

**PROPOSED BLENDED LEARNING MODEL FOR
DON MARIANO MARCOS MEMORIAL STATE UNIVERSITY
SOUTH LA UNION CAMPUS (DMMMSU-SLUC)**

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ABSTRACT

The study showed the contributions of the developed content management system (CMS) using DRUPAL in a blended mode approach in the delivery of instruction. The proposed model can be used as a guideline for the implementation of Blended Learning (BL) for schools that wish to experiment on it.

Professional Ethics in IT was delivered using blended learning uploaded to a webhost. A total of 80 BSCS students comprised the subjects in the control and experimental groups. The subjects in the control group were taught using the traditional face-to-face instruction while the experimental group utilized the BL approach. A teacher-made test was used as post test. The final mean grade of the subjects in the experimental group is higher than that of the control group indicating that the subjects in the experimental group learned more. The study, too, revealed that the institution is not ready for the BL approach while the faculty members and students are ready for the blended learning approach.

The cost effectiveness for the BL approach increased from -28% during the first semester of first year of implementation to 70% during the 5th year of implementation. The proposed model developed by the researcher has three major components. These components affect the implementation of blended learning approach which includes the students, faculty and the institution. The model addressed issues like the need to determine if the students, faculty and the institution are ready for a blended learning approach. It defined the roles of these components in the preparation, implementation and evaluation stages. The three components should be unified to support the implementation of BL to be successful.

Keywords: *Blended Learning Approach, DRUPAL, Content Management System*

Introduction

Blended learning (BL) is gaining acceptance and being adopted at college campuses throughout the US (Bonk & Graham, 2005; Allen & Seaman, 2004) and it has also become an emerging strategy in the Philippine Education System (Refre, 2012; Arimbuyutan, 2007). Because of the vast number of emerging technologies, students' eagerness demands its inclusion in the teaching and learning strategies of colleges or institutes. It has to be an integral part of the current curriculum of the school system.

The researcher thought of developing this study because he believes that, with the advent of technology, computers should be taken as an aid to learning. Students become very proud of their work by using technology in their education. This endeavor can be shared with other students, parents, and the public. Likewise it can increase students' motivation. With the modernization of the educational system, the researcher saw this as a concern of Don Mariano Marcos Memorial State University – South La Union Campus (DMMMSU-SLUC), particularly the College of Computer Science (CCS). Thus, the campus and the CCS joined efforts to fulfill the directives to provide students with knowledge and skills they need. Computer courses in the University are of great importance for nation's development.

One important IT subject is Professional Ethics. Professional Ethics in IT is a 3-unit major subject equivalent to 3 hours lecture a week. Currently, this subject is taught using the traditional method of teaching. Responding to the provision of RA No. 7722 otherwise known as the "Higher Education Act of 1994" to keep pace with the demands of global competitiveness for ITE (CHED MEMORANDUM ORDER (CMO) NO. 53; Series of 2006) , the researcher developed and designed a blended mode approach of teaching at DMMMSU-SLUC. The researcher used DRUPAL as the CMS. The proposed program/model will help faculty members design their strategy in delivering their pedagogies regardless of the CMS which they will be using. It is within this context that the present study was conceptualized to propose a blended learning program for DMMMSU-SLUC.

Statement of the Problem

This study sought to propose a Blended Learning Program for Don Mariano Marcos Memorial State University – South La Union Campus (DMMMSU-SLUC).

Specifically, it sought answers to the following problems:

1. What is the extent of readiness of the university, faculty and students for blended learning?
2. How is the blended learning approach developed?
3. What are the features of the blended learning approach?
4. How effective is the blended learning approach?
5. What are the problems, issues and challenges encountered by the students using this approach?
6. How cost effective is the blended learning approach?
7. What model can be proposed for the blended learning approach for DMMMSU-SLUC?

Method

The study used the Pretest - Posttest Experimental Group Design or Posttest Only Control Group Design. It involved the following steps: (1) random assignment of subjects to experimental and control groups. The researcher determined as to who will be the experimental and control group by flipping a coin. (2) administration of the treatment to the experimental group but not in the control group, and (3) administration of a posttest to both groups (Borg and Gal, 1979).

Two groups of third year BS Computer Science students served as the subjects of the study. The two groups were carefully matched according to their grade point average (GPA) in their subjects during their first and second years in college. Their subjects include General Education Courses, Basic Core Courses, Professional Courses, CS electives and free elective courses. The grouping was done using fishbowl technique. The grouping was observed during the enrolment and was used as basis for the students' section during the first semester of school year 2012-2013. The researcher randomly identified the section that was to be assigned to the experimental treatment through the flipping of a coin.

The experimental group was oriented on how to use the CMS. during the initial meeting, the researcher discussed policies and disseminated instructions on how to use the Content Management System using DRUPAL. Class cards were collected as a control mechanism in order to determine

students who were enrolled in the class. Then, email addresses were submitted as a means of enrolling the students in the BL approach. Passwords and user accounts were sent through their email. The accounts sent were used as login information to the CMS. Students in the experimental group followed a schedule for online and Face-to-face (F2F) sessions. During online sessions, the students used their account name and password to log in into the CMS. He will then proceed to the course learning section and read the lessons, view video clips, perform tasks and answer questions as required in the learning tasks. He is also required to contribute ideas, suggestions, comments, and clarifications using his blog posts. At any session during the online mode, the student can explore different sections of the CMS. Assignments are posted at the Calendar Section so that students will have uniformity in locating assignments posted.

During the online sessions, students can direct questions to a specific student regarding some clarifications to a topic/s that was already discussed. Any student can reply to the query. This will allow the CMS to encourage exchange of views or ideas. Moreover, F2F interaction was also required in the experimental group. During this session, concerns, queries or problems regarding the lessons were tackled. It was also during this time that examinations were conducted. The researcher only conducted exams/quizzes during F2F sessions to prevent cheating among students. The researcher who was also the assigned instructor in the course determined the number of F2F sessions. The number of F2F sessions can vary according to the need of the instructor or students in resolving some concerns, issues or supplemental topics that were not discussed during the online session.

Due to the absence of an internet connection in the laboratory, the students are required to take their online session at any internet café or in the convenience of their home. On the other hand students assigned to the control group underwent class discussions on lecture rooms. The researcher made sure that the rooms were very conducive to learning and the students were comfortable in it. At the start of the lecture, the teacher reviewed the topics previously discussed, presented the lessons and gave assignments and activities based from the syllabus.

The experimental group was properly oriented on how to use the developed CMS-based instructional materials and its importance in their studies. Activities, Assignments and learning tasks were parallel to the two groups. The blended learning approach more or less was scheduled for 46

hours for dedicated online learning and 24/7 for those with internet access at home and more or less 8 hours of face-to-face session during the duration of the experiment. The experimental treatment started from June 11, 2012 until October 2012 which was a full term. For this reason, the posttest served as their final examination for the course.

Results and Discussions

The analysis of the results of the survey questionnaire with regards to the readiness of the Institution to blended approach is categorized into seven: Administrative Applications, Educational Technology, Student Services, Strategic Planning and Leadership, Teaching and Learning, Pedagogical Practices, ICT Status and Physical Facilities.

Based on the results, the institution is not ready for blended learning approach with an average mean of 2.50 with a descriptive equivalence of “insufficient”. The analysis of the results of the survey questionnaire on the readiness of the faculty members for blended approach is categorized into six: Length of Service, Organization and Time Management (category mean = 3.11), Communicating Online (category mean = 3.36), Teaching and Online Experience (category mean = 2.54), Technical Skills (average category mean = 3.41), and Process Integration (category mean = 4.38). Overall results show that the faculty members are ready for blended learning approach.

As to the readiness of students to BL approach, results showed that students are ready for BL approach as evidenced by the following indicators with their respective category mean: a) technology and ownership (category mean = 2.97) with a descriptive equivalent of “Occasionally”; b) Preferences and Perceptions of Educational Technology (category mean = 3.04) with a descriptive equivalent of “neutral”; c) Usefulness (category mean = 4.36) with a descriptive rating of “very useful”; d) Experience with Computers (category mean = 3.37) equivalent to “Occasionally”; e) What do they think of computers (category mean = 3.47) rated as “agree”; f) Self-Direction (category mean = 3.89) with a descriptive equivalence of “agree”; and g) study habits (category mean = 3.73) with a descriptive equivalence of “agree”.

The Blended Learning approach was developed with the aid of the ADDIE model with some revisions due to the inclusion of the learner’s interaction in each phase. The model includes the analysis phase, design phase, development phase, and implementation phase.

The CMS has 3 types of users: the administrator, the teacher, and the student. The administrator controls all the activities of the site. The administrator can manage different aspects of the content published on the site. The teacher who is assigned by the administrator manages the content in terms of the learning environment and learning course. He is responsible for posting discussions, assignments, lectures, or any learning activities. The students take the LMS and interact with the teacher in the discussion using the different features of the LMS.

The features of DRUPAL includes: assignment calendar, chat messages, course learning, course syllabus, students' blog, teachers' blog, video conferences, recent posts and create contents. As to the effectiveness of the Blended Learning approach, the results of the post test show no significant difference, therefore, learning is as effective as traditional approach. However, the researcher made use of the final rating as a means of measuring the effectiveness of the blended approach.

The results of the analysis of the final grades of the Experimental and Control groups using the mean grade are higher than that of the control groups. This indicates that they have learned more. The results further strengthen the effects of the BL with a computed F value of 0.014 at 0.05 level of significance indicating that the Final grades of the students in the experimental group are significantly higher than the mean final grades of the control group. This implies that the BL approach is effective compared to the traditional approach.

The proponent made a questionnaire in order to determine the problems, issues and challenges they encountered during the implementation of the blended learning course. He counted the frequency of each of the problems encountered by the students in taking BL approach. Based on the results, the highest frequency referred to as "the need to have more face-to-face meetings" got the highest concern among the students. Moreover, students do not have sufficient money to rent computers with internet connection or no access in the internet which made them prefer more or less the traditional mode than the BL approach. The need to a more detailed explanation of lessons was also noted in the table. Some minor concerns were attributed to the features of the CMS like chat tools, assignment notifications, unfamiliar features, passing assignments, threads,

Good points were also tallied and based from the results, the ability to post and share topics online was the highest good point by the students. Students thought it was fun for the BL approach. They were able to

maximize the use of technology in their coursework, they were updated with current trends and laws. They were able to spare time to do more activities in their other subject because they can access their CMS anytime of the day.

The comparative cost analysis of the traditional approach and blended learning approach in 5-year Implementation based on a two-classroom unit of measurement revealed that the cost effectiveness in the first year of implementation is greater in the BL approach than in the traditional approach. This is because of the initial investment in the preparation of BL approach like trainings for faculty members, internet subscription, honorarium of faculty members, electric consumption and depreciation cost. However, it can be noted also that the cost effectiveness of the BL approach increases in the succeeding years of implementation from -28% during the first semester of first year of implementation to 70% during the 5th year of implementation.

The proposed model developed by the researcher has three major components. These components affect the implementation of blended learning approach at DMMMSU-SLUC which includes the students, faculty and the institution (Administration). These are the key players that make its implementation successful. The willingness to migrate from a brick and mortar session to a blended mode solely depends on the support and unified interaction among these components. It is within this purview that this model was developed.

Conclusions

Based on the results of the study, it was found out that all courses offered at DMMMSU-SLUC are using traditional approach. The institution needs attention on the implementation of BL. The bulk of requirements needed to implement BL make the institution not ready with its implementation. But, the willingness of the administrators to comply with the requirements like technology, infrastructure and student support in implementing BL plus their belief that technology is indeed a component of learning help the researcher develop a model for DMMMSU-SLUC.

Students are ready to take blended approach because of their familiarity with the different technologies. Though slight apprehensions are apparent due to financial concerns as students are unable to pay rents from internet cafes because of the absence of internet connection in the school, faculty members are also ready in terms of shifting their teaching strategies to a blended approach. Most of them do not have any experience in online

learning or online teaching however, they are willing to attend trainings and programs related to online or blended learning.

Learning is also evident in the experimental group because of the significant difference in their mean grade compared to control groups. Issues and concerns were also manifested during the implementation of the BL because there were issues that need to be acknowledged like the need to have more F2F sessions, absence of internet connections, dedicated laboratory rooms, high cost of rents, unable to understand topics/lessons, technical problems with the use of LMS among others. These may be correlated to the anxiety experienced by students, faculty and administrators being the first time to conduct and implement BL in the school. Results for the cost effectiveness based on the study are plausible. The 5-year implementation of BL will eventually be cost effective in favor of DMMMSU-SLUC. The developed model will serve as a guide in order to implement it successfully.

Recommendations

Based on the findings, the researcher made a recommendation to the DMMMSU-SLUC as a guideline for the implementation of the BL approach:

1. The University must adopt the Blended learning approach;
2. Institution or the administrators has also a major role in the implementation of BL. This includes faculty support and student support. The campus should have a strong task force intended for BL learning. This includes the presence of Course developers, course designers, programmers as regards to BL approach. The presence of an objective Strategic Plan giving similar attention to ICT is also very important. This will enable the institution to acknowledge the issues regarding infrastructures in implementing BL;
3. Students' readiness should not only include their competency in using technologies but also consider learning styles. Because of the heterogeneity of a group, there is no single learning style best for one group;
4. Faculty members should attend trainings on BL or similar trainings. In this way the faculty members will be fully equipped with the different strategies in the implementation of BL;

5. Cost effectiveness analysis is an instrument to convince administrators to approve proposals. Therefore, a deeper study is required to capture the realization of implementing the BL. Conduct feasible studies and do surveys. Tap local government units, or private sectors to support the plan.

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