

LEARNING MANAGEMENT SYSTEM: EFFECT TO THE ACADEMIC PERFORMANCE OF FRESHMEN COLLEGE STUDENTS IN POLYTECHNIC COLLEGE OF BOTOLAN

Author's Name: Arnel M. Bermejo JR¹, Irish Jean M. Berou², Jhonaida D. Lopez³

Affiliation:

1. Department of Education, School Division of Zambales, Teacher III, Philippines.
2. License Professional Teacher, President Ramon Magsaysay State University, Philippines.
3. License Professional Teacher, Polytechnic College of Botolan Philippines.

Corresponding Author Name & Email Id: Jhonaida D. Lopez, jhonaidagudalopez@gmail.com

ABSTRACT

The study aimed to examine the effect of Learning Management System on the academic performance of freshman of Polytechnic College of Botolan. There are thirty-eight (38) female and fourteen (14) male respondents aged 20 years old and college students enrolled in Polytechnic College of Botolan. Descriptive research was employed in the study, using ANOVA, and Pearson r to test the significant difference and relationship variables. Majority of the respondents got rating of very good. The respondents strongly agreed that the learning management system was recommendable to their classmates. The respondents strongly agreed that the learning management system is beneficial to their studies ($WM=3.42$, ranked 1), that it is recommendable to their classmates for study purposes ($WM=3.42$, ranked 1), that they have the knowledge to use the LMS, that it is compatible with other systems they use, and that it improves both synchronous and asynchronous classes. (Ranking 5, $WM = 3.38$). The researcher recommends that the instructor provide students timely feedback on their work and give them more thorough instructions on how to finish tasks that are available in the learning management system. Workshops or general training on how to use the LMS more efficiently may be held by school administrators. Future researchers may be able to conduct this study qualitatively with a broader scope for validation purposes.

Keywords: Learning Management System, Polytechnic College of Botolan, Beed students, descriptive

INTRODUCTION

Learning Management System (LMS) has been widely adopted by higher education institution globally for over a decade. Different institutions now spend a significant proportion of their limited resources on installing and maintaining these systems. This expenditure continues to increase, raising questions about whether LMS in these institutions is fulfilling their potential (Mtebe, 2015). As mobile technology has matured sufficiently in recent years to support advanced learning activities, its adaptation for this purpose has spread globally. This is natural since students are surrounded by mobile technology in their daily lives. Additionally, the proliferation of advanced wireless technologies has facilitated learning on the go, whereby individuals can access educational content regardless of their location. Mobile technology also offers various opportunities for timely and active knowledge acquisition by exchanging learning materials (Woodill, 2011; Jones, Scanlon, & Clough, 2013). Assessing quality in online teaching is problematic, both due to a lack of agreement over standards and criteria for evaluating learning outcomes and for mixed-mode teaching; an inability to separate the learning that occurs online from that which occurs in other environments (Bakia, Shear, Toyama, & Lassetter, 2012). Lack of awareness amongst users on the existence or value of LMS has an impact on LMS usage within the institutions. If users are not aware of LMS's existence, it is evident that they will not use it. Studies have shown that faculty members in higher education in the region either are not aware of LMS's existence or the educational value they provide. For example, 50% of respondents (out of 44) indicated that they were unaware of the existence of LMS at the National University of Science and Technology of Zimbabwe (Dube & Scott, 2014). Similar findings were obtained at the Open University of Tanzania, where 27% of faculty members were unaware of LMS's existence (Bhalalusesa, E., & Clemence, 2013). Since LMS is new in the current educational situation, students are adjusting. Thus, their performance might be affected by this new learning modality. This is the main reason the researcher sought to determine the effect of using LMS on students' academic achievement.

Learning Management Systems (LMS) is gaining momentum in the Philippines as educational institutions and businesses seek to provide flexible, accessible, and cost-effective training solutions. The Commission on Higher Education mandates the adoption of LMS in higher education institutions. This is based on CHED Memorandum Order No. 04, Series of 2020, which outlines the policies, standards, and guidelines for the establishment and operation of e-learning programs in HEIs. The government's push towards digital education and the growing adoption of cloud-based solutions are driving the growth of LMS in the country. However, there are still several challenges that need to be addressed, particularly in terms of digital infrastructure and teacher training and support (ICEnSO 2023).

The key results of the study will be beneficial to various stakeholders in education. For students, the findings will enable them to become more engaged in different platforms for learning, enhancing their academic experience. Instructors will also benefit as the study will help them be equipped to serve as partners and support systems in teaching and guiding their students throughout the learning process. Moreover, IT developers may use the results to create more efficient and effective learning platforms that address the needs of both learners and educators. Finally, school heads will gain insights that can help them become more involved in innovations and the integration of technology, ultimately promoting better and higher-quality education.

STATEMENT OF THE PROBLEM

This study aimed to determine the effect of the Learning Management System (LMS) on successful and effective learning. Specifically, it sought to answer several questions, including the profile of the respondents in terms of age, sex, and course; the general weighted average (GWA) of the respondents; and their perception toward the use of the LMS. Furthermore, the study sought to determine whether there is a significant difference in students' perceptions of the LMS when grouped according to their profile, and whether there is a significant relationship between their perception of the LMS and their general weighted average.

Methodology Research Design

Descriptive quantitative research design was employed in the study. A questionnaire was used to determine the respondents' perception of the learning management system. Descriptive research is a type of research that describes a population, situation, or phenomenon that is being studied. It focuses on answering the how, what, when, and where questions of a research problem rather than the why. Descriptive research is a quantitative method that attempts to collect quantifiable information for statistical analysis of the population sample. It is a popular market research tool that allows researchers to collect and describe the demographic segment's nature (Creswell & Creswell, 2017).

Respondents and Location

The respondents of this study were first-year college students of Polytechnic College of Botolan since they are new in using a learning management system. The researcher employed the purposive sampling technique, also called judgment sampling, in which respondents are chosen based on similar qualities they possess. The institution is located at Batonlapoc, Botolan, Zambales.

Table 1

Distribution of the Respondents

Course	Frequency	Percent
BEED	36	69.20
BSIT	16	30.80
TOTAL	50	100.00

Instruments

A Google Forms survey was used in gathering the necessary data for the research study. The instrument was based on Weaver, Sprott, and Nair's (2011) study, "Academic and Student Use of a Learning Management System: Implication for Quality". The instrument consisted of three parts: The profile of the respondents as to age, sex, and course, the general weight average of the students, and the respondents' perception of the use of the learning management system. A four-point Likert scale was used to determine the respondents' perception regarding the use of the learning management system: 4- strongly agree; 3- agree ; 2- disagree; 1- strongly disagree (Appendix B). The instrument was subjected to a validity and reliability test and was found to possess a reliability value of 0.963, deemed excellent (Appendix E)

Data Collection

The researcher submitted a permission letter to the research adviser before conducting the study. Once signed, the approval of the school administrator was sought through a letter. After the approval of the head, the Google form was administered to the respondents through Facebook Messenger, group chat with the assistance of the class adviser. Contactless dissemination of the questionnaire was done since face-to-face administration of the questionnaire is restricted due to pandemic. The objectives and purpose of the study were clearly explained to the respondents (Appendix A).

Data Analysis

The Statistical Package for Social Science (SPSS) was used by the researcher to analyze the collected data and use statistical procedures. In Problem 1, the proportion of the respondents' profile characteristics was calculated using frequency and percentage. In problems two and three, the learning management system's average and evaluation were calculated using the Weighted Arithmetic Mean. F-Test was used in problem 4, the statistical tool was used to determine whether there were any notable

variations in how the learning management system was perceived when categorized by profile. The F-Test decision rules are as follows: Decision Rule 1: Reject the null hypothesis if the calculated significance (Sig.) value is less than or equal to the 0.05 threshold of significance ($\text{Sig.} \geq 0.05$).

The difference is significant. Decision Rule 2: There is no significant difference if the calculated significance (Sig.) value is higher than the 0.05 level of significance

($\text{Sig.} \geq 0.05$), with the exception of the null hypothesis. Additionally, in Problem 5, Pearson R was used to examine the considerable correlation between respondents' academic accomplishment and their evaluation of the learning management system. The Likert Scale and the qualitative description that follows were modified to quantify each indicator's replies.

RESULTS AND DISCUSSION

1. Profile of the Respondents

The frequency and percentage distribution of the respondents' profile in terms of age, sex, and course is presented in table 2.

Table 2

Frequency and Percentage Distribution of the Student-Respondents' Profile

Age	Frequency	Percent
21 years old	27	51.90
20 years old	10	19.20
19 years old	9	17.30
18 years old	6	11.50
Total	52	100.0
Mean = 20.12 or 20 years old		
Sex	Frequency	Percent
Male	14	26.90
Female	38	73.10
Total	52	100.0

Course	Frequency	Percent
BEED	36	26.90
BSIT	16	30.80
Total	52	100.0

Out of fifty-two respondents, 27 or 51.90% were 21 years old; 10 or 19.20% were 20 years old; 9 or 17.30% were 19 years old, and 6 or 11.50% were 15 years old. The mean age of the respondents is 20.12 or 20 years old. The respondents belong to the age range of 18 – 25 years old and considered as young adult (Lopez & Malay, 2019). According to Moran (2016), they are subgroup of the millennial generation, and most of the digital natives, meaning they grew up with digital communication technology. They are a very influential user group.

The majority of the respondents were female students, composed of 38 or 73.10% out of 52 respondents. In contrast, 14 or 26.90% of the respondents were male. In Buctot Kim and Kim's (2020) study, more than half of their respondents are female junior and senior high school students. In a survey conducted by Pew Researcher Center (2020), 54% are female.

As for the course, 36 or 69.20% of the respondents were taking Bachelor of Elementary Education, while 16 or 30.80% were taking Bachelor of Science in Information Technology.

Table 3

Frequency and Percentage Distribution According to Academic Performance of the Student-Respondents

Academic Performance		Frequency	Percentage
Very Good	90 – 98	26	50.00
Good	84 - 89	19	36.50
Fair	80 - 83	7	13.50
Total		52	100.00
Mean Grade		89.58(Very Good)	

The data revealed that out of fifty-two respondents, 26 or 50% of the students belong to a group with very good grades; 19 or 36.50% of the students belong to a grade bracket 84 - 89 with a good remark; and 7 or 13.50% were students with fair grade. The mean grade is 89.58 which shows a very good level of proficiency. The findings are similar to the study of Tus (2020) which revealed that the majority of the respondents (54.62%) got satisfactory grade with range of 85 - 89. A similar conclusion also showed that 46.32% of the students' academic achievement was satisfactory (Tus 2019).

Table 4

Perception of the Student-Respondents on the use of Learning Management System

Learning Management System	Weighted Mean	Qualitative Rank	Rank
1. I find learning management system useful for my study	3.44	Strongly Agree	2
2. Using learning management system enable me to accomplish my task better.	3.27	Strongly Agree	13
3. Learning Management System is compatible with common browsers on common hardware devices, tablets, etc.)	3.35		9.5
4. I need to undergo training to be familiar with tools and icons in the LMS	3.29		11
5. The college has supported the use of Learning Management System.	3.27		13
6. The system makes collaboration with students more interesting	3.42		3
7. I have the knowledge necessary to use Learning Management System	3.38		5
8. Learning Management System is compatible with other system I use.	3.38		5

9. Having use Learning Management system would recommend my classmates to use for study purposes.	3.46		1
10. Uploading and downloading materials is easy	3.27		13
11. Learning Management System enhances synchronous and asynchronous learning.	3.38		5
12. The software program application prevents unauthorized access.	3.35		9.5
13. I can get timely feedback from the instructor	3.25		15
14. The Learning Management System provides features to access learners' interest	3.37		7.5
15. My institutions holds training (workshop) for students on how to use LMS.	3.37		7.5
Overall Weighted Mean	3.35	Strongly Agree	

The respondents strongly agreed that the learning management system is recommendable to their classmates for study purposes (WM=3.46, ranked 1); the system is useful in their study (WM= 3.42 Ranked 2); They also agreed that they have the necessary knowledge to use the LMS, that it is compatible with other systems they use, and that it enhances the synchronous and asynchronous classes. (WM = 3.38, ranked 5). The characteristics of Moodle platform are user-friendliness, accessibility, and flexibility. It has a list of students on each course that allows the lecturer to know the last time each student accessed the platform. The system also has the ability to integrate Moodle into other systems the ability to allow synchronous and asynchronous interactions a personal area for draft writing and journaling as well as managing personal and private information and content that develops based on the teaching and learning needs and that can be reused (Khalid, 2016). Student opinions appear to reflect more on the use of technology made by teaching staff-students who have experienced

a well designed unit rich with resources, timely feedback, and good interaction with staff reported a positive experience with the technology.

The Learning Management System provides features to assess learners' interests and their available training workshops for students on how to use elements. Bravo, Sibayan, and Arcelia (2019) recommend employing game mechanics as part of the learning strategy to inject fun into the training. This, in turn, makes the learner more likely to remember what they have learned and less likely to abandon their training. Rank the least was the support the College gave in using LMS, uploading and downloading materials, accomplishing task in LMS, and providing timely instructor feedback. A substantial proportion of studies reported sites with minimal feedback, limited opportunities for interaction with their teachers, hyperlinks that did not work, and old or outdated information. In this study, students and staff appeared to have contrasting priorities: academic teachers were more concerned with technical aspects and workload issues. In contrast, students were more concerned with the quality of the online teaching, which was reflected in their perception that their teachers were not engaged with them in what they believed to have been an interactive learning environment. This suggests that quality online learning approaches are an essential adjunct to student learning, and if quality cannot be assured, then online learning may be of little value (Weaver, Spratt, & Nair, 2013).

Table 5

Difference in the Learning Management System when Grouped According to Profile

Profile Vari	Source of Variation	Sum of squares	df	Mean Square	F	Sig	Interpretation
Age	Between Groups	2.651	3	0.884	3.463	0.023	HO is rejected Significant
	Within Groups	12.246	48	0.225			
	Total	14.897	51				
Sex	Between Groups	0.201	1	0.201	0.683	0.412	Ho is accepted Not Significant
	Within Groups	14.696	50	0.294			
	Total	14897	51				
Course	Between Groups	0.437	1	0.437	1.511	0.225	Ho is accepted Not Significant
	Within Groups	14.460	50	0.289			
	Total	14.897	51				

Table 5 shows that the significant values for sex (0.412) and course (0.225) are higher than the 0.05 alpha significance level. The null hypothesis is accepted. Therefore, the sex and course of the respondents do not differ significantly in their perception of the learning management system. Students' beliefs and understanding of the learning management system are the same. The results corroborate the study of Dellosa et al. (2012) that found no significant difference in sex and course in the use of the learning management system. The significant value for age (0.023) was lower than the 0.05 alpha level of significance. The null hypothesis is rejected. The age of the respondents differs significantly in their perceptions of the learning management system. Data revealed that younger respondents tend to agree more about the use of LMS. When students were observed regarding their age and year of study, it was found that these groups assigned different significance levels to quality characteristics and were not equally satisfied with them. It was also found that there is a substantial statistical difference in the level of importance students give to quality characteristics and student satisfaction based on how much time they spent using the Moodle application. This is also noted as one of the most critical aspects of the research conducted by Horvat, Dobrota, Krsmanovic, & Cudanov (2015).

Table 6

Correlation between Learning Management System and Academic Performance of Respondents

Source of Correlation			Grade	Decision	Interpretation
LMS	Academic Performance	Person Correlation	0.055	Ho is accepted Not Significant	Negligible Relationship
		Sig. (2-tailed)	0.669		
		N	52		

Table 6 shows that the computed significance value (0.669) exceeds the 0.05 level of significance. Therefore, the null hypothesis is accepted indicating that there is no significant relationship between the use of the Learning Management System (LMS) and the respondents' academic performance. This result suggests that students' engagement with the LMS does not have a measurable effect - either positive or negative - on their academic achievement. Furthermore,

finding supports the conclusions of Alkis and Temizel (2018) and Broadbent (2016), emphasized that students' academic success is influenced more by factors such as self-effi
motivation, and learning strategies than by the frequency or extent of LMS usage.

CONCLUSION

Based on the findings, the researcher conclude that the majority of the respondents are 20 years of age, mostly female students enroll in Polytechnic College of Botolan taking Bachelor of Elementary Education and Bachelor of Science in Information Technology. The students demonstrated a good level of proficiency in their academic performance. The respondents described the learning management system as recommendable, useful, and collaborative. The perception towards the learning management system differed significantly on age attribute but not on sex and course of the respondents. Furthermore, the learning management system does not affect the academic achievement of the respondents.

RECOMMENDATION

In the light of the preceding conclusions of the study, the following recommendations were advanced: Instructors may provide timely feedback on students' output and indicate more precise instructions on how to do the tasks provided in the LMS. School officials may conduct general training or workshops on how to utilize the LMS better. Students should also be capacitated in using the learning management system to provide more efficient and quality services. Furthermore, a follow-up study may be conducted on the ease of use, usability, and technical aspects of the learning management system for further enhancement. Future researchers may also conduct this study qualitatively, in a broader scope, for validation purposes.

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