management System, such as Moodle™, to harness some of the technological advances of the 21$^{st}$ century. This project, in determining this efficacy, also

examined successful training methods to help today's educators utilize modern, constructivist-centered, LMS's to help achieve this goal.

## Conclusions

This project ultimately sought to determine if Moodle™ could be used as a viable supplement to the current CMS, Content Management System, used by the Southern California secondary school who participated in the project. Based on findings collected from focus groups, informal observations, interviews, and teacher feedback, the following conclusions can be drawn:

1. As districts battle with financial woes, the appeal of utilizing free, open source solutions as alternatives to commercial, proprietary solutions seems to be growing.
2. Prepackaged "drill-and-kill" software, centered in behaviorist pedagogy, is not always applicable in the secondary setting; that is, the increasingly complex learning objectives required by state standards demand a deeper understanding of concepts by the students. As such, constructivist-centered pedagogies seem more applicable to the depth and holistic understanding required.

3. While there is a cornucopia of educational products on the market, many teachers do not have the time or expertise to judge the effectiveness of these products. Instead, many teachers utilize only what the district/school site provides.
4. While many teachers don't utilize the modern technological advances available, many do see the possibilities of such advances in the classroom learning environment.
5. Teachers are often overworked and overtrained. Consequently, training teachers on how to utilize a new program cannot be done in a one shot in-service, but rather training needs to conducted over a period of time and allow the teacher to self-regulate the pacing of the training.
6. There is not an educational product that is the panacea to all of problems facing the 21st educator.

The first two conclusions gleaned from this project accentuates the changing climate of today's school. As secondary drop-out rates continue to soar, but standards continue to rise, a redefining of the traditional classroom is needed. While many districts seem to recognize the need for students to create meaning from the concepts presented,

they are also faced with restricted spending hindering their ability to provide solutions to teachers to help in this pedagogical transformation. Therefore, the need to incorporate open source technologies seems to be more vital than ever.

The last four conclusions drawn from this project have one major common connection—many teachers want to adopt and incorporate new technologies into their curriculum but either don't have the expertise, the time or both. In order for training to be successful, the vehicle the training is delivered in must allow teachers to pace their own learning. Far too often, when a district integrates new technology into the classroom, a one day in-service is given on how to use the new technology. Overworked and overburdened, teachers seemingly don't grasp all the intricacies of the new technology and end up abandoning it all together. Rather, if the training is set up where teachers can learn at their own rate and at their own time, it seems the adoption rate would rise.

## Recommendations

In order to truly determine the efficacy of utilizing Moodle™ site wide across the particular secondary school who participated in this project, the following recommendations for further study/exploration should be noted:

1. Based on the positive feedback on the video tutorials, more technology training should incorporate this kind of self-paced training to account for the various rates of technological expertise the teachers bring.
2. The viability of hosting on site should be examined in order to keep costs to a minimum and further adoption rate of Internet projects that could be hosted on site—thus keeping costs down.
3. Increasing the number of participants and the duration of use of the site will help to determine if Moodle™ truly can usurp more expensive proprietary solutions.
4. An active discussion among teachers regarding ideas on how to incorporate new technologies into the classroom would be a beneficial starting point to develop a more technologically friendly environment for teachers to try new ideas in the classroom.

## Summary

While the installation of Moodle™ is a relatively easy endeavor, the implementation of utilizing it in a working classroom is a bit more arduous. Often, flexibility increases complexity. A site devoted to only blogging will

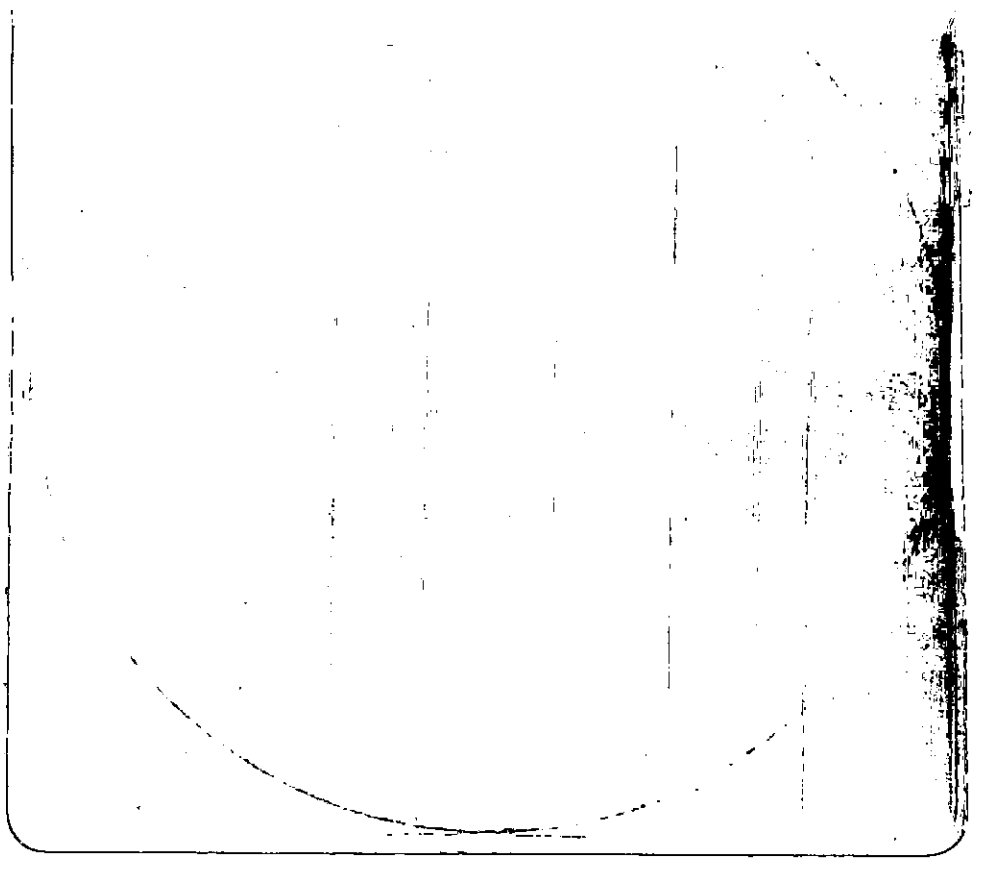
probably be relatively simplistic in use; however, a site allowing blogging, forums, wikis, and more, by nature, has more complexity to it. Nevertheless, Moodle™ offers features and customization that makes it a powerful contender against proprietary solutions like Blackboard™, yet, unlike Blackboard™, is free minus the hosting costs to house the site. This coupled with its strong constructivist underpinnings and ability to facilitate both synchronous and asynchronous interactions makes Moodle™ a worthy choice for any school site.

Furthermore, screen capturing software like TechSmith's Camtasia Studio® allow the Instructional Technologist to make video tutorials that allow teachers and students to watch and practice the activities being displayed at their own pace and on their own time. While screen capturing programs might not totally replace printed instructional materials at this time, it can be a wonderful supplement, and in certain situations, can be a replacement when audio and visual cues prove to more effective.

# APPENDIX A

## CD OF PROJECT

CD MOVED TO BACK OF BOOK



# APPENDIX B

## PRINCIPAL CONSENT FOR PROJECT

Hesperia High School

9905 MAPLE AVENUE • HESPERIA, CA 92345 • (760) 244-9898 • FAX (760) 244-9838

Bob Schnebeck, Principal Michelle Estrada, Assistant Principal

June 7, 2009

To Whom it May Concern:

I acknowledge and give my consent for Mark Rousseau-Smith to conduct his Master's thesis design and development project at Hesperia High School. I understand that his project involves creating a website based on the open source Learning Management System Moodle and that select English teachers and their students will be accessing this site to see the efficacy of utilizing a system like this across the English department.

Furthermore, I understand the risks to the participants will be negligible and all teacher and student information will be anonymous in the thesis itself.

If you have any further questions, please do not hesitate to call at 760-244-9898 ext. 310.

Sincerely,

Bob Schnebeck
Principal

# APPENDIX C

# INSTITUTIONAL REVIEW BOARD

# EXEMPTION LETTER

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

Academic Affairs
Research and Sponsored Programs • Institutional Review Board

June 25, 2009

**CSUSB INSTITUTIONAL REVIEW BOARD**
Expedited Review
IRB# 08162
Status
**No Action by IRB Required**

Mr. Mark Rousseau-Smith
c/o: Prof. Eun-Ok Baek
Department of Science, Math and Technology
California State University
5500 University Parkway
San Bernardino, California 92407

Dear Mr. Rousseau-Smith:

Your application to use human subjects, titled, "Let them Moodle: Utilizing an Open Source Learning Management System to Extend the English Classroom" has been reviewed by the Institutional Review Board (IRB). The IRB thanks you for your IRB application submission. The board noted that IRB approval is not required for a research due to the following reason listed below.

- The protocol as described is not classified as research according to the federal definition.

If you have any questions regarding the IRB decision, please contact Michael Gillespie, IRB Secretary. Mr. Gillespie can be reached by phone at (909) 537-5027, by fax at (909) 537-7028, or by email at mgillesp@csusb.edu. Please include your application identification number (above) in all correspondence.

Sincerely,

Sharon Ward, Ph.D

Sharon Ward, Ph.D., Chair
Institutional Review Board

SW/mg

cc: Prof. Eun-Ok Baek, Department of Science, Math and Technology

909.537.5886 • Fax 909.537.7028 • http://rsp.csusb.edu/
5500 UNIVERSITY PARKWAY, SAN BERNARDINO, CA 92407-2393

# APPENDIX D

## FOCUS GROUP QUESTIONS

Moodle Pilot Project Focus Group Questions

Please remember Moodle is a Learning Management System, much like our Edline, but with more robust features. We are not looking at replacing Edline, since it is so tied to our grading system, but rather looking at supplementing Edline.

1. What specific features are you interested in learning about and possibly implementing in Moodle? E.g., wikis, forums, posting of documents, embedding multimedia, collaborative grading, private chat rooms, etcetera. (Wikis are the same technology Wikipedia uses, which allows for online editing of a document, much like this Google Doc. See http://www.youtube.com/watch?v=-dnL00TdmLY

2. What is the best way to communicate together to resolve issues: email (personal or work), phone, instant message, text messaging, Twitter, Skype, face-to-face, or other (please specify)?

3. How do you hope to augment your classroom instruction with Moodle?

4. What would be the most effective way to provide instruction to you on how to implement Moodle's capabilities? Online video tutorials, sandbox areas to experiment with the features before a live student class, face-to-face meetings,virtual meetings, a hybrid of these methods? Please explain.

5. What is your ultimate goal in participating in this pilot project? Explain.

6. What would your dream classroom look like as far as technology is concerned? Elaborate.

7. Why do you think technology use, specifically in the English classroom, is important?

# APPENDIX E

# MOODLE EVALUATION SURVEY

## Moodle Pilot Project: A Survey to Assess the Efficacy of Using Moodle to Supplement the English Classroom at Hesperia High School

Thank you for taking the time to participate in this survey. Your responses will help me to assess the efficacy of using Moodle as a supplement to our existing Content Management System, hereafter called CMS, Edline™. By asking specific questions about your usage of Hesperia English, based on the Moodle platform, I hope to evaluate the strengths and weaknesses of utilizing the Moodle platform as an extension of the English classroom here at Hesperia High School. This survey should take only a couple of minutes to complete, and your answers will only be used to help assess the positive and negative aspects of implementing a system based on Moodle across the English Department . As such, your answers will be kept strictly confidential.

### Module Training

The following questions will help to determine which form of training you received was most beneficial to your understanding of how to operate Moodle.

The following sentences will ask you to rate your agreement with the statements provided. Please rate the responses on a scale of 1 to 6 where 1 is completely disagree and 6 is completely agree.

*Forums*

1 Completely Disagree

2 Somewhat Disagree

3 Disagree

4 Somewhat Agree

5 Agree

6 Completely Agree

1. The how-to screen recordings helped me to understand how to construct and implement a forum in Moodle.

1 2 3 4 5 6

2. The sandbox area helped me to understand how to construct and implement a forum in Moodle.

1 2 3 4 5 6

3. Actually constructing a forum myself helped to understand how to construct and implement a forum in Moodle.

1 2 3 4 5 6

*Groups*

1. The how-to screen recordings helped me to understand how to construct and implement groups in Moodle.

1 2 3 4 5 6

2. The sandbox area helped me to understand how to construct and implement groups in Moodle.

1 2 3 4 5 6

3. Actually constructing groups myself helped to understand how to construct and implement groups in Moodle.

1 2 3 4 5 6

*Blocks*

1. The how-to screen recordings helped me to understand how to construct and implement blocks in Moodle.

1 2 3 4 5 6

2. The sandbox area helped me to understand how to construct and implement blocks in Moodle.

1 2 3 4 5 6

3. Actually constructing groups myself helped to understand how to construct and implement blocks in Moodle.

1 2 3 4 5 6

## Use of Moodle/Hesperia English

The following questions will help to determine how you used Moodle and any problems you encountered.

*The following sentences will ask you to rate your agreement with the statements provided. Please rate the responses on a scale of 1 to 6 where 1 is completely disagree and 6 is completely agree.*

1. Being completely subjective, I feel my students benefited from using Hesperia English.

1 2 3 4 5 6

2. I had no problem accessing the server; that is, HesperiaEnglish.com always loaded and displayed correctly.

1 2 3 4 5 6

3. I had, what I would consider, *major* technical problems (like lost users, pages not loading, information not displaying right, etc.) with HesperiaEnglish.com.

1 2 3 4 5 6

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