**CHAPTER II**

**REVIEW OF RELATED LITERATURE**

This chapter presents the relevant literature and studies that the researchers considered in strengthening the importance of this study. The topics that this chapter presents are

**Definition of a Learning Management System**, here is where the word Learning

Management System or LMS will be defined as definition is the first step in understanding how it works and what it is used for.

**E-Learning and its prominence in modern era**, this topic tackles E-Learning as a whole and will be exploring its influence in the current age.

**Usage of LMS and its potential from perception**, this topic illustrates the current perception on Learning Management Systems and reveals how it affects its usage and people’s intention to use.

**School Implementation of a Learning Management System**, this topic reveals the information gathered from school implementations of a Learning Management System. This topic is subdivided into two subtopics, namely **Challenges in Implementation** and **Benefits in Implementation**

**Definition of a Learning Management System**

The definition of a Learning Management System (LMS) has varied from time to time, and Altınpulluk, H., & Kesım, M. (2021) states that has changed in parallel to the developments of Information and Communication Technology (ICT). [Nguyen, N (2021)](https://www.sciencedirect.com/science/article/pii/S1029313221000336) states that a Learning Management System (LMS) can be considered as an important means

of knowledge acquisition and learning management in the digital era. A Learning Management System is also defined as a software application or website that is designed to deliver courses, acquire knowledge and control learning ([Nguyen, N 2021](https://www.sciencedirect.com/science/article/pii/S1029313221000336)).

According to Panergayo, AA. et al. (2021), Learning Management Systems promote the distribution of instructional resources to students by educational institutions. Though there are various definitions for Learning Management Systems (LMS), they all ultimately come to the same conclusion that Learning Management Systems (LMS) are technological instruments that provide support in education.

Furthermore, Brush, K. (2019) states that the appearance and functionality of a Learning Management System (LMS) will differ depending on the goals of the firm, but the Learning Management System's capabilities should enable learning and development advantages.

**E-Learning and its prominence in modern era**

Distance-learning, online learning, and virtual learning are all different terminologies of E-learning which is short for Electronic Learning. It is defined as learning which is supported by technology. According to Muhammad, A. et al. (2016) E-learning is defined as "the use of various technological tools that are web-based, web distributed, or web capable

for education" and E-learning materials as the wide set of applications and processes that use available electronic media and tools to deliver education and training. The materials that

fall under this category are E-books, Educational Videos, Learning Management Systems (LMS), Online Courses and reviewers. Additionally, Singh, V. and Thurman A. (2019) defines Online Learning as learning experienced through the internet, with students engaging

with instructors and fellow students whenever it is convenient for them and do not need to be co-present online or in person.

The popularity and usage of E-learning materials have been growing year after as effect of the advantages it provides, such as flexibility, internet accessibility, and cost-effectiveness (Naveed, Q.N. et al. 2017). This growth is also driven by the increasing availability of digital devices and the expansion of high-speed internet, which facilitates easier access to online learning platforms.

Furthermore, Rabiman, R. et al. (2020) stated that E-Learning shifts the role of traditional learning to be improved more effectively by taking advantage of students’ current habits and that E-Learning can improve teaching and learning activities to be more efficient. They also state that the development of E-learning technology is very rapid and that it is one of the reasons why it is important to be implemented and developed.

The study of Alqahtani AY. & Rajkhan AA. (2020) concluded that the educational process worldwide has been interrupted due to the COVID-19 pandemic. E-learning became much more necessary and very important in education. As a result, they also found that educational institutions during COVID-19 faced the unique challenges of smoothly maintaining the process of learning. Therefore, a need for educational institutions to implement such things.

Additionally, Al-Mekhlafi MAA. (2020) reveals that classes with technology-assisted teaching can make teaching and learning not only effective and efficient but also enjoyable to the learners. They find that students are more motivated to learn about the subjects.

**Usage of LMS and its potential from perception**

Prestoza, M. J. (2024) has found that public school teachers in the Isabela Province of the Philippines frequently use cloud-based Learning Management Systems such as Google Classroom to integrate with their teaching. It is shown that public school teachers blended Google Classroom in their teaching methods and most of the time it is used for transferring their lessons, distributing assignments, facilitating class discussions, class announcements and posting reminders. This widespread adoption of Google Classroom demonstrates how technology can streamline administrative tasks and enhance the learning experience. By utilizing such platforms, teachers are able to provide more immediate feedback, support diverse learning styles, and create a more organized and interactive educational environment.

It is found that the acknowledgement of the importance of technologically-enhanced or Information and Communication Technology (ICT) based learning media are widely accepted by students (Wiratomo, Y. & Mulyatna, F. 2020). This acceptance highlights a growing recognition of the role that digital tools play in enhancing educational experiences and outcomes. The integration of Information and Communication Technology (ICT) in learning environments also prepares students for a digitalized world by developing their technological competencies.

According to research by Panergayo (2021), students’ perceptions regarding the usefulness and ease of use of Learning Management Systems could predict their intentions to

use them. When students find Learning Management Systems to be both beneficial and user-friendly, they are more likely to integrate these tools into their learning practices.

According to the study by Garcia, M.B (2017), it is revealed that internet connectivity experience has a positive relationship with perceived ease of use to Learning Management

Systems (LMS) and E-Learning as a whole. Additionally, students are more likely to adopt and use the system given the high-speed internet.

In addition, Murshithaa, S. M. & Wickramarachchi R. (2015) investigated on the three aspects of qualities of Learning Management Systems (LMS), namely system quality, information quality and service quality. System quality is user-system interaction effectiveness. System quality includes perceived usability, help options, speed, user-friendliness, security, and responsiveness. Their study found that system quality explains 18.8% of student LMS adoption. Students adopted their Learning Management System (LMS) because it met their quality expectations. Service Quality also played a crucial role in the adoption of Learning Management System (LMS) as it explains the 23% variation on students’ LMS adoption at department of Industrial Management. Information quality impacts LMS usability. If the Learning Management System (LMS) provides clear, accurate, and complete information, learners will find it easier to use. High information quality satisfaction influenced the study's respondents' Learning Management System (LMS) adoption. Survey respondents rated information quality the highest of the three qualities and explained 42.5% of student LMS adoption.

Similarly, Haddad FS. (2018)’s assessment on Learning Management Systems (LMS) interprets that evaluating these systems is crucial for the effective implementation of distance learning courses. This data indicates that the important factors impacting distance learners' satisfaction include four independent variables: information quality, service quality, perceived usefulness, and system quality, along with two dependent variables: net benefit and user satisfaction. In particular, system quality has the greatest impact on student LMS quality satisfaction.

**School Implementation of a Learning Management System**

**A. Challenges in Implementation**

In accordance with the studies of Al-Hunaiyyan, A. et, al. (2020), Instructors and students often do not use the more advanced features of Learning Management Systems (LMS). They find that the elements that foster interaction, cooperation, and engagement are the most effective at encouraging user involvement. With the rise in the use of mobile devices, it is important for learning environments to be mobile-friendly. This means LMS platforms should support mobile access to course materials and collaboration. To encourage users to take full advantage of all LMS features, it's crucial to pay more attention to mobile user interface design.

Additionally, the COVID-19 pandemic brought exceptional challenges to Afghan universities, especially with the accommodation of Learning Management Systems (LMS) like Higher Education Learning Management Systems (HELMS) occurring for the first time. As organizations shifted to distance learning, they faced major challenges across faculty, students, and administration. This novel fulfillment of Higher Education Learning Management Systems (HELMS) highlighted a crucial gap: the lack of prior research on its effectiveness and challenges in the Afghan context. Previous investigations by Mohammad, M. et al. (2021) on Learning Management Systems (LMS) usage in Afghanistan, when

anything too general or exclusively targeted, fails to address its own specific problems and their causes that are related with Higher Education Learning Management Systems (HELMS) during the pandemic. Thus, there is a pressing need for directed research to understand and improve the use of Higher Education Learning Management Systems

(HELMS) in Afghan universities, ensuring better support and adaption for all stakeholders involved.

The findings of Dlalisa, S. and Govender, D. W. (2020) reveal a significant gap between the intended and actual use of the Blackboard LMS by academics. Although there is a clear intention among academics to use the authorized LMS, the actual utilization is minimal, especially in student-centered educational activities. This discrepancy is largely attributed to varying levels of computer proficiency and limited expertise with the LMS among academics. The results suggest a need for more comprehensive training and upskilling for all educators responsible for teaching. By enhancing their skills in using LMS

systems, academics would be better equipped to integrate these tools effectively into their teaching practices, thereby improving both acceptance and usage of the technology.

Moreover, as stated by Al-Dhief, F. et al. (2024), Learning Management Systems (LMS) are designed to facilitate effective course setup and administration, offering clear benefits for teaching. Despite these advantages, many faculty members and university staff remain reluctant to fully embrace LMSs in their teaching practices. The underuse of LMS technology in higher education settings is influenced by various factors, including teachers' self-efficacy, instructional goals, and perceptions of the system. Additionally, the availability of time, support services, and resources plays a significant role. Educators are pivotal in integrating new technologies into the classroom, making it crucial to identify and

address the factors that motivate and drive them. Understanding these elements is essential for fostering an environment where technology is effectively encouraged and utilized to enhance student learning.

**B. Benefits in Implementation**

Learning Management Systems (LMS) play a crucial role in enhancing the efficiency and accessibility of education by streamlining processes and making educational resources more accessible. To fully realize their potential in the evolving field of E-Learning Software Development Services in 2024, LMS platforms need to adapt to new technologies, implement a well-rounded strategy, and address various technical issues (Saranya Kannan 2024). This means integrating advanced technologies to keep pace with innovation, ensuring a comprehensive approach that balances various needs and challenges, and resolving technical problems to provide a seamless and effective learning experience.

Moreover, As stated from the study of Machinski, K. (2019), the convenience of LMS extends to tutor training programs, where tutors can access training materials on their cell phones or other electronic devices, both during in-person sessions and remotely. This flexibility allows them to engage with the content, ask questions, and participate in discussions from virtually anywhere, making learning more accessible and interactive.

Despite that, younger students (Kindergarten – 4th Grade) who are still developing basic skills will have a challenging time in using Learning Management Systems (LMS). It would require the tutors extra time to teach them digital literacy and navigating the system. However, because of their enhanced interactivity and adaptability, Learning Management Systems (LMSs) are particularly useful for improving students' academic experiences in upper grades (5th -8th Grade) (Thomas, E. 2023).

Furthermore, Oluwayimika K. R. (2022) found that Learning Management Systems (LMS) are useful for things other than E-Learning, as they can also be used for storing a variety of learning materials like slide decks, videos, written instructions, and other learning materials into one convenient location. Their findings line up with those of Thouraya S.

(2019), who listed a number of benefits of learning management systems (LMS), such as the simplicity of creating and delivering online courses, the ease of carrying out exams online, and the accessibility of course materials. Their studies also highlight the ways in which Learning Management Systems (LMS) can improve interaction and communication in the classroom while saving plenty of time and money for teachers and students. Collectively, these studies highlight the many advantages of LMS in modern education.

According to O’Connor, M. (2020), the fact that all the course materials required for any given course is contained by one consolidated platform is the best characteristics of a Learning Management System (LMS).

In addition, Thouraya S. (2019)’s study reveals significant differences in how different academic fields use Learning Management Systems (LMS). Individuals noted that Learning Management System (LMS) platforms are commonly used to assist educational activities in fields such as science, engineering, and medicine, where they are strongly connected. On the other hand, Learning Management System (LMS) use is more irregular and less common in the humanities and arts. Individuals highlighted the main advantages of Learning Management Systems (LMS) in the UAE educational system, highlighting how simple it is to set up, deliver, and grade online courses. Additionally, learning materials are more readily available and accessible thanks to Learning Management Systems (LMS), which improves resource access for both teachers and students. For both students and teachers, this better accessibility leads in significant time and money savings.

Similarly stated by Bouchiraka, I. (2024), all training materials, resources, and data are securely maintained via Learning Management Systems (LMS), which provide a cloud-based platform that improves accessibility by enabling remote logins. This convenience

reduces the need to travel in order to attend classes, saving time. It also eliminates the need for physical presence. By encouraging learners to actively participate in tasks like answering questions, having group conversations, and participating in competitive exercises, the interactivity included in eLearning through LMS improves engagement. By using a learner-centered approach, the course results are enhanced and the learning process is made more interesting. Furthermore, LMS reduces the reliance on actual instructors by doing away with the requirement for traditional physical resources like printed materials, classroom settings, and equipment rentals. The only resources needed for online training through an LMS are the learners' focus and an internet connection; they can finish courses without having to spend time and money on lodging in hotels or going to training locations.