Learning Management System for Eastern Visayas State University College of Arts and Sciences

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Abstract

A learning management system (LMS) manages educational, training, and development programs in different learning institutions. With the world recently experiencing the Covid-19 pandemic, it is important that this kind of system be in place to continue the teaching-learning process in academes when catastrophes strike. The study developed a kind of Learning Management System for the College of Arts and Sciences of Eastern Visayas State University It investigated how important for the faculty, staff, and students to institutionalize it. The study employed the System Development Life Cycle (SDLC) model through prototyping, system flowcharts, block diagrams, and the fitted database schema from identified supportive software that examined the relational database management system. Descriptive statistical data analysis was used using frequency and percentages. Findings showed that a Learning Management System needs to be developed in the College of Arts and Sciences facilitating the teachers' core functions; a) online registration designation; b) computerized deadline messages of class evaluation, notifications, and grading system; c) provide needed information of less expense for users which evolves work processes. In conclusion, the Learning Management System needs to be institutionalized in the College of Arts and Sciences to grow along technological work procedures that benefit, train, maximize, and implement the use of online software giving an advantage as regards interconnecting both learners and experts into one classroom management. Finally, the College of Arts and Sciences needed to institutionalize a Learning Management System to benefit, train, maximize, and implement online software that connects both learners and experts into one classroom management.

Keywords: Learning Management System (LMS), System Development Life Cycle (SDLC), System flowcharts, Block diagrams, Technology during Calamities

Introduction

Today's generation of students is developing in a technological world. Technology plays a big role for students to deal with their studies as well as the teachers for their teaching profession. With the use of technology, it is now easy for teachers to disseminate their learning materials and the students can access their learning materials easily. Through technology, education has developed to a great level and has now become a need for transforming education for the better. A Learning Management System (LMS) is a software application or Web-based technology used to plan, implement, and assess a specific learning process. Typically, a learning management system provides an instructor with a way to create and deliver content, monitor student participation, and assess student performance (Rouse, 2013). Many people thought that bringing computers into the classroom would remove that human element that some learners need, but as time progressed, technology has developed and now people utilize the use of smartphones and tablets in the classroom and office, as well as a wealth of interactive designs that makes distance learning not only engaging for the users but valuable as a lesson delivery medium (Virtual-college, 2012).

The main purpose of the Learning Management System in Education is to provide the prospects and trends of integrating information and communication technology (ICT) into general educational activities. There are some unavoidable facts in modern education; First, ICT has been developing very rapidly nowadays. Therefore, to balance it, the whole educational system should be reformed, and ICT should be integrated into educational activities through the Learning Management System. Second, the influence of ICT, especially the internet (open source tool) cannot be ignored in our student's lives. So, the learning activities should be reoriented and reformulated, from manual source-centered to the open source ones. In this case, the widespread use of Internet access has been an unavoidable policy that should be anticipated by schools' authorities. During the Covid-19 pandemic, the education sector was greatly affected. Practically all schools resorted to remote learning using technology. This system for the college of arts and sciences of the Eastern Visayas State University can be a helpful tool in the event of another disruption or catastrophe. The design of this system is easy, user-friendly, and cheap so those who have lesser income can still avail of the services of this instrument. Calamities, whether man-made or natural will continue to threaten man's existence in this world. In fact, typhoons continue to visit
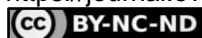
the Philippines numerous times annually, and earthquakes are recorded from time to time across the archipelago. Volcanic eruptions are likely to happen in the country, and many other threats will continue to suffice including acts of terror. These occurrences will always be a possibility, and classroom instructions will always be the primary receiving end of these realities. However, the creation of learning management systems such as this can mitigate the paralysis to the education system that these destructive forces can bring about.

University students are mostly independent in their learning as instructors/professors usually give out lecture notes which they spend a lot on buying the study materials. Further information is left to the students to discover on their own, as it is not a one-way learning process practiced in the primary and secondary school system as the current teaching method which students find boring and less interactive. The learning process at the university level is a two-way process, lecturers share their knowledge and students give their opinions or thoughts in return for a topic in a class discussion (Jim Eison, 2010). Therefore, students need to constantly broaden their knowledge by searching for information because there is a time limitation for the student to communicate with the teacher. Lecture notes, whiteboards, presentation slides, and liquid crystal display (LCD) projectors are some of the more commonly used tools used by teachers when delivering lectures. A student who is unable to attend a class for any reason experiences some difficulty coping with the lecture in subsequent classes. By the same token, a teacher who is unable to attend his or her class for any of a variety of official or personal reasons must carefully plan how the material that was missed could be delivered following the pacing dictated by the syllabus and the semestral schedule.

In this system, the researcher believed that it will help the students in obtaining course-related information and working creatively with others Learning management systems (LMS) such as Moodle, A Tutor, and the like are used by many educational institutions. The concept behind LMS is that teachers can hold online courses by way of posting lecture notes and slides, quizzes, and announcements, and providing a facility for electronic submissions, and course-related activities. Moreover, the researcher believed that Information Technology is necessary since it involves computer work and computers enable people to work creatively and lessen the burden and uneasiness of the students as well as the

employees. Information and Communications Technology plays a vital role in the development of manpower and shaping the new and modern citizens to become assets in our community that is why the Leyte Institute of Technology Tacloban City, Leyte became a university after ninety-seven years of its quest for quality education, converting Leyte Institute of Technology (LIT) into Eastern Visayas State University (EVSU) in 2005.

This paper intends to develop a Learning Management System for the College of Arts and Sciences of the Eastern Visayas State University. This work will eventually assist both the faculty members and students in the teaching-learning process with a touch of modernity. It will try to address the following objectives: a). develop a Learning Management System that contains a user account management module where only the administrator has the authorized access to perform activities such; as user role/level restriction and managing the system; b). enable professors to have an account module that authorizes them to approve the registration of students per subject, the creation of subject code and description also includes the capability of creating evaluation exercises/assessments for their students. The grade sheet module is only available for the professors' part; c). allow students to have an account module that enables them to register for the subjects that they are enrolled in the semester, they could also take the assessment online (quizzes, assignments, seatwork and they could download instructional materials from the subjects that the students are enrolled); and d). develop a system that has messaging and notifications that can send reminders and notifications to teachers and students on upcoming training events or deadlines.

Methodology

There were two types of research methods implemented in this study; qualitative and quantitative research. The quantitative research investigates some identified problems, that are based on a testing theory and can be measured with numerical figures and analyzed using statistical tools. The objective of the quantitative research method is to determine the accuracy of predictive generalizations of a certain theory. On the other hand, a qualitative method is a study based on a qualitative process of review that will understand a social or human program from multiple perceptions. Qualitative research is steeped in a natural setting and includes a process of creating a complex. Hence, Quantitative approach, selected faculty members, and students were asked to answer some survey questionnaires, the results will be analyzed and then presented to give
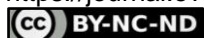
justifications for the findings during the data-gathering procedure. Qualitatively, the researcher's approach is through the conduct of data gathering through informal interviews with the respondents of the study.
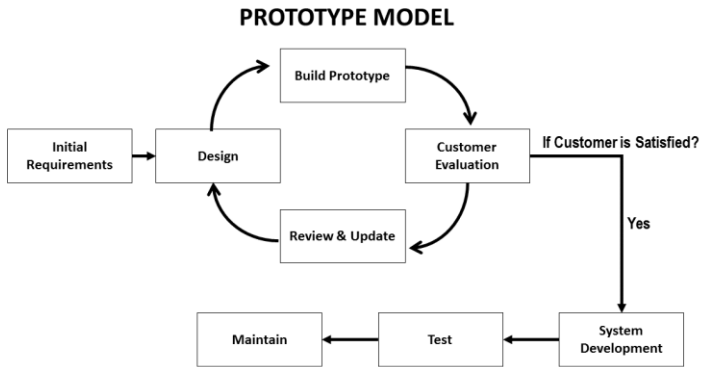
Data Gathering Procedure

Figure 1: Prototype Model

The Prototyping Model is a system development method in which a prototype(an early approximation of a final system or product) is built, tested, and then reworked as necessary until an acceptable prototype is finally achieved from which the complete system or product can now be developed. This model works best in scenarios that have no existing workflow and where not all the project requirements are known in detail ahead of time. It is a combination of an iterative and trial-and-error process that takes place between the developers and the users.

- Initial Requirements. This step involves understanding the basic product requirements, especially in terms of user interface. The more intricate details of the internal design and external aspects like performance and security can be ignored at this stage. The researcher started looking at the initial requirements for the system by conducting an informal interview with the faculty and students of the college. Afterward, the researcher checked the availability of the hardware and application software. These include a server, a web host, and an internet connection. This stage describes what available features will be integrated into the College of Arts and Sciences Learning Management System. The researcher

documented the possible requirements of the system to be developed is captured in this phase.

- Design. Based on the user requirements and the detailed analysis the new system must be designed. This is the most crucial phase in the development of a system. The logical system design arrived because of system analysis and was converted into a physical system design. In the design phase, the development process continues to move from the what questions of the analysis phase to the how. The logical design produced during the analysis turned into a physical design - a detailed description of what is needed to solve the original problem. Input, output, databases, forms, codification schemes, and processing specifications are drawn up in detail. In the design stage, the programming language and the hardware and software platform in which the new system will run are also decided. In this phase, the researcher designed the system flowchart, database, and graphical user interface (GUI) of the system.

- Build Prototype. The initial Prototype was developed in this stage, where the very basic requirements were showcased, and user interfaces were provided. These features may not exactly work in the same manner internally in the actual software developed. The workarounds are used to give the same look and feel to the customer in the prototype developed. The researcher will implement the design to make it a workable prototype. This will start with the coding of the design into computer language, i.e. Php (Hypertext Preprocessor) for the front-end while SQL for the database for the back-end of the prototype.

- Customer Evaluation. The prototype that will be developed will be presented to the customer and the other important stakeholders in the project. The feedback is collected in an organized manner and used for further enhancements in the product under development. The researcher will get feedback and reviews from the following are the general features of the system that will be explored and built;
  - ➢ Site Management. The site will be managed by an administrator user and will be defined during the setup using defaults or modifications of such. Customization can be made using plug-in "themes" on size colors, fonts, and layout; using plug-in activity modules; using plug-in language packs.

➢ Overview of user management. User management enables the administrator to provide minimum involvement while ensuring high security. The system should support a range of user authentication mechanisms through plug-in authentication modules, allowing easy integration with existing systems such as standard electronic mail (e-mail), account log-ins profile creation and editing tools, and time zone adjustment.

➢ Enrollment. This will provide the mechanism to enroll students in a course. Enrollment can be by invitation or by student self-enrollment. User authentication is required before access to the materials is granted. An "enrollment key" in a course allows only certain students to enter. These keys can be given out face-to-face or via email and can be changed. Teachers with permission can manually enroll students or unenroll students in their courses. Each account can have access to different courses, and the course's resources and activities.

➢ Roles. Roles combine specific permission for specific types of participants. A user can be assigned a different role for each context, such as a specific course. The administrator (admin) user account controls the creation of courses and creates teachers by assigning users to courses and giving them a role in that context. New rules can be created, applied, and edited. Standard roles for this system include teacher, student, and guest.

➢ Overview of course management. Typically, a teacher will have full control of the overall settings for a course. This can include management of forum posts, teacher feedback on student postings, chatroom, and submissions of course requirements

➢ Grade sheet. This includes the grades for various activities contained in the course.

➢ Assignment Module. The assignment can be specified with a due date and a maximum grade. Students can upload their assignments (PowerPoint, document,

> excel, image, and pdf format) to the server and are date-stamped. The teacher can provide feedback, notification, and updated monitoring of student assignments.
> ➢ Chat Module. The Chat Module allows smooth, synchronous text interaction and is limited to students in their respective course subjects enrolled.
> ➢ Forum Module. The forum module contains forum posts and a discussion board. Group features allow options for more entry and viewing limitations for students. The teacher can monitor the members of the groups and can moderate the discussion.
> ➢ Quiz Module. The quiz module contains many types of standard question formats and scoring methods. Quizzes are automatically graded when a student accomplishes the task. Questions will be stored in categories that a part of a robust question bank for easy access.
> ➢ Resource Module. Resources can display many types of media content files by a single link on the course page, such as Word, PowerPoint presentations, video and audio formats, web pages, and files. Files can be uploaded and managed in the course. Folders can be created and managed in the course and students link to a folder via a resource link.

- Review and Update. The feedback and the review comments are discussed during this stage and some negotiations happen with the customer based on factors like – time and budget constraints and the technical feasibility of the actual implementation. The researcher has applied the changes based on the feedback from the respondents so that it will be applied and incorporated in the new Prototype developed and the cycle repeats until the customer expectations are met.

- System Development. After the review with the respondents, the researcher will continue with the development of the College of Arts and Sciences Learning Management System.

- Testing. Several tests will be conducted by using different functions of the Learning Management System such as; uploading PowerPoint presentations, online submission of assignments, online assessments, forum discussions, and conversation through chat and online announcements. If the testing is successful, it will

be introduced to faculty members of the College of Arts and Sciences. Initial testing and the training of potential users will be selected. This will be the first attempt to propagate the learning being acquired during the first set and a series of schedules will be provided for training and actual hands-on practice.

- Maintenance. There will be some issues that will come up in the client environment. To fix these issues, patches will be released. The purpose of the researcher is to enhance the product functionality by releasing a better version of the software Maintenance is done to deliver these changes in the customer environment to ensure the smooth performance of the system.

Block Diagram
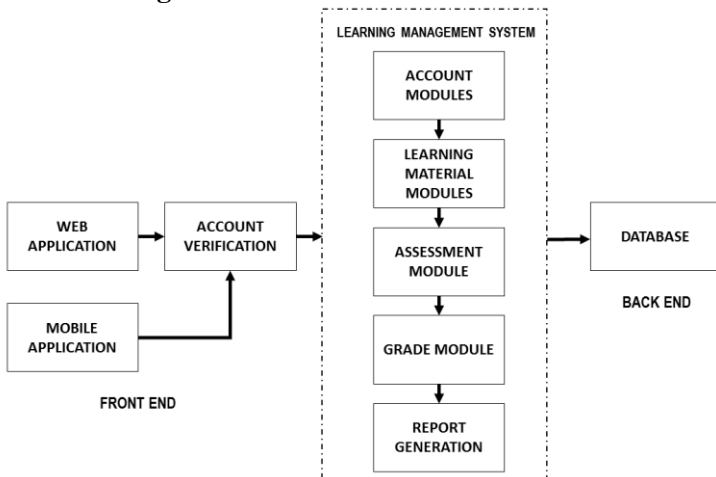
Figure 2: Block Diagram

Figure 2 shows the schematic flow structure of the Learning Management System. The system is accessible via mobile application or over the website. The user can access the system by creating an account through the front end of the system (mobile app or website). Then based on the accessibility level of the user, some of the functions will be enabled (for instructors the learning management system module, grades module, and assessment module) and the system will generate reports based on the system database depending on the access level of the user.

Results and Discussion

Requirements Analysis and Specification

The researcher defined the minimum system requirements and software specifications that supported in building of the proposed Learning Management System for the College of Arts and Sciences of this institution. The following are the hardware and software requirements:

1. Computer for server/backend with the following specs:
   - Central Processing Unit: AMD A8-7600 (3.1 GHz)
   - Random Access Memory: 8 Gigabytes
   - Operating System: Windows Server 2008 R2
   - Database (back-end): MySQL
2. Client: Desktop computers, laptops, and smartphones using the Android Operating system.
3. Connectivity: intranet for access within the college premises, and internet using WiFi (Wireless Fidelity), mobile data outside of Eastern Visayas State University.
4. Web server for the online connectivity of the learning management system.

Cost-Benefit Analysis

Determines whether the required software can generate financial gains for the College of Arts and Sciences. It considers the expenses made on purchases and activities required to proceed with the development of the College of Arts and Sciences Learning Management System.

Table 1
Estimated Cost of Current System

Items	Assumption cost
Chalk	500.00
Bond Paper (Long)	2,000.00
Bond Paper (Short)	1,000.00
Ink Printer	2,000.00
White-Board Marker	1,000.00
Sign-Pen	100.00
Total Cost	**7,100.00**
Additional	
Laptop	25,000.00

Printer	7,500.00
LCD Projector	18,000.00
Internet Connection	2,500.00
Electricity	20,000.00

Table 2
Estimated Cost of Proposed System

Items	Assumption cost
Web-Server	2,000.00
Bond Paper (Long)	1,000.00
Bond Paper (Short)	500.00
Total Cost	**3,500.00**
Additional	
Internet Connection	2,500.00
Electricity	10,000.00

Estimated Difference (ED): Current Costing – Proposed Costing

$$\textbf{ED} = \text{Php } 7,100.00 - 3,500.00$$

$$\textbf{ED} = \text{Php } 3,600.00$$

Estimated Investment (EI) is the Total Proposed Costing

$$\textbf{EI} = \text{Php } 25,000.00$$

Gains (G): ED x 12 Months

$$\textbf{G} = \text{Php } 3,600.00 \text{ x } 12$$

$$\textbf{G} = \text{Php } 42,600.00$$

Return of Investment (ROI)

$$\text{ROI} = \frac{\text{Gains} - \text{Investment Cost}}{\text{Investment Cost}}$$

$$\text{ROI} = \frac{43,200 - 25,000}{25,000}$$

ROI = .73

ROI = 73%

This shows the total expenses for the current and proposed system. The current estimation shows that the faculty who utilize the chalk-and-talk teaching method has a higher expense than the proposed system. Also, the current estimation of the usage of bond papers in terms of printing resource materials and grades has the outcome of bigger expenses while the documents can be misplaced and harder to find in times when the document is needed. In the proposed system, the resource materials, tests, assignments, and quizzes can be uploaded online which lessens the paper consumption.

Therefore, the proposed system estimation is much more economical than the current system estimation where the client can gain approximately 73% of its estimated investment in a year and lessen the expenditure of the college.

Benefits

Implementation of the proposed CAS Learning Management System for the College of Arts and Sciences is very beneficial. There would be a one-time investment for a server computer, an existing computer/laptop in the academic building would lessen the expenses for the equipment needed. Since there is no system existing in the College of Arts and Sciences, it consumes a lot of paper for the printing of learning materials, and checking of attendance of the students. Having the Learning Management System, will minimize the cost of using office supplies.

For the expenses for the personnel, additional hiring of employees for operating the system won't be necessary. The Learning Management System is user-friendly, so it won't need any special computer skills to operate the system. It is very beneficial to the faculty and students; it can lessen the workload of the faculty so that they can perform the other four-fold functions example research, extension, and income-generating projects.

Interpretation of Data

The data gathered from the respondents through the self-administered survey questionnaires shall be discussed. This chapter discussed the result of the prototype survey questionnaire responded to by

eighty participants. The primary objective of this study is to create a Learning Management System for the College of Arts and Sciences so that it could aid instructors in managing their learning resources and lessening their workloads.

The survey questionnaire on the prototype question consists of two parts: the respondent's profile and their experiences when using the Learning Management System. It has also a part in which the respondents were given the chance to express their ideas using their own words.

Survey Questionnaire on System Evaluation

This questionnaire consists of two (2) parts; part one is the respondent's profile and the second part is the system evaluation proper, evaluation of the performance of the system. Through this questionnaire, the researcher was able to know the acceptability and capability of the system. The result of this survey proves the functionality of the system.

Part I. Respondent's Profile.

The respondents of the study were 30 faculty members and 50 students of the College of Arts and Sciences at Eastern Visayas State University Tacloban City. To get the profile of the faculty such as gender, educational attainment, academic rank, and department frequency count and percentage were utilized.

Table 3
Distribution of Faculty Members by Profile Variable

Profile Variable Faculty	Frequency	Percentage
Gender		
Male	10	33.3
Female	20	66.7
Total	30	100.0
Educational Attainment		
Doctorate Degree Holder	11	36.7
Doctorate with Units Earned	4	13.3
Master's Degree Holder	8	26.7
Master's with Units Earned	5	16.7
Bachelor's Degree	2	6.7
Total	30	100.0
Academic Rank		
Professor	3	10.0
Associate Professor	8	26.6

Assistant Professor	12	40.0
Instructor	7	23.3
Total	**30**	**100.0**

Gender

Table 3 indicates that of the thirty faculty respondents, 20 or 66.7 percent are female and only 10 or 33.3 percent are male. This implies that the teaching force of the College of Arts and Sciences is mostly females.

Educational Attainment

Table 3 shows that the faculty respondents were able to complete their doctorate (at 11 or 36.7 percent), 8 or 26.7 percent were already graduates with their master's degree, and 2 or 6.7 percent were bachelor's degree holders. This reveals that the majority of the faculty are making efforts to pursue further education so that their educational qualifications are aligned with the jobs they are currently engaging in.

Academic Rank

Table 3 shows that the faculty respondents from the College of Arts and Sciences are composed of three (3) professors, eight (8) associate professors, twelve (12) assistant professors, and seven (7) instructors when it comes to academic rank. Implying that the faculty respondents of the College of Arts and Sciences are still young when it comes to tenure and academic ranking.

Table 4
Distribution of Students by Profile Variable

Profile Variable Students	Frequency	Percentage
Gender		
Male	21	42.0
Female	29	58.0
Total	50	100.0
Course		
Bachelor of Arts in English Language	6	12.0
Bachelor of Arts in Filipino Language	8	16.0
Bachelor of Science in Chemistry	5	10.0
Bachelor of Science in Economics	5	10.0
Bachelor of Science in Environmental	5	10.0

Science		
Bachelor of Science in Mathematics	12	24.0
Bachelor of Science in Statistics	9	18.0
Total	50	100.0

Table 5
Design of the System

ITEMS	Mean	Qualitative Description
Fonts used in the system are readable	4.33	Agree
The colors used are appropriate	4.23	Agree
It is easy to navigate around the system	4.44	Agree
The layouts are arranged well	4.30	Agree
The system is compatible with different web browsers	4.21	Agree
The objects on the web page are aligned	4.26	Agree
The system is user-friendly	4.21	Agree
Overall	4.29	Agree

The data in Table 5 shows the overall mean of the design of the system with their interpretation. As a result, the statement "Fonts used in the system are readable" got the highest mean of 4.33, interpreted as agree. Meanwhile, the statement "The system is compatible with different browsers" and the statement "The system is user friendly" interpreted as agree got the lowest mean of 4.21. The overall mean of the design of the system is 4.29, interpreted as Agree. This suggests that while users generally find the system agreeable in terms of design, there may be room for improvement in browser compatibility and user-friendliness to further enhance overall satisfaction.

Table 6
Accuracy of the System

ITEMS	Mean	Qualitative

		Description
The system runs accurately according to its function	4.46	Agree
The system shows exact information to the user	4.21	Agree
The system updates and monitors the records correctly	4.40	Agree
The system provides real-time updates.	4.43	Agree
The system generates correct reports	4.36	Agree
Overall	4.37	Agree

About the accuracy of the system, the highest mean obtained was 4.46 from the statement "The system runs accurately accordingly to its function", interpreted as agree. It can also be gleaned from the table that the statement "The system shows exact information to the user" got the lowest mean of 4.21 interpreted as agree. The overall mean of the accuracy of the system is 4.37, interpreted as Agree. This implies that while users generally perceive the system to be accurate in its functionality, there may be aspects related to the presentation or delivery of information where improvements could be made to further enhance user satisfaction and confidence in the system's accuracy.

Table 7
Reliability of the System

ITEMS	Mean	Qualitative Description
The system is reliable and error-free	4.34	Agree
The system provides the correct data in report generation	4.39	Agree
No system hang-ups were encountered while in use	4.30	Agree
The data can still be recovered	4.44	Agree

after a power interruption		
Overall	4.37	Agree

As shown in Table 7 the statement "The data can still be recovered after power interruption" got the highest mean of 4.44 interpreted as agree. The lowest mean of 4.30 was obtained by the statement "No system hang-ups were encountered while in use" interpreted as agree. The overall mean of the reliability of the system is 4.37, interpreted as Agree. This suggests that while users generally perceive the system to be reliable in terms of data recovery after power interruptions, there may be occasional instances of system hang-ups during use that could be addressed to further enhance overall reliability and user satisfaction.

Table 8
Speed of the System

ITEMS	Mean	Qualitative Description
The system loads quickly	4.11	Agree
Users can easily access the system	4.10	Agree
The data transfer from the system to the database is fast	4.01	Agree
The system can provide report generation quickly	3.94	Agree
Overall	4.04	Agree

Based on the data provided in Table 8, it can be inferred that users generally perceive the system to be efficient in terms of speed, with an overall mean rating of 4.04, interpreted as agreement. Specifically, the statement "The system loads quickly" received the highest mean rating of 4.11, indicating a strong agreement among users regarding the system's loading speed.

Table 9
Efficiency of the System

ITEMS	Mean	Qualitative Description
The system helps lessen the	4.10	Efficient

workload of the faculty		
The system helps the students and faculty save time and resources	4.20	Efficient
The system helps check the assessment of the students	4.36	Efficient
The system integrates information communications & technology with the subject	4.16	Efficient
Overall	4.20	Efficient

As regards the efficiency of the system, the highest mean obtained was 4.36 from the statement "The system helps check the assessment of the students", interpreted as efficient. It can also be gleaned from the table that the statement "The system helps lessen the workload of the faculty" got the lowest mean of 4.10 interpreted as efficient. The overall mean of the efficiency of the system is 4.20, interpreted as Efficient. Despite this variation, the overall mean rating for the efficiency of the system remains high, indicating a consensus among users regarding its effectiveness in supporting student assessment. However, there may be opportunities for improvement in terms of reducing the workload of the faculty to further enhance overall efficiency and user satisfaction.

Table 10
Security of the System

ITEMS	Mean	Qualitative Description
The system can be accessed by authorized users only	4.33	Agree
The information is secured in the database	4.40	Agree
The system provides confidentiality to both faculty members and students' data	4.23	Agree
The system can record the user's activity	4.20	Agree

Overall	4.29	Agree

As shown in Table 10, the statement "The information is secured in the database" got the highest mean of 4.40 interpreted as agree. The lowest mean of 4.20 was obtained by the statement "The system can record user's activity" interpreted as agree. The overall mean of the reliability of the system is 4.37, interpreted as Agree. Then it can be inferred that the level of agreement towards the security of information in the database is higher than the agreement towards the system's ability to record user activity."

Table 11
Evaluation of the Tools

ITEMS	Mean	Qualitative Description
Learning Modules	4.33	Desirable
Syllabus	4.23	Desirable
Assignments	4.20	Desirable
Calendar	4.15	Desirable
Discussions	4.25	Desirable
Assessments	4.35	Desirable
Class Lists	4.30	Desirable
Gradebook	4.34	Desirable
Overall	4.25	Desirable

The data in Table 11 shows the overall mean of the evaluation of the tool with their interpretation. As a result, Table 3.11 reveals the highest mean of 4.35 interpreted as desirable for the "Assessments" Meanwhile, "Calendar" got the lowest mean of 4.15 interpreted as desirable. The overall mean of the evaluation of the tools is 4.25, interpreted as Desirable. his implies that the 'Assessments' tool is perceived more favorably than the 'Calendar' tool, contributing positively to the overall desirability of the evaluated tools.

Conclusion

The researcher's developed system successfully achieved its intended core functionalities, including granting access to perform activities such as approving or denying account registrations, implementing level restrictions, assigning areas of responsibility per department, and enabling faculty members to create classes and evaluation exercises for their students. Additionally, it might facilitate students' registration for the classes they have registered for the semester, as well as enable them to complete teacher-generated exams online. The system facilitated the dissemination of messages and notifications to both staff and students regarding future events and deadlines for class requirements. The system successfully reduced the faculty's burden. The computerized grading system developed was highly efficient and fully operational. The technology efficiently delivers precise and up-to-date information from the faculty, hence reducing costs associated with photocopying and printing materials for classroom usage. The system can produce reports that are necessary for classroom utilization.

Covid-19 disrupted many facets of human life like business, employment, tourism, education, and many others. It might have passed man's daily convictions, but lessons have been learned from it including remedies in the conduct of classes in the event of another catastrophe whether natural or man-made. It will not be the last pandemic that man will ever experience, there will be more. Whenever man's activities will be disturbed again, technology will be one of the solutions that these activities will continue. Classes will proceed despite these possible calamities, and an LMS like this one is a good gauge to put equilibrium to whatever dismantling scenario might occur.

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