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Students' Evaluation in Learning Management System (LMS) as Educational Delivery Tool

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Abstract: ***The progression of technology constitutes the learning acquisition which is one of the pillars of education. Researches showed that it gives profound influence in reshaping learning and teaching mode in the schools like Learning Management System (LMS) tool. This study aimed to evaluate whether school-related personal background, study habit or frequency of studying, computer and online technology experience, problems encountered in the subject, and difficulties faced in the LMS environment are the determinants of students' performance exposed to LMS. A descriptive survey method was used that includes a researcher-made questionnaire, which was pilot-tested, and interviews. The questionnaire was designed base on the variables reflected as useful data from the respondents. There were ninety (90) Bachelor of Science in Information Technology student-respondents. Results show that most of the students have less access to technology. It implies that students are inexperienced and are not exposed to computer and new technologies hence they experience problems in using LMS that also affect their study habit. The school-related personal backgrounds, study habitand computer and online technology experience effect differently with the performance of the students exposed to LMS. Teachers may be considerate in introducing LMS to minimize time pressure and adjustment issues.***

Keywords: Learning Management System, Teaching and Learning mode, Descriptive Normative Research, Teaching Tool, Teaching Technology

1. Introduction

There is no limit to the amount of learning each person should receive hence, the demand for education acquisition is growing. This is a dominant force bearing in the industry of educational providers today, a reason ofextremely looking the course offering or the curriculum to curve the said demand. All above leads the introduction of the new educational approach utilizing every tool available, including advanced technology. This is one measure that every institution is facing, believing that technology permits development and deliberately can elevate the standard of learning.

Technologies recently accelerate learning that years ago only seemed fantastic. It is not surprising anymore, yet one can expect that technology progression permeates and configures the learning acquisition of individuals and its well-being already rooted in the pillars of education. Technologies amalgamation to education is already expected in the schools that are enthralled by the conviction to grip productivity improvement and competitive excellence.

Computers and internet that provide a valuable opportunity to practice learning techniques are the technological innovations that educational providers churned out. It then provides phases changing the traditional teaching and learning mode to an e-learning environment. In the E-learning theory of Mayer, Sweller and Moreno the kind of learning emphasized is consist of cognitive science principles that describe how electronic educational technology can be used and designed to promote effective learning. Today, the term eLearning has captured a more comprehensive scope from the use of personal computers and the Internet to the utilization of more advanced applications, as well as devices or tools for more effective teaching and learning. Currently, the local academe and industry have incorporated eLearning, and most of them are confined to the Internet or are web-based (Som Naidu, 2006).

E-learning platforms are also known as Learning Management Systems (LMSs) which are "internet based, software allowing instructors to manage materials distribution, assignments, communications and other aspects of instructions for their courses" (Abu Shawar, 2009, p. 3). According to Song, 2004; Uzunboylu, Ozdamli, &Ozcinar (2006) in the citation of Nasser et al. (2011), LMS can efficiently support in instruction because of its organized "learning structure." AlsoOzdamli, LMS goes beyond the classroom through the use of emails, group discussions, student-teacher interaction, etc. where knowledge and content can be posted and transferred (Kim & Lee, 2008). Most of these activities are done on a daily basis by students using the computer, Internet, and email, but an LMS facilitates them through a carefully managed system (Cox et al., 2004; Somekh et al., 2002).

This matter foretells Leyte Normal University (LNU) the perusal of LMS as a solution to the challenges currently faced by the IT Unit. Problems include the conviction on how to endure the continuous learning of the students amidst constant changes and technology advancement. Another is the drive to encompass the Information Communication Technology far beyond LNU by producing quality and updated graduates, and that the graduates can also be at par globally. For this, IT teachers believed that it is also a continuous challenge to upgrade teaching materials, strategies, and approaches in the delivery of lessons as the mere facilitator of the classroom. This fact anchors to the theory of Carl Rogers (1980)'s facilitation theory which basic premise state that learning will occur by educator

acting as facilitator, that is by establishing an atmosphere in which learners feel comfortable to consider new ideas and are not threatened by external factors (Laird 1985).

Students enrolled in the IT subjects offered in the university originated from different high schools where orientation, culture, and knowledge foundation are different. These caused an exertion of effort for the teachers with the aim of partaking uniform levels of teaching. The convergence varied students impetus a pressure of the teacher, especially in large class size.

Opting to favor LMS, as considered solution to the challenges, the IT Unit pursued implementing LMS as an educational delivery tool in teaching different subjects in the course. Faculty members of the said department believed that LMS is an advantage and convenient technique in teaching and learning. Thus, transition from traditional classroom setting was then changed to an E-learning setting using LMS as teaching delivery tool. With LMS student's performance concerning subject requirements completion is still low that most of the students in the class could not make to submit the requirements by the given deadline. The quality of output submitted by the students while using LMS remains static in comparison to their output from the previous traditional teaching delivery. In the context of LMS, student's participation as well is not augmented based on the teacher's record.

The transition that occurred can be rooted from Nancy Schlossberg (1981) theory that identifies thefour factors influencing how one cope during transitions, these are situation, self, supports, and strategies. It is for this reason that this paper evaluates the issues concerning student's performance in LMS as educational delivery tool as basis in enhancing and implementing future strategies, support and approaches to be utilized in the instructiondomain.

2. Methodology

Research Design
This study used descriptive survey method. The researcher-made questionnaire and follow-up questions were completed to collect information from the specified population of students in Bachelor of Science in Information Technology. The questionnaire was design base on the variable reflected as useful data from the respondents. This was processed to obtain the Performance of Information Technology Students using the LMS in Leyte Normal University.

Respondents of the study
The respondents of the study were those who were enrolled in Information Technology Department taking up Bachelor of Science in Information Technology, who was enrolled last school year 2017-2018. Ninety (90) students who were enrolled in Multimediasubject were the considered respondents of the study.

Data gathering
The identification of the respondents was done before the preparation of the research instruments. After the revisions of the questionnaire base on the pilot-testing result, the gathering of data was undertaken. Questionnaires were personally administered by the researcher in which all student-respondents were explained as to how the instrument is to be filled up. When all the instruments were answered by the respondents, data were organized and analyzed using appropriate statistical tools. Secondary data was also collected from the teacher using the class record.

Data Analysis
Gathered data were analysed using frequency counts, percentages and weighted mean. Regression analysis was also sued to identify the factors effecting change on the performance of students exposed to LMS.

3. Result and Discussion

School-Related Personal Background
The result in Table 1.0 below shows that most of the respondents were graduated from National High School. This supported the fact that most (82.22%) of the respondents came from barangays or barrios where the national high schools are situated. Barangays in the rural areas usually have no reasonable access to technology. This situation can be supported by the so-called digital divide which is according to Talandron et al. (2015) digital divide is the uneven distribution, access, and utilization of Information and Communication Technology (ICT) which is a valid implication in the Philippines. The beneficiary of the uneven distribution will not experience educational and socioeconomic opportunities (Gatautis, 2015).

Table 1: School-Related Personal Background of the Respondents

Item	Frequency	Percentage (%)
1. Kind/Type of HighSchool, the Respondents, Graduated from		
National High School	66	73.33
Private Academy	20	22.22
University	4	4.44
Total	90	100.00
1. Type of Graduation from High School		
With Honors	20	22.22
Without Honors	70	77.78
Total	90	100.00
3. The disability that may affect learning		
Yes	7	7.78
No	83	92.22
Total	90	100.00

The 77.78% out of the total number of respondents graduated from High School without honor. This indicates that most of the respondents were not showing remarkable achievement during their high school which mightalso be a basis why they will become achievers in college. According to McCall, Evahn, and Kratzer (1992) as cited by (Siegel et al.) high school students' academic achievement is more closely correlated with students' college and career success than ability. However, having no award or honor in the previous school does not disregard the chance of the student to become the achiever in college. There is a so-called teacher sense of efficacy (Ashton 1984) which refers to the degree of teachers believe in their capacity to affect the student performance. This sense of efficacy was introduced to educational research by Rand Corporation evaluation studies (Armor, Conry-Osequera, Cox, Kin, McDonnel,

Pascal, Pauly, and Zellman, 1976; Berman, McLaughlin, Bass, Pauly, and Zellman, 1977).Especially that most of the respondents have no disabilities that may affect the student's learning, it would not be difficult for teachers to have different options to create the classroom environment that encourage and promote student learning.

Study Habits of the Information Technology Students

Classification of the study habit or frequency of studying as the variable of the study comes with fourcategories, such as always, often, sometimes and never that segregates the 90 respondents of the study.

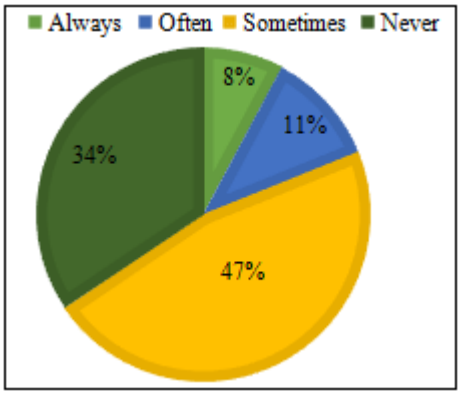

Figure 1: The Classification of the Study Habit of the Respondents

The result in Figure 1.0shows that most of the students in IT enrolled in the subject only study sometimes or in specific occasion and situation. This defies the learning as well as the teaching aspects in the classroom. Mark and Howard (2009) said that lack of effectiveness or good study habit is the most common issue concerning students' success. Further, they acclaimed that if students can develop a good study habit and with proper discipline, they are compelled to perform remarkably well in their academic pursuit.

As defined by Crede and Kuncel (2008) study habits denotes the degree to which the student engages in regular acts of studying, characterized by appropriate studying routines (e.g., reviews of material) transpiring in an environment that is conducive to studying.This is also in agreement with the findings of Koko, (1999) that announced that the poor academic achievement or failure is a consequence of poor study habit.This is in agreement to Yu (2010) who found out that highachieving students had a more positive attitude toward study in that they detected and reacted positively to the favorable aspects of the situation they found themselves in, while the low-achieving students tended to be fault-finders, reacting to the negative aspects of a study.

Computers And Online Technology Experience Of The Information Technology Students

The experience in computers and online technology among Information Technology students of LNU was determined according to the different specific levels such as low-level experience, middle-level experience and high-level experience as shown in Table 2.0 below.

Table 2: Computers and Online Technology Experience of the Information Technology Students

Level	*Frequency*	*Percentage (%)*
Low	3	3.33
middle	79	87.78
high	8	8.89
Total	90	100.00

The fact that the students are all information technology who spend their studying time on the computer does not imply that all of the respondents have high experience or more experience in computer and online technology. It is found out that most (87.78% or 79 out of 90) of the respondents have a middle experience regarding computer and online technology while only eight (8) out of 90 respondents have the high level of experience towards a computer and online technology in 8.89%.Although most of the respondents were graduated from National High Schools in rural areas, they somehow experience computer and online technology, not to the extent but such experience is already significant.

Problems About The Classroom Environment In LMS

The lack of experience and exposure to technology incite the students to reluctantly study the lessons which affect their study habits. Subsequently, proficiency in using LMS is refuted. Hence students complain about time pressure, materials and other related issues in LMS setting as presented in Table 3.0.

Table 3: Problems Experienced in the LMS Classroom Environment

ITEM	Frequency	Percentage (%)
1) There wasinsufficient time in answering the assignment and other activities.	87	96.67
2) Time pressure in answering the questions and activities was experienced.	89	98.87
3) The platform used is not user-friendly.	54	60.00
4) There was no close contact or interaction between instructor and students.	86	95.56
5) Cheating is transparently experienced.	85	94.44
6) Plagiarism is practiced during the answering of assignments and quizzes.	77	85.56

As can be gleaned from the result, time pressure is the common problem encountered by most of the respondents which are factual because according to the eighty-seven (87) respondents they have insufficient time in answering the assignment and other activities.As cited by Ackerman and Gross (2003) the literature (Denton 1994; Miyazaki 1993) about time defines time pressure as a form of tension expressed in the perception of being hurried or rushed. Additionally, articles reporting on time pressure among university students have often focused on the injurious effects of stress and fatigue on physical health (Bartlett 2002); Appleton 2001; Buie 2001).

Orfus (2008) cited (Kelly &, Karau, 1993) that while time pressure has been shown to increase the rate of individual or

group performance, performance quality is shown to be less consistent. Further researches have shown if students have high levels of test anxiety and are under time pressure the quality of performance will decrease (Orfus, 2008).

The more than a half of the respondents also cited the problem about the contact or interaction with their teacher or instructor was experienced in the LMS classroom environment.To take into view, positive teacher-student interaction has a very crucial role in effective teaching and learning to take place (Arthur, Gordon, & Butterfield, 2003).That is according to the UK essay that cited (Krause, Bochner, & Duchesne, 2006) positive teacher-student interaction can be defined by shared acceptance, understanding, affection, intimacy, trust, respect, care, and cooperation. Moreover, Teacher-student Interaction has an impact on classroom management.

Usually Encountered Problems Perceive by the Information Technology Students about the Subject Taught

Table 4.0 presents the ten problems possibly encountered by the respondents about the subject taught. Most (98.89% or 89 out of 90) of the respondents said that they usually experience the problem related to the materials for the course activities that were not always available in an LMS mode of teaching. This is true if the teacher in the class who uses LMS will not update and populate the LMS with course activities and materials.

Table 4: Problems Experienced by the students about the Subject Taught

Item	Frequency	Percentage (%)
1) The topics are not well organized and well arrange for easy downloads.	80	88.89
2) The topics do not have link efficiently with each other.	88	97.78
3) The required preparation in each topic is not specified in advance.	20	22.22
4) The making of the assignment is not frequently experienced	10	11.11
5) The allocation of time in making online activities is not fair and specific.	50	55.56
6) The subject is not interesting	20	22.22
7) The materials for the course activities are not always available.	89	98.89
8) Topic assessment is not frequently made.	60	6.67
9) The subject requirements are new to me.	76	84.44
10) Illustrations, discussions, and deliberation of the lessons are not meet.	72	80.00

As it is defined by the FutureSchoolonline learning management systems, allow educational providers to deliver high-quality educational content to their students from anywhere, collaborate on class topics and assignments remotely and let students access, store and send content. However, in the context of the result above the respondents, the main problem about the subject is the availability and type of materials uploaded in LMS.It is important to note that teachers are responsible for the teaching materials to be used in the classroom. Moreover, according to Edward (2002) Teachers need instructional materials or teaching aids to help them in communicating effectively with the students to cope with their needs based on their abilities and potential.Muriana (2015) cited (Ralph, 1999) that modern teaching-learning demand that the necessary facilities, well-qualified teachers, suitable texts and instructional materials are needed to achieve the aims and objectives of teaching at all levels. Provision or presence of these facilities and materials is of great importance to enhancing better and practical learning in schools.

Regression Analyses of Factors Effecting Change in the Performance of Students Exposed to LMS

The different factors evaluated as to their effect on the performance of students exposed to LMS include school-related personal background, frequency of studying or study habit and computer and online technology experience. Regression analysis was utilized specifically using stepwise method.The first criterion variable being considered is the Final Grade. Model 1 shows that Final Grades (FG) are positively affected by type of graduation (TG) (coefficient = 0.404; p-value=0.000) and type of school (TS) (coefficient=0.246; p-value=0.0040). These results mean that for every unit change in TG there is a corresponding increase of 0.404 unit in FG. Similarly, for TS, one unit change will effect 0.246 increase in FG. However, study habits (SH) and computer and online technology experience posted negative effect on FG. As presented in Table 5.0, every unit change in SH will cause a decrease of 0.217 in FG while a decrease of 0.270 if computer and online technology experience changes in one unit. Generally, these four variables posted significant effect on FG by 51.8%. This result shows that there are still other factors that account for 48.2% change in FG.

Model 1: Final Grades = 2.591 + 0.404TG - 0.217SH + 0.246TS - 0.27CTEexp; r^2=51.8%

Table 5: Model Summary

Term	Coefficients	SE	t-value	p-value
(Constant)	2.591	0.368	7.043	0
Type of Graduation	0.404	0.13	3.106	0.003
Study Habit	-0.217	0.052	-4.174	0
Type of School	0.246	0.082	2.993	0.004
COT Experience	-0.27	0.117	-2.317	0.023

Model 2 below shows that Submission of Requirements (SR) is negatively affected TG (coefficient = -0.707; p-value=0.000) and TS (coefficient=-0.342; p-value=0.0040). This means that for every unit change in TG there is a corresponsing decrease in SR. The same with TS one unit will affect -0.342 decrease in SR. On the other hand SH nailed positive effect on SR. As can be seen in the table, every unit change in SH will result to an increase of 0.243 in SR. The three variables in presented in Model 1 considered significant effect on SR by 45.65%. This shows that there are still other factors credited for the 54.35% change in SR.

Model 2: Submission of Requirements = 2.775 - 0.707TG + 0.243SH -0.342TS; r^2= 45.65

Table 6: Model Summary

Term	Coefficients	SE	t-value	p-value
(Constant)	2.775	0.443	6.26	0
Type of Graduation	-0.707	0.188	-3.762	0
Study Habit	0.243	0.073	3.327	0.001
Type of School	-0.342	0.117	-2.924	0.004

Model 3 below shows the Quality of Output (QO) that is negatively affected by TG (coefficient = -1.858; p-value=0.000). This result means that for every change in TG there is a corresponding decrease in QO. Basically, TG variable posted significant effect on QO by 26.1%, the other 73.9% are other factors contributing to QO

Model 3: Quality of Outputs = 6.108 - 1.858TG; r^2= 26.1%

Model Summary

Term	Coefficients	SE	t-value	p-value
(Constant)	6.108	0.621	9.842	0
Type of Graduation	-1.858	0.333	-5.574	0

Effect of the Number of Problems Encountered in using LMS and the Performance of Students

The students encountered problems while they were exposed to LMS. The number of problems experienced based on the pre-determined list was evaluated if they affect the performance of the students exposed to LMS. Based on the regression equations that follow, only the submission of requirements (SR) (coefficient= - 0.452) and quality of outputs (QO) (coefficient= -0.746) are negatively affected by the problems encountered by the students while using the LMS. Meanwhile these problems do not negatively affect FG. This may be due to the other criteria included in the computation of final grades. Also, it is important to note that FG is affected by the number of problems met by 26% only. The remaining 74% are attributed by other factors. Likewise, changes in SR is attributed by the problems encountered by 28.8% only and 20.2% for QO. Both results mean that there are still other factors that affected change in the performance of the students exposed to LMS.

The aforementioned findings suggest that if possible eliminate, if not reduce, problems encountered by students in using LMS so that the quality of their outputs will improve and submitted in shorter period of time.

Final Grades=0.841 + 0.313P; r^2= 26%
Submission of Requirements = 4.10 - 0.452P; r^2= 28.8%
Quality of Outputs = 6.685 - 0.746P; r^2= 20.2%

4. Conclusion

Using Learning Management system as a teaching delivery tool can either give positive and negative impact on the performance of the students exposed to LMS. Most of the students are less experience regarding computer and online technology because they are coming from the rural areas who are classified to belong to the group under the “digital divide” where there is less access to technology.

Therefore, the use of LMS in the classroom has to be properly organized and can be differentiated based on the type of students. Diversity of students in terms of school where they graduated, type of graduation, study habits and computer and online technology experience are necessary to be considered.

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