**LEARNING MANAGEMENT SYSTEM IMPLEMENTATION TO PROVIDE VIRTUAL SYSTEM FOR STUDENTS AND STAFF OF TUTOR HOUSE INC.**

A system presented to the faculty

of Department of Computing and Informatics

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**CHAPTER 1**

**INTRODUCTION**

This chapter consists of an introduction, the project's background, theoretical and conceptual frameworks, statement of the problems, objectives of the study, significance of the study, scope and limitations, and the definitions of key terms employed throughout the study.

As the current learning approaches evolve since the height of the pandemic, numerous methodologies and systems have been made to improve the distribution further and maintain the quality of education delivered to the learners. From the adaptive distance learning and blended learning approaches, several developers made a new platform for every institution to utilize.

The client’s current system is still based on the traditional way of handling learners’ records, utilizing several platforms to do a single task like performing analysis on student’s grades on Excel, handing out assignments orally or with a hard-bound/copy, and keeping the student’s personal records on a tangible thing. By making a virtual learning management system for Tutor House Inc., the implementation of a learning management system would enhance the traditional way of managing the learners’ records. A learning management system is vital for every institution nowadays, even for big or small schools. It helps the administrators of any school to utilize the technological approach to managing records, handing out school work, and even learners’ academic growth assessment remarks. Even though it might sound technical, making a user-friendly and easy-to-access user interface will make it easier for future Tutor House Inc. users to use the system.

**Project Context**

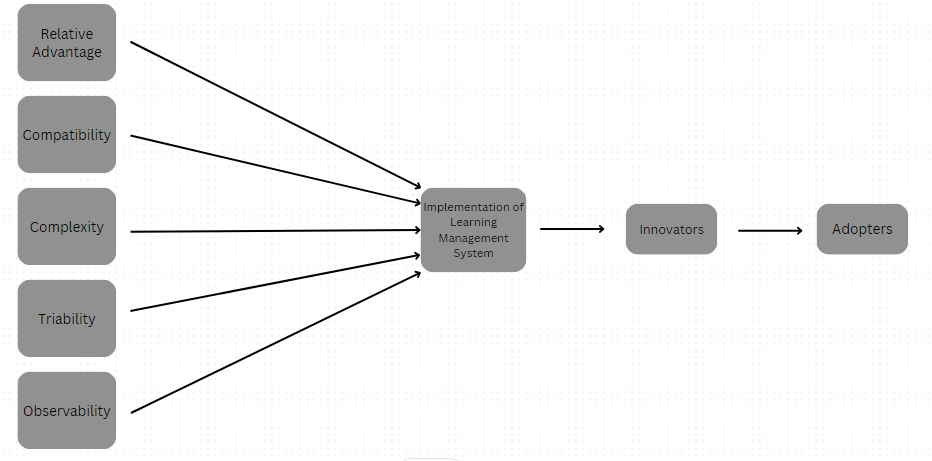
As the world’s technological advancements are rapidly improving, the means of virtualizing any system of any sector in society, even in business or whatever professional organization or company is now the standard to increase work efficiency, and to automate any traditional way of settling things. From automated banking, to virtual payment mechanisms, these are some of the advancements that humans are currently enjoying. Imagine the long lines in a department store or grocery on a Friday payday. With the help of virtual shops, people can buy whatever they want without going to the store where they shop. Modernization in every sector can make a big difference in daily human lives, and as we slowly travel through future, the current advancements that humans have may be different from what will be the future of systems.

Meanwhile, about education, especially in the Philippine setting, some institutions are still working on a traditional way of disseminating information. Most of them do still write student records on a paper, having a huge pile of paper works in their own tables. By means of adapting to technological advancements, virtualization can eliminate these issues by implementing automated systems. Also, to mention that the world has challenged by a circumstance not so long ago, all institutions, schools, and offices shifted their system to online platforms.

The implementation of a learning management system, either big or small school, or even just a tutor house, can create a new experience to learners especially to young students who are fond of mobile gadgets. Systems like LMS can make a difference to their current learning approaches as they continue to learn, even at home, in front of their phones, tablets or laptops.

**THEORETICAL FRAMEWORK**

This study is anchored to Rogers’ theory of diffusion of innovation (1962), which states a complete approach on how humans are adopting to any new wave of things, either invented or discovered in nature by innovators that will bring a new way of seeing things for humans, or also called adopters. [?] To expand the idea of the theory and align it to innovate the traditional way of learning to online learning system, there are five (5) subcategories which acts as influencers on adapting to innovations, namely, relative advantage, compatibility, complexity, triability, and observability. These factors have their own impacts on how humans adapt to changes especially with their conventional way of doing things, before innovation.



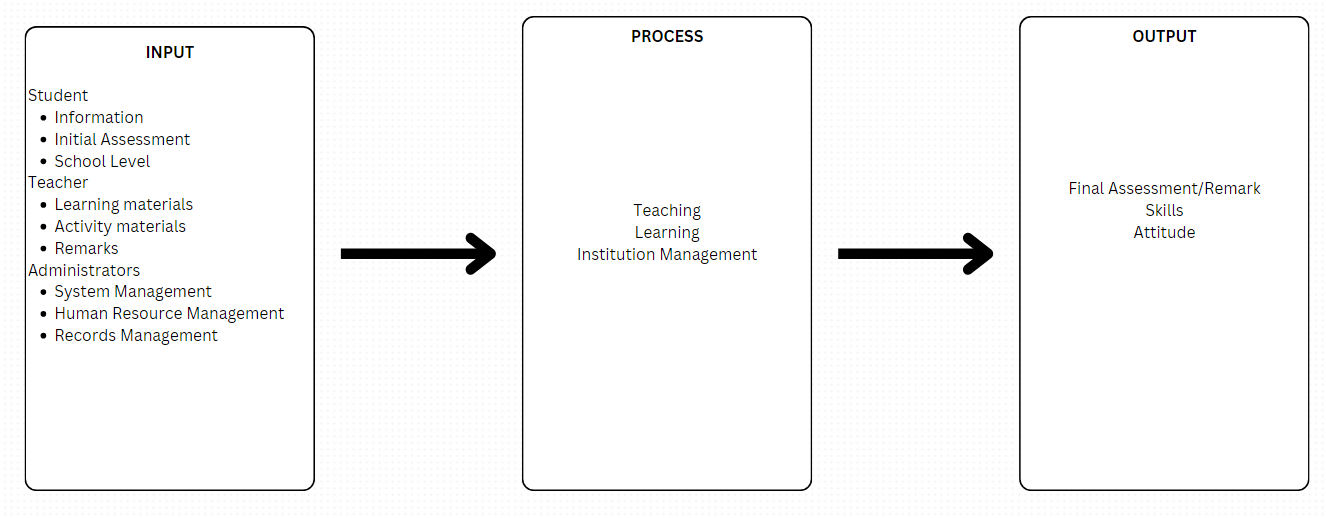
**Figure 1.1.** Diffusion of Innovation model

Following the model in implementation of Learning management system for Tutor House Inc., there will be a comprehensive framework that can formulate the process on how the specific learning management system would be provided for the institution mentioned above. This concept can assess specific goals and targets that the organization wants to acquire. Specifically talking about the concept map, these five factors has their own specific role on creating a Learning management system. The relative advantage will be the anchor of the system that will provide an efficient way of disseminating learning materials, virtual records system, and a distance-learning method that will help the tutors and students to interact while distanced. Compatibility lies on how the system is relative to the past systems that the institution uses. Complexity, as one of the most important factors, shows how the system can be used by less computer literate people. If the system is not user-friendly, especially to people who are not fond of technological advances, then the adoption might not be effective. Triability is when the system can be utilized in order to get feedback from potential users. And lastly, Observability, as the most important factor, which will indicate how effective the implementation of Learning Management System is for Tutor House Inc.

In conclusion, the theoretical framework’ Diffusion of Innovation can be aligned to the implementation of a Learning Management System for Tutor House Inc. because it plays an integral part on how the future users will interact to this new way of learning approach.

**CONCEPTUAL FRAMEWORK**

The overview of the system provides a comprehensive summary on how the system functions. Below is a guide of the step-by-step process on how the system be utilized.



**Figure 1.2:** The Conceptual Framework of the Study

The conceptual framework of the study is based on Input, Process and Output (IPO). The initial phase, which is the input, gathers all information necessary for the enrollee or student, which will be handled by administrator, as well as the tutors. Aside from student’s information, an initial assessment will be also done, this will be the basis for teachers to map the necessary adjustments to address the lacking skills and knowledge of a student on a certain subject. Also, the school level, which will also the basis of learning difficulty. For teachers, the input phase is done by uploading learning and activity materials for the student, as well as giving remarks to each one of it, to test if there’s an ongoing learning on the student. Lastly, for the administrators, their input will be based on how they will manage the system, as well as their position to input all the necessary information and announcements. On the other hand, for the process, is mainly teaching and learning, both for student and teacher. Lastly, the output, will be the final remarks for student if he/she improved their own knowledge on the subject they took tutoring.

**STATEMENT OF THE PROBLEM**

The main purpose of this study is to provide the developers’ client their own virtual learning system that is web-based, in order to virtualize the traditional way of learning that the client has. To suffice the lack of technology-based system and other issues that the client has, the developers intended to create a web-based platform for them to adapt to the current learning standards, as well as to shift to the blended learning approaches that a lot of institutions are currently offering. Specifically, the research deems to answer the following questions:

1. How can the developers conceptualize and create a virtual management system for Tutor House Inc., especially for its students, staffs and administrators?
2. How the new web-based platform will adapt to the new learning approaches which will shift the students from traditional tutoring mechanisms to virtual methodologies?
3. In what way the developers will assess the effectiveness of implementing a web-based learning management system in improving the work efficiency, especially the learning practices of staff and administrators of Tutor House Inc.?

**OBJECTIVES OF THE STUDY**

This study intends to develop a new management system for schools like Tutor House Inc. and scrap the traditional way of processing the student’s records, remarks, and learning approaches to improve the quality of education further. To further provide a better view of the objectives, below are the much more comprehensive goals that the developers are looking for:

1. To develop a virtual learning management system for Tutor House Inc. for its student, staff, and administrators.
2. To give them a new learning methodology/approach that will give students a new and better learning experience while adapting to a blended learning approach.
3. To assess the effectiveness of a learning management system in improving the work efficiency of staff and administrators of Tutor House Inc. based on how they will utilize the system.

**SIGNIFICANCE OF THE STUDY**

This study is conducted to benefit the following parties:

**To the students** – To introduce them to a new learning platform that will ease the process and make the learning experience more efficient and effective. The students can use the system by uploading answering materials, taking quizzes, and viewing announcements.

**To the Learning House –** They can use the system to blend into the new wave of learning mechanisms nowadays. As we progress with the technological advances that we have today, adaptation to virtual learning platforms will lead to better dissemination of learning materials, digital attendance sheets, and online student record systems.

**To the researchers** – This study will help the researchers involved in developing and improving their programming skills and grow their knowledge of how systems are developed and implemented, which can be vital for their growth as they progress.

**To the future researchers –** This study might help future researchers as their guide as they might want to make or improve the system that made up this study.

**SCOPE AND LIMITATIONS**

**Scope**

Learning Management System for Tutor House Inc. provides ample functionalities to cater the enlistees of Tutor House Inc. as their second institution to pursue learning and to further improve their scholastic performances in their primary schools. First, it is an online platform, web-based learning management system that can be used anywhere they want, as long as there is an internet connectivity. It allows the students, as well as teachers and administrators to access their own accounts with different permissions. For students, they can log-in to check if there’s a learning material uploaded for them by the teacher, as well as activities and assessments. Also, if announced, the student can check their progress reports and remarks to see if there’s an improvement in their learning. For teachers, as mentioned above, they can upload lessons, activities, and any other learning materials for their students. As well as to give remarks to the uploaded answer sheets of the learners. Administrators have the maximum security access, giving them permission to check all of the progresses of students, as well as to check the learning materials that the tutors’ are uploading.

**Limitations**

In contrary to the scope that offers an extensive functionality to the users involved in the Tutor House LMS, there are also limitations present in the system. First, there is no notification page that can notify the student every time they log-in that there is already an uploaded lesson/activity by the teacher, because of this, the student must check each page whether there is a newly uploaded material for them to download. Next, there is no messaging board or system that can be used as a communication tool by students and teachers. The developers thought that the issue within the time frame until its presentation that they cannot fulfill this feature, also to consider that there’s a lot of social media applications that the school, (including teacher), and student or their parent/guardian can use to communicate. Lastly, there is no attendance system feature that can check the attendance of students. The researchers decided to drop the idea of attendance function because the institution of the client is not a formal school, but rather a Tutorial school, which only meets if scheduled.

**DEFINITION OF TERMS**

**Blended Learning.** A way of learning that combines traditional classroom lessons with lessons that use computer technology and may be given over the internet. (Cambridge Dictionary, 2023)

**Distance Learning.** A way of [studying](https://dictionary.cambridge.org/dictionary/english/study) in which you do not [attend](https://dictionary.cambridge.org/dictionary/english/attend) a [school](https://dictionary.cambridge.org/dictionary/english/school), [college](https://dictionary.cambridge.org/dictionary/english/college), or [university](https://dictionary.cambridge.org/dictionary/english/university) but [study](https://dictionary.cambridge.org/dictionary/english/study) from where you [live](https://dictionary.cambridge.org/dictionary/english/live), usually being [taught](https://dictionary.cambridge.org/dictionary/english/taught) and given [work](https://dictionary.cambridge.org/dictionary/english/work) to do over the Internet. (Cambridge Dictionary, 2023)

**Learning Management System (LMS).** As defined by Kirvan & Bursh (2023), A Learning Management System (LMS) is a software application or web-based technology used to plan, implement and assess a specific learning process. It's used for [e-learning](https://www.techtarget.com/whatis/definition/distance-learning-e-learning) practices and, in its most common form, consists of two elements: a server that performs the base functionality and a user interface ([UI](https://www.techtarget.com/searchapparchitecture/definition/user-interface-UI)) that instructors, students, and administrators operate. (Kirvan & Bursh, 2023)

**Pandemic.** An outbreak of a disease that occurs over a wide geographic area (such as multiple countries or continents) and typically affects a significant proportion of the population**:**a pandemic outbreak of a disease. (Merriam-Webster Dictionary, 2023)

**Tutor House.** As used in a study, a tutor house is a place of tutoring program, wherein incoming or ongoing grade school students improve their skills in a subject such as Mathematics, Science, and English by completing worksheets of increasing difficulty, led by a special instructor.

**Virtual System.** A virtual system (VSYS) is a virtualization technology that divides a physical device into multiple independent logical devices. Each virtual system functions as a real device with its own resources and runs its own services, which an administrator can independently configure and manage. (IP Encyclopedia, 2023)

**CHAPTER 2**

**REVIEW OF RELATED LITERATURE**

Presented in this chapter is the summary of related studies and professional literature which had a significant relevance to the study. This review will provide significant information which the researchers, with helpful resources and essential background, may undertake and enrich this research. The following are the foreign review of related studies:

According to the book Uses of Technology in Primary and Secondary Mathematics Education, the use of technology in mathematics education, which encompasses the use of both classical and digital technologies, has a long and broadly discussed tradition. The potential impact of technology on what and how students learn (e.g. Fey et al. in Computing and mathematics. The impact on secondary school curricula. National Council of Teachers of Mathematics, Reston, VA, 1984) is an issue which has existed for decades and there is now a growing corpus of studies which provide insight into the role of technology in mathematics education (see for example, Blume and Heid in Research on technology and the teaching and learning of mathematics: volume 2 cases and perspectives. IAP, Charlotte, NC, 2008; Drijvers et al. in Uses of technology in lower secondary mathematics education: a concise topical survey. Springer, Cham, 2016; Heid and Blume in Research on technology and the teaching and learning of mathematics: volume 1 research syntheses. IAP, Charlotte, NC, 2008; Hoyles and Lagrange in Mathematics education and technology-rethinking the terrain. Springer, New York/Berlin, 2010; Moyer-Packenham in International perspectives on teaching and learning mathematics with virtual manipulatives. Springer International Publishing, Switzerland, 2016). Consideration of the impact of technology on the teaching and learning of mathematics has been the topic of considerable research and continues to be of interest as researchers investigate the potential of technology-enabled mathematics education. For these reasons, it is not surprising that technology use was the focus of three Topic Study Groups (TSGs 41, 42 and 43) at the 13th International Congress on Mathematical Education (ICME), held in Hamburg in 2016.

According to the study titled “Benefits of Learning Management System (LMS) in Indian Education”, In today's world, schools are trying to find the right mix of students, teachers, protocols, and systems to run their learning programs. Learning management systems (LMS) are becoming a way to handle course registration, manage course content, evaluate students through assignments, quizzes, and exams, and make sure that the administration, evaluation, and report-making processes of an institute run smoothly. In general, LMS/E-Learning is a way to learn with the help of technology, such as the Internet and interactive-based learning, instead of the old ways. This makes learning possible across a wide range and more efficiently. In India, Technical Education Institutions (TEI) depend on classroom teaching to cover their curriculum. A lot of work goes into managing, storing, and reusing course materials so that the same course can be taught again next semester. This system will be a central place for students and teachers to talk to each other outside of the classroom. It will also help students, teachers, and college management deal with problems that come up every day. In the LMS process, teachers can upload course materials like lecture notes, e-books, homework, quizzes, and mid-semester tests, which students can then access with their login information. Here, we look at the different parts of the LMS and how they help students do better in school than with traditional methods. Since there aren't many survey reports in the literature that talk about the benefits of LMS in the Indian education system, we looked to surveys done overseas in the form of literature reports to get a better idea of what LMS has done for students in the past. The most important enterprise system for teaching and learning is also the LMS.

As also stated in the study titled “Blended learning via Schoology as a learning management system in reading class: benefits and challenges”, Blended learning, which is when online learning and face-to-face learning are used together, is thought to be more useful than either online learning or face-to-face learning alone. When Schoology is used as a Learning Management System in blended learning, it can help teachers keep track of information about their classes. Schoology lets teachers and students share information and gives access to certain courses' content or administrative features. Even though the benefits of blended learning through Schoology have been talked about, EFL teachers still don't want to use it in their reading classes. This literature review looks at several papers that look at the pros and cons of using Schoology as a Learning Management System for blended learning. The goal of the study is to look at the pros and cons of using Schoology for blended learning. The information was gathered from both first-hand and second-hand sources. It is hoped that the results will encourage EFL teachers to use blended learning through Schoology in their classes and draw their attention to the challenges of blended learning through Schoology, which will help students learn better.

According to the study titled “Empirical Study on Electronic Learning System: Benefits, Challenges and Prospects”, Because digital technology is growing so quickly, people are using new technologies in all of their work. Over the years, the number of people who use smartphones has grown quickly. Because of this, many developed countries now use online learning to bring education to everyone, no matter where they live. In the same way, the COVID-19 outbreak is making a lot of developing countries adopt the electronic learning system as a way to teach and learn. So, the e-learning system can be used to make online sessions with useful information, extra lessons for students, webinars, e-mentoring, and online conferences. This paper uses an empirical method to evaluate the pros and cons of the e-learning system. A survey was given to students at a higher education institution in Nigeria and at different online researchers' forums around the world to find out what problems students are likely to have with the e-learning system. Four hundred ninety-five (495) responses were collected, and descriptive statistics were used to look at the data. The results of the survey show that 33.94% of students were unhappy with their internet connection, which is also a big problem in most developing countries. Only 7.27% of respondents were unhappy with how much feedback they got. It is recommended that there be a standard IT infrastructure, strong internet connectivity, and an easy-to-use e-learning platform. This will improve performance and lead to more work being done.

According to the study titled “Development of Ubiquitous Learning Environment Based on Moodle Learning Management System”, Open learning has been accelerated by digitalization, education reform, and rapid resource growth. Electronic and mobile learning can alienate students from the real world, make it hard for them to focus on learning goals, let them waste time on entertainment, and increase their cognitive load. Ubiquitous learning, a continuation of electronic and mobile learning, offers more than just the latest educational ideas or methods. It can accommodate students and their learning styles by providing adequate information anytime and anywhere based on their characteristics, needs, and desire to improve academic performance and productivity. This study develops the ubiquitous learning environment, including the ubiquitous learning portal built with Moodle LMS and the ubiquitous learning course in Instructional Media. 2) test the ubiquitous learning environment. The R&D for Education model was used for analysis, design, development, and evaluation. All stages of creating a portal and ubiquitous learning course in the Instructional Media course have been completed.

The following are the foreign review of related literatures:

According to an article titled “Learners' Needs in Online Learning Environments and Third Generation Learning Management Systems (LMS 3.0)” Web-based Learning Management Systems let students interact with content, assessments, and instructors. LMSs have been popular since the information age. This study examined learners' expectations and needs, one of the LMSs' most important stakeholders. The researchers used an open-ended questionnaire and a semi-structured interview form. Content analysis examined open-ended questions and interview data. According to the findings, learners want more entertaining and self-monitoring environments, especially with gamification. Learning environments report and predict student achievement. Third-generation LMSs meet learners' needs. Educational data mining and learning analytics can create third-generation LMSs. This research examined third-generation learning management systems, intervention, and learner expectations and needs.

According to an article titled “Students' Use of Learning Management Systems and Desired E-Learning Experiences: Are They Ready for Next Generation Digital Learning Environments?”, Despite upgrades, students use LMS administrative functions more than learning applications. Students' readiness to use next-generation digital learning environments that support user accessibility through content creation and curation, integrated systems interoperability, personalised adaptive learning, collaborative learning, and analytics-driven performance management must be considered as learning management systems evolve. This study surveys 262 Fine Arts majors to determine how they use learning management systems and if their desired e-learning experiences match next-generation digital learning environments. Student-centered e-learning, content curation, private group management, and mobile interoperability are desired by students who frequently use learning management systems for content learning and discussion. Students' current experiences influence their desire to use e-learning systems. Infrastructure upgrades and faculty preparation are needed to create student-centered digital learning experiences. These findings affect higher education institutions implementing next-generation digital learning environments.

According to an article titled “The Case Study on the Effectiveness of Online Learning Management System to Impart the Knowledge of Advance Course”, The classroom is no longer the only place where people can learn. Online learning management systems like Moodle make it easy for teachers to set up an online presence, make courses, and keep track of them all. At the same time, these ways of learning allow students to get into the course at any time. A MOODLE course called "Advanced Search Engine Optimization" was made so that online learning management systems could be used. The course is made up of different tasks that the learner has to do. During the course, the level of engagement and performance of each learner was tracked and analyzed.

According to an article titled “Personalized Learning Utilizing a Learning Management System in a Middle School”, The goal of this mixed-method study is to find out what teachers and parents think about students in personalized learning classes that use a learning management system (LMS). Teacher and parent interactions and experiences with students over the course of a school year are used to figure out how students see themselves. The study uses the TPACK framework, which stands for Technology Pedagogy and Content Knowledge. It also includes personalized, self-paced, and small group learning. The researcher made the tool, which has 20 Likert-style questions, optional questions about demographics, and an open-ended response for participants to share thoughts, concerns, and successes that weren't asked before in the survey. This study looked at two things. One analysis was to see how teacher answers compared to parent answers, and the other was to see how well the instrument worked on its own. [The citations for these dissertations are shown here with permission from ProQuest LLC. Without permission, you can't make more copies.

According to an article titled “The Acceptance of Learning Management Systems and Video Conferencing Technologies: Lessons Learned from COVID-19", During the outbreak of the Coronavirus (COVID-19) pandemic, higher education institutions (HEIs) have shifted from traditional and blended learning approaches to a fully virtual course delivery. This research investigates the students' perceptions on remote learning through asynchronous learning management systems (LMS) and via synchronous video conferencing technologies like Google Meet, Microsoft Teams or Zoom, among others. The data was gathered from a sample of 501 higher education students in a Southern European context. A survey questionnaire included measures that investigated the participants' acceptance of interactive technology to better understand their utilitarian motivations to use them. The findings suggest that the research participants accessed asynchronous content and interacted with online users, including with their course instructor, in real time. While there are a number of theoretical or opinion papers on the impact of COVID-19 on higher education services, currently, there are still a few empirical papers that shed light on the factors that are having an effect on the students' attitudes and intentions to utilize remote learning technologies. This contribution underlines the importance of maintaining ongoing, interactive engagement with students, and of providing them with appropriate facilitating conditions, to continue improving their learning journey.

The following are the local review of related studies

The Education Sector in the Philippines has been successful by integrating E-Learning (Online Learning) LMS with Schools, Colleges, and Universities. This is because traditional education and learning methods had changed and clashed with school schedules when the Covid-19 Pandemic hit the world in 2020-2021. One thing that made E-Learning and virtual class development methods work better during these uncertain times was that most educational institutions took advantage of useful online and classroom innovations to start over and make the necessary changes. It's also true that many different businesses did well, and educational institutions got E-Learning tools that made learning through the internet even more exciting. There are virtual steps of LMS and online class lead classes, as well as openness to E-Learning LMS and AI-powered controlling devices that companies use to help their employees learn in a systematic way. E-Learning courses and a number of different Learning Management Systems (LMS) are now available to both parents and students. These systems help students improve their e-learning skills. Because of these important changes in e-learning and other business-related and processed arrangements, LMS has been used for proper training in places like schools and colleges. Instructors and Facilitators used successful LMS that was combined with their E-Learning modules and recordings as reference materials, with the combination of innovation continuing to computer and other labs online. (Lee, 2023)

In the study titled “Amidst the Online Learning Modality: The Usage of Learning Management System (LMS) and Its Relationship to the Academic Performance of the Filipino Students” in 2021, Today's technology-driven society and academic institutions use Information and Communication Technologies (ICTs), learning management systems (LMS), and mixed learning methods to help students do better in school and learn more. So, this study looks into the link between 188 Filipino students' use of a learning management system and how well they do in school. Based on the Pearson association coefficient, there was no link between the students' use of LMS and how well they did in school.

According to the study “The Use of Learning Management Systems in ESP to Explore Postgraduate Students' Content Knowledge about Epidemiology and COVID-19: A Mixed-Methods Study” This sequential explanatory mixed-methods study looked at how an online English as a Second Language (ESL) course affected postgraduate students' understanding of epidemiology and COVID-19. The course was called "English for Pandemics" and was taught using a system called Edmodo. Informally, Needs Analysis was used to find out what the participants' needs, tastes, and wants were so that the treatment could be shaped around them. A quasi-experimental design (a one-group, pre- and post-test design) was used by the researcher. Before the treatment, each person was given a test. The treatment was to do eight units of English for Pandemics online, using Edmodo to deliver, receive, master, and test the material. After 8 weeks, the people who took part in the study were tested again.

The quantitative results showed that the subjects' knowledge about epidemiology and COVID-19 was statistically different. Qualitative results showed that users liked the interactive features of Edmodo (simplicity, functionality, control, community learning, and real-time feedback) a lot and were ready to use Edmodo in the future.

As stated in a study in 2020, As schools have closed, early childhood education has changed. Most of the children learn online to stop the disease from spreading, especially when they can't learn face-to-face. Parents and teachers play important parts in helping kids get smarter and get along better with others. But putting home learning into practice is hard because it's hard for very young children to control themselves, not all kids are ready to use digital technology and learning materials, parents have different ideas about online learning compared to traditional learning, and parents need to have a lot of time and knowledge to help their kids. During the spread, it is important for parents and teachers to talk to each other well to help young children learn online.

This study looks at the most important things that affect how children respond to a non-traditional learning platform, especially self-learning modules (SLMs), which are used by public schools in the Philippines to teach service-learning. Our goal is to find out how well access to the internet, food security in the home, and parental participation can predict how interested students will be in these modular classes during the health crisis. Based on the answers (n=359) of 359 parents of public school students to our online survey, our regression analysis shows that our model works F(3,355) = 19.2, p0.001. We found that food security and parental participation are good predictors of how much students enjoy their SLMs, but access to the internet is not. So, our model shows that children whose parents spend time helping them with their schoolwork and who live in homes with enough food are more likely to do well in their modular classes, whether or not their homes have internet access. (Rodriguez et al., 2023)

The following are the local review of related literature

COVID-19 has caused problems in education around the world. As a result, there has been a big shift from learning in person to learning online, which affects students, teachers, and parents. The goal of the descriptive-correlational research was to describe, investigate, and explain how online learning affects students' attitudes, time management, and technostress, as well as how these things affect how well elementary students do in school. One of the elementary schools in Camiguin Province was where the study was done. The research used one survey questionnaire with four parts: profile, attitude, time management, and technostress. Google forms were used to gather the information, and the link was sent through Facebook messenger. Statistics that describe (counts, percentages, and means) were used to describe the respondents' attitudes, academic performance, time management, and technostress. On the other hand, the T-test and Analysis of Variance (ANOVA) were used to answer inferential questions about differences. Pearson-R correlation was used to test relationships. (Ramirez, 2022)

Research on intelligent tutoring systems (ITS) is not a new field. Even though it's good for teaching, not many ITS are made for Filipino learners. Since there wasn't much ITS research done in the Philippines, it wasn't taken into account that Filipino learners might need a different way to learn. This chapter talked about where research on ITS is in the Philippines. The readers would learn that there is a need for cross-disciplinary studies about Filipino learners that could be used to create ITS that fits their culture. It also talked about the culture of Filipino learners and will try to use these descriptions as design considerations when making ITS. Lastly, it showed how to make an ITS for Filipino learners by giving ideas and directions. (Bringula, 2020)

Using technology to learn, like with Electroniclearning, has become an important part of the education field. Taking into account all the work that has been done to learn more about how people learn shows that all the models of self-regulated learning that have been recognized and thought about need to be looked at again. Because of this, we can talk about a full analysis and focus on new features of well-known SRL models from the literature from 2015 to 2022. This is what this paper is about. A systematic review of the literature was done on six SRL models based on the factors that make these models good for E-learning. It was found that cognitive and metacognitive activities work together in all SRL models, and that their characteristics, processes, and parts are all the same. Now, all six of the SRL models we've looked at can be used in an e-learning environment. But SRL models, with the help of digital technologies, might make learning in the Philippines better for the students. (Lopez et al., 2022)

This chapter is all about the basic education policies and programs that are being used in the Philippines. It talks about what will be taught, how it will be taught, and how quality will be made sure. This is part of the K to 12 reform effort that was put into place in 2012 when Kindergarten and Senior High School were added to the basic education program in the Philippines. There are also talks about different parts of program implementation, like how teachers can improve their skills, how governance and leadership work, and how technology can help. The chapter ends with a look at a few changes that could happen in basic education because of global trends and national plans for development. (Ocampo & Buenviaje, 2021)

People often study the amount of work teachers have to do. But despite all the books and articles and calls to action, this is still one of the biggest problems in education. So, the goal of this paper is to learn more about the policies by collecting and analyzing the effects of the workload policy and the working hours of public school teachers. The goal is to get a clear picture of how these policies are affecting the field right now. In particular, its (1) effectiveness, (2) efficiency, (3) economy, (4) fairness, and (5) impact. The researcher's goal isn't to make broad statements about how teachers think, how good they are at their jobs, or how well they do their jobs. Instead, he or she wants to review and analyze the most common issues and concerns that can be seen in the existing literature and studies. Systematic Review and Meta-Analysis (SR/MA) was used to look at the effects of public school teachers' workload policies and work hours. Policies, books, and studies on teachers' workloads, which were chosen through a process called "purposive sampling," are the main sources of data. To do a qualitative analysis of the data, a deductive method based on thematic analysis was used. The results showed that teachers' overall effectiveness and efficiency are affected by how much work they have. Also, these problems need to be solved quickly so that the government can get more money to improve access to and quality of education, which is very important for the Philippines' economy. Based on the results of this analysis, the following strategies and actions are suggested: policymakers should do a full review and analysis of the policy; workloads should be cut; the data management system should be improved; the staffing system should be improved; more non-teaching staff should be hired; quality teacher mentoring programs should be set up through professional learning communities (PLCs); and other government programs should be improved. (Tarraya, 2023)

**CHAPTER III**

**RESEARCH METHODOLOGY**

This chapter describes the research methodology, such as the techniques used to obtain research aimed to find in the study. It covers the Research Design, Research Locale, Population of the Study, Sampling Design, Data Gathering Tool and Procedure, Technical Background, Algorithm Design and Techniques, Software Development, Methodology and Implementation Plan.

**RESEARCH DESIGN**

**RESEARCH LOCALE**

**POPULATION OF THE STUDY**

**SAMPLING DESIGN**

**DATA ANALYSIS PLAN**

**DATA GATHERING TOOLS**

**DATA GATHERING PROCEDURES**

**SOFTWARE DEVELOPMENT METHODOLOGY**

**TECHNICAL BACKGROUND**

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