Research article

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Functionality and Usability of the PCU Learning Management System for Online Learning: An Evaluation

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ABSTRACT

A learning management system (LMS) is a highly adaptable "online education hub" that provides a large and indispensable set of features to efficiently support teaching and learning activities for schools. It can be used to support traditional face-toface instruction, as well as blended/hybrid and distance learning environments. According to studies, the functionality and usability of LMS are important aspects of web design to ensure quality education for students. This study is descriptive since the data gathered aims to know the extent of functionality and usability of the Bluebook, the Learning Management System used by Philippine Christian University. A total of 53 teachers responded, 29 from Manila and 24 from Dasmariñas. The findings of the study revealed the following: Course Navigation, 3.48, satisfactory; Course work, 3.33, satisfactory; Communication tools, 3.21satisfactory and Gradebook, 3.22 satisfactory. An overall weighted mean of 3.31 showed that the overall performance in terms of functionality and usability of PCU-LMS is satisfactory. As much as we wanted to give the best to our students, we aim for excellence. Since the main aim of this paper is to help teachers and institutions to continue providing care for students by providing them with the best education possible. The researcher recommended the retooling, retraining, and upskilling of all the faculty members with regard to the utilization of the Learning Management System with an emphasis on harmonizing the grading system in the LMS with the grading system used in Philippine Christian University.

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Introduction

COVID-19 has had a huge impact on our educational system in the Philippines. After all, our dear President Duterte proclaimed an immediate Enhanced Community Quarantine in Central Luzon on March 17, 2020, which is extended up to April 30, 2020, which has been a deluge to our students because it needed to temporarily suspend all classes at all levels. CHED.gov.ph [1].

Chairman Prospero De Vera issued an advisory to all Colleges and Universities that there is a need to "Deploy available distance learning, e-learning, and other alternative modes of delivery in place of residential learning if they have the resources to do so" so that the operations will still be continued [1]. In the new normal modality of the education system, many Higher Education Institutions used Learning Management Systems (LMS) to support their online teaching and learning process.

A learning management system (LMS) is a highly adaptable "online education hub" that provides a large and indispensable set of features to efficiently support teaching and learning activities for schools, businesses, and entrepreneurs [2]. LMS provides a variety of functions and communication tools that are agreed to support teaching and learning such as assignments, announcements, quizzes, discussion forums, chat, resources, and others [3]. It can be used to support traditional face-to-face instruction, as well as blended/hybrid and distance learning

environments. The LMS helps schools maintain the integrity of their educational programs by enabling educators to effectively and efficiently develop courses, deliver instruction, facilitate communication, foster collaboration between students, assess student success, and provide other learning resources for support [4]. This study indicated that the teachers agreed that the e-learning software makes it easy to access and use to deliver course content materials, track the performance, and grade the members of faculty appropriately. Both the faculty members of staff and the teachers agreed that the most helpful areas of the e-learning software include ease of access of access of teaching and learning materials, easy file management approaches, real time access to learning materials, and immediate feedback on the on-line quizzes. On the other hand, the study to evaluate the responses on the barriers to the adoption and use of the software for course materials showed that most of those teachers, and According to studies, the usability of LMS is an important aspect of web design to ensure quality education for students.

There was a similar unpublished study conducted by the education students of the Philippine Christian University on the Usability of its Learning Management System. The proponents used a quantitative-descriptive research design and the respondents of this study were 31 students. The study also employs the Five Usability Attributes by Jakob Nielsen. Frequency, percentage, and weighted mean were the statistical treatment used in this research. The overall findings of the study revealed that the PCU Bluebook NEO LMS is usable for online learning but is not yet on the highest level of usability. Among all the five usability attributes,

satisfaction had the highest mean rating, while learnability had the lowest mean rating. Other problems encountered by the students included the difficulty of the user's interface, grading system, uploading of files and chat and messages. Since learnability had the lowest mean rating, the proponents suggested an Enhancement Program Webinar on how to use the PCU Bluebook for online learning and proposed recommendations for the IT Department to improve the system.

There are two users of the LMS in the teaching and learning process, teachers and learners. This focused on the evaluation made by the teachers, not only on the usability but also on the functionality of the Bluebook. This study aimed to evaluate the functionality and usability of the Learning Management System, the Bluebook utilized by Philippine Christian University, and how it helped in the delivery of instructions This includes the performance evaluation of the LMS and the personal assessment of the teacher respondents. The data will help the teachers and institutions to continue providing care for the students by providing them with the best education possible. This aims to answer the following:

1. What is the extent of functionality and ease of use of course navigation of the Learning Management System utilized by Philippine Christian University in terms of:
a. Logging in/out
b. Locating LMS Features
c. Enrolling and un-enrolling students
d. Identifying the Access code
e. Configuration of each subject

2. What is the extent of ease of use and creating course work in the Learning Management System utilized by Philippine Christian University in terms of:
a. Test or quizzes
b. Assignments and Activities
c. Lectures/Discussions
d. Uploading the syllabi

3. What is the extent of Communication Tool Access in the Learning Management System utilized by Philippine Christian University?

4. What is the quality of the Gradebook features in the Learning Management System utilized by Philippine Christian University in terms of
a. Ease of access
b. Appearance/organization
c. Functionality?

5. What is the performance of PCU-LMS in terms of:
a. Course Navigation
b. Course Work
c. Communication tools
d. Gradebook?

Literature Review
Learning Management System
The usage of learning management systems has grown almost universal and is now considered to be a necessary component of the contemporary college experience. These systems apply to both traditional and remote learning, residential and commuter campuses, undergraduate and graduate programs. The incorporation of e-learning technology into course offerings has brought about a substantial transformation of traditional classroom techniques of course delivery.

According to Sabharwal et al. and Turnbull, Chugh, and Luck, learning management systems (LMSs) are online learning technologies used for the production, administration, and delivery of course materials. LMSs are necessary to improve and facilitate teaching and learning in the increasingly digitalized world we live in today. As stated by Kattoua, Al-Lozi, and Alrowwad, Learning Management Systems (LMSs) facilitate the provision of guidelines and digital materials to enhance and supplement student education in a cooperative setting while also freeing up teachers to concentrate on creating engaging instructional design.

The most essential tool for e-learning professionals, according to Pappas, is the learning management system. The biggest percentage of revenue contribution is anticipated to be created in North America, where the annual compound growth rate of LMS over the last five years is 25.2%. Stated differently, the LMS business sector is expected to be valued at over $4 billion in 2015 and over $7 billion in 2018. This indicates that the requirements for LMSs will significantly change in the future.

Functionality and Usability of NEO-LMS (Bluebook)
NEO assists educational institutions in overseeing every aspect of the classroom, including developing and distributing instructional materials, evaluating pupils, monitoring their progress, and encouraging interaction and cooperation between instructors and students.

With twelve different types of assignments, a fully functional Gradebook, content authoring, attractive lesson plans, gamification, automation, learning pathways, drip content, adaptive learning, mastery and competencies (including Next Generation Science Standards and US Common Core Standards), question banks, class templates, rubrics, collaboration tools, resources catalog, a customizable portal, visual portal editor, dragand-drop dashboard widgets, activity display, and more, NEO offers the full range of functionality you'd expect in a modern learning management system.

The International Organization for Standardization defines usability as the capacity of a tool or system to enable users to complete a task efficiently and satisfactorily (ISO 9241-11, 1998). According to Thuseethan et al, the human perceptual and cognitive capacities limit the use of Learning Management Systems from the user's point of view. Users of learning management systems will find the systems easier to use and more satisfying the better human-computer interaction they receive from them. Both academic achievement and the learning process for students can be enhanced by usability. Consequently, a reasonable design that balances usability with human-computer interaction.

Materials and Methods
This study is descriptive since the data gathered aims to know the extent of functionality and usability of the Learning Management System used by Philippine Christian University. A survey questionnaire was used to evaluate its functionality and ease of use and access in terms of Course Navigation, Course Work, Communicating Tools, and Gradebook. The variables chosen as part of the evaluation are the features found in the PCU- Learning Management System. The teachers' answers are graded as 4-Excellent, 3- Satisfactory, 3-Need Improvement, and 1- not tested. The respondents of the study are full-time teachers on both the Manila and Dasmariñas campuses. A total of 53 teachers responded, 29 from Manila and 24 from Dasmariñas.
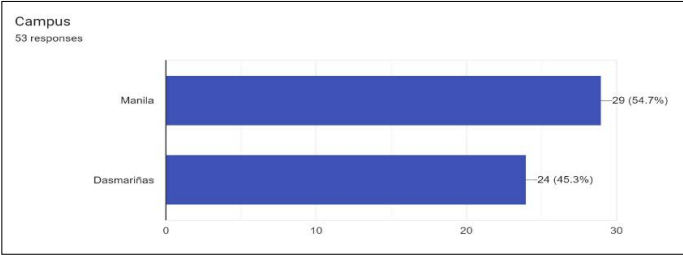
Results and Discussion

Figure 1: Percentage of Faculty Respondents

It could be seen that 29 teachers from PCU-Manila participated in the survey and 24 teachers from PCU-Dasmariñas answered the evaluation of the Usability of the Learning Management System utilized by Philippine Christian University.

Table 1: Course Navigation Functionality of PCU-LMS

LMS- Features	Weighted Mean	Verbal Interpretation
Logging in/out	3.62	Excellent
Locating Bluebook features	3.47	Satisfactory
Enrolling and un-enrolling students	3.51	Excellent
Identifying the Access code	3.66	Excellent
Configuration of each subject	3.49	Satisfactory
Composite Mean	3.55	Excellent

Table 1 shows the evaluation made by the teachers on the functionality of the Course Navigation using the Learning Management of Philippine Christian University. It was rated Excellent in the following areas, Logging in/out with a weighted mean of 3.62, Enrolling and un-enrolling students, 3.51, and also excellent in identifying the access code with a weighted mean of 3.66. In features like locating Bluebook features, 3.47 and Configuration of each subject, 3.49 rated both satisfactory. It could be noted from the table that functionality in terms of Course Navigation is Excellent with an overall weighted mean of 3.55. Functionality is the quality of being suited to serve a purpose well. Course navigation refers to the act of opening and moving through the LMS menus, such as the variables given in the table. Course Navigation is an important component of an LMS because it serves as a framework and guides how the information will be presented to the learner [5].

Table 2: Course Navigation Usability of PCU-LMS

LMS- Features	Weighted Mean	Verbal Interpretation
Logging in/out	3.08	Satisfactory
Locating Bluebook features	3.45	Satisfactory
Enrolling and un-enrolling students	3.51	Excellent
Identifying the Access code	3.57	Excellent
Configuration of each subject	3.43	Satisfactory
Composite Mean	3.41	Satisfactory

The usability of the course navigation is a measure of ease of use, and the usefulness of its features. It could be gleaned from Table 2, the evaluation of the usability of the course navigation of PCU-LMS, the following features got satisfactory marks: Logging in/out, 3.08, Locating Bluebook features, 3.45 and Configuration of each subject, 3.43. For Enrolling and Un-enrolling students, 3.51 and Identifying the access code, 3. 57 are both Excellent. In general, the overall usability in terms of course navigation is satisfactory with a weighted mean of 3.41.

Table 3: Usability of Course Work

LMS- Features	Weighted Mean	Verbal Interpretation
Test or quizzes	3.24	Satisfactory
Assignments and Activities	3.26	Satisfactory
Lectures/Discussions	3.30	Satisfactory
Uploading the syllabi	3.55	Excellent
Composite Mean	3.33	Satisfactory

Coursework in the PCU-LMS includes a variety of assessments, Lectures, Discussions, and even uploading the syllabi are the features that need to be evaluated as to their usability. Table 3 shows the usability of creating coursework in PCU-LMS. For tests or quizzes, 3.24 satisfactory; assignments and activities, 3.26, satisfactory; lectures and discussions 3.30, satisfactory and excellent in uploading the syllabi with a weighted mean of 3.55.

Table 4: Usability of Communication Tools

LMS- Features	Weighted Mean	Verbal Interpretation
Announcement	2.87	Satisfactory
Calendar	3.30	Satisfactory
Messaging	3.26	Satisfactory
Notification	3.47	Satisfactory
Groups	3.13	Satisfactory
Composite Mean	3.21	Satisfactory

Table 4 shows the usability of the communication tools of PCU-LMS. For the announcement, it was satisfactory with a weighted mean of 2.87; Calendar, 3.30, satisfactory; Messaging, 3.26, satisfactory; Notification, 3.47, satisfactory and Groups with a weighted mean of 3.13, satisfactory. With an overall weighted mean of 3.21, the usability of the communication tools features in PCU-LMS was Satisfactory. One of the benefits of a Learning management system is that it provides a number of communication tools. Schools can set up a variety of access points and groups to communicate learning via the Learning Management System [6].

Table 5: Gradebook Quality

LMS- Features	Weighted Mean	Verbal Interpretation
Ease of access	3.28	Satisfactory
Appearance/ organization	3.30	Satisfactory
Functionality	3.08	Satisfactory
Composite Mean	3.22	Satisfactory

Table 5 presents the evaluation of teachers in the quality of Gradebook as LMS features in terms of Ease of access, appearance, and functionality all these got a satisfactory marks, with the weighted mean of, 3.28, 3.30, and 3.08 respectively. The overall Gradebook quality of the PCU-LMS was satisfactory with a weighted mean of 3.22.

Table 6: Summary of the Functionality and Usability of PCU-LMS

LMS- Features	Weighted Mean	Verbal Interpretation
Course Navigation	3.48	Satisfactory
Course Work	3.33	Satisfactory
Communication Tools	3.21	Satisfactory
Gradebook	3.22	Satisfactory
Overall Performance	3.31	Satisfactory

Table 6 shows the functionality and usability of pcu-lms. For course navigation, 3.48, satisfactory; Course work, 3.33, satisfactory; Communication tools, 3.21satisfactory and Gradebook, 3.22 satisfactory. With an overall weighted mean of 3.31, the overall performance in terms of functionality and usability of PCU-LMS is satisfactory.

Conclusion and Recommendations
The results of this study concluded that teachers of Philippine Christian University on both Manila and Dasmariñas campuses evaluated the functionality and usability of its Learning Management System as satisfactory. As much as we wanted to give the best to our students, we aim for excellence. Since the main aim of this paper is to help teachers and institutions to continue providing care for students by providing them with the best education possible. The researcher recommended the retooling, retraining, and upskilling of all the faculty members with regard to the utilization of the Learning Management System with an emphasis on harmonizing the grading system in the LMS with the grading system used in Philippine Christian University [7].

A Series of seminars and training will be conducted for excellent functionality and usability of the PCU-LMS. It is noted that the functionality and usability of the Learning Management System are important aspects of web design to ensure quality education for students in an online learning environment.

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