IRJE |Indonesian Research Journal in Education|
|Vol. 8| No. 1|June|Year 2024|

Evaluating the Implementation of Learning Management System: The Case of an English Education Study Program

NI LUH PUTU NING SEPTYARINI PUTRI ASTAWA[1*] AND PANDE AGUS ADIWIJAYA[2]

Abstract

E-learning is an application of information technology in education. Students could communicate at any time and location because digital learning resources were distributed and accessible via the network. This research was to investigate the extent to which students are prepared to participate in e-learning. The research methodology employed was descriptive quantitative. The research sample consisted of 62 students of the English Education Study Program ITP Markandeya Bali. Students answered 27 points of questionnaires based on evaluation models Context, Input, Process, and Product (CIPP). The distribution of data acquisition was repeated to ensure data consistency. Students' readiness to participate in e-learning was measured using the CIPP model, with the following results: (1) Context aspects of 84.675% (High), (2) Input aspects of 83.86% (High), (3) Process aspects of 90.6% (Very High), and (4) Product aspects of 91.4% (Very High). Some recommendations are added to this research.

Keywords
CIPP evaluation model, English language education study program, learning management system

Article History
Received 26 September 2023
Accepted 24 May 2024

How to Cite
Astawa, N.L.P.N.S.P., &Adiwijaya, P.A.(2024). Evaluating the implementation of learning management system: The case of an English education study program. *Indonesian Research Journal in Education |IRJE|, 8*(1), 339 – 349. https://doi.org/10.22437/irje.v8i1.28474

[1*] Lecturer at Primakara University, Indonesia, corresponding email: ning@primakara.ac.id
[2] Lecturer at ITP Markandeya Bali, Indonesia

Introduction

Technology has an impact on every aspect of life, including education. The role of technology in education provides both educators and learners with benefits in terms of access to education, learning tools, and exposure to digital literacy skills that are valuable in real life (Ahmed & Akyildiz, 2022; King & South, 2017; Richards, 2015). Regarding accessibility, technology can facilitate the learning process regardless of distance or conditions that prevent face-to-face instruction. With the help of technology, students can access learning at any time. It is beneficial for students who cannot attend lectures at specific periods. E-learning as a Learning Management System (LMS) is one of the technological innovations in education. Multiple nations, including Indonesia, make use of LMS for educational purposes. Numerous LMS platforms, such as Moodle, Edmodo, Canvas, Google Classroom, and Schoology, are popular in Indonesia (Zulviana et al., 2021). The benefits make LMS utilized across all levels of education, from elementary to higher education. According to the conducted literature review, educational institutions also develop their LMS or purchase one from a third party to obtain the desired features (Morris, 2022).

The Indonesian government has given sufficient consideration to the use of LMS, particularly in the Higher Education sector (Kemdikbud, 2020). The Indonesian Ministry of Education and Culture provides a special LMS platform for tertiary institutions. At the beginning of the Covid-19 pandemic, the government suggested implementing distance learning via Google Classroom as an emergency mitigation measure. There are factors to consider when implementing LMS into the learning process. First, the availability of technological devices such as laptops, tablets, desktop computers, and smartphones (Asio et al., 2021 & Joo et al., 2016). In addition, the availability of Internet connectivity is crucial for distance learning (Basar et al., 2021; Mukarromah & Wijayanti, 2021). These are the initial essential requirements for accessing a learning management system. The digital literacy skills of the individuals engaged also contribute to the success of e-learning implementation (Dewi & Fatkhiyani, 2021; Hamutoglu et al., 2019). An individual's capacity to operate technological devices, both in terms of operating hardware and software, is one of the most essential criteria for successful technology-based learning. Someone with insufficient skills in digital literacy should receive careful supervision in implementing learning that includes e-learning. Cruz and Catura (2020) showed how important it is for teachers and students to be prepared to use e-learning in the classroom for the learning process to be successful. This readiness begins with the most essential factor, which is an individual's perspective on implementing virtual learning and the ownership and use of additional hardware and accessories to support e-learning-based learning, such as headsets, speakers, microphones, and webcams. In addition, comprehending how to utilize the LMS's features is essential for preparing for the implementation of e-learning.

Initially, some researchers have conducted before concerning the use of LMS in university. Pratomo and Wahanisa (2021) have reviewed the use of LMS at Semarang State University of which they found that the use of the LMS brought easiness for the students and lecturer as well as promote directed, effective and efficient learning system. They also noted that the students active-participation and autonomy have a crucial part in achieving learning goals. As one of the uinversities in Bali, ITP Markandeya Bali has utilized LMS since the Covid-19 pandemic. This pandemic disrupted the teaching learning process at this university.

The university used Moodle platform for the LMS. At the beginning, many challenges were found when utiliing the LMS such as hardware issue, human resources, lecturer and students unpreparedness to the technology, budgeting, and unwillingness of using the technoloy. The complexity of the features in the LMS had crucial issue for both the lecturer and students. Since 2023, the university change the Moodle LMS into Edufecta LMS based on the cooperation with APTISI (The Association of Private Universities in Indonesia). Edufecta is a digital product developed by PT IndoSterling Technomedia Tbk (TECH).

The use of Edufecta as a new LMS platform was welcomed by the management, lecturer and students of the university. This LMS has simpler layout and features which was user friendly compared to Moodle LMS. Edufecta also provided technology support assistance which was very helpful for the university in handling some technological problem during the use of the platform. However, there were still problems faced by both lecturer and students in using this LMS. Mostly the senior lecturers and new students had this problem. Therefore, the use of LMS in the teaching learning process at ITP Markandeya Bali was not efective.

As a result, it is essential to research to determine the extent to which LMS has been included in the learning process in English Education ITP Markandeya Bali. This research aimed to determine the extent to which students were prepared to participate in e-learning using the CIPP model. In addition to evaluating the implementation of an LMS in a university, this research can be used as a reference regarding the efficacy of an LMS and how to make future LMS usage more efficient. The goal of this research was to evaluate the implementation of e-learning in the form of LMS utilized in English Education ITP Markandeya Bali, taking into account the context, input, process, and product evaluations respectively.

Methodology

Research design, reseacrh site and respondents

This research carried out a CIPP evaluation on the LMS implementation that took place at ITP Markadeya in Bali. The CIPP model was developed in 1965 by assessment specialist Daniel L. Stufflebeam (Stufflebeam, 1971). This evaluation is carried out to describe, gather, and provide meaningful information for making alternative decisions. Through this evaluation, an improvement is expected by providing feedback for individuals or instituion who are related to the implementation of a program. It is because an effective evaluation requires identifying and continually guiding a decision, providing account information and advocating effective program methodologies (Stufflebeam, 2003). CIPP model has been widely used to evaluate educational programs, especially in higher edaucation level (Akbar & Buton, 2023; Tokmak et al., 2013; Tugwell & CN, 2022). This research consisted of four aspects namely, context, input, process, and product. Each of this aspects were evaluated thoroughly to provide meaningful feedback for the stakeholders.

This research was carried out at English Language Education Study Program of ITP Markandeya Bali. This university established since 2009 and open for the English Language Education Study Program isnce 2014. The students and lecturer at this study program have been using LMS provided by the ITP Markandeya Bali since 2020 as the consequences of the Covid-19 pandemic. However, some of the lecturers and students had some challenges in using the LMS. Thus, this research was carried out to find out the obstacles of the use of the

LMS as well as promoting the improvement strategies of the use of LMS. There were 62 participants from the English Language Education Study Program participated in this research. The students were choosen based on the studetns' interest and willingess in participating to this research. The students were from different level of semester starting to first to eighth semester students.

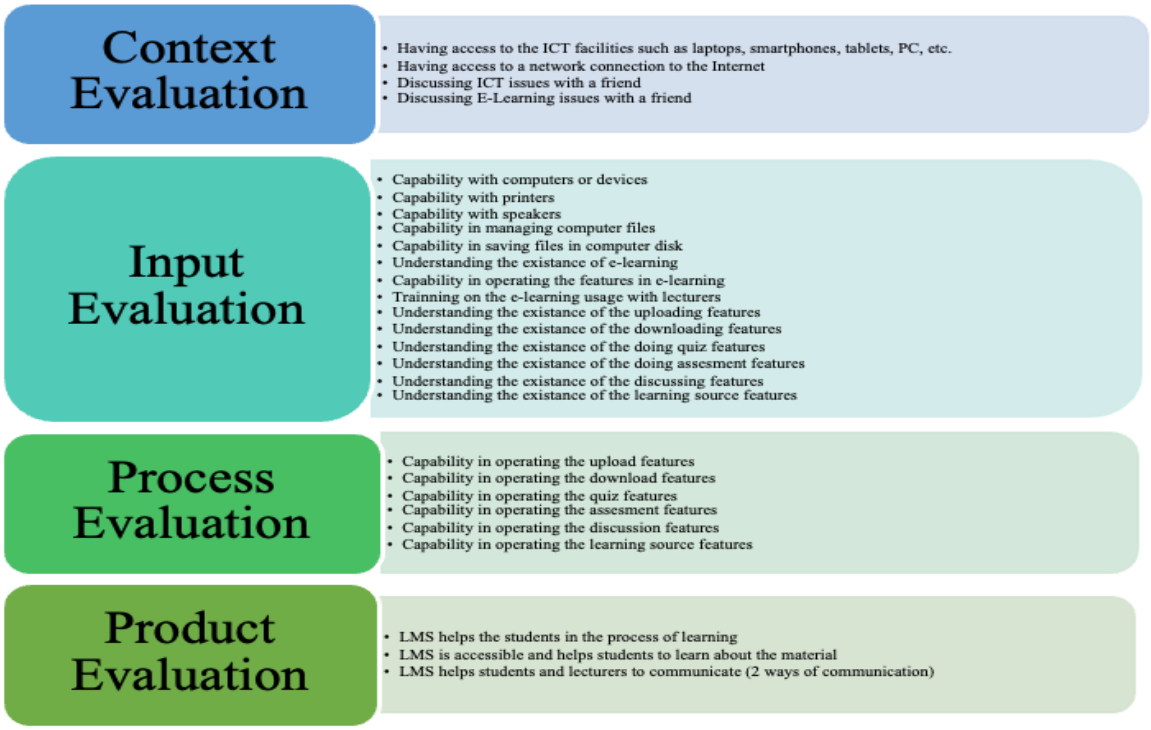
Data collection and analysis

In the context, inputs, process, and product evaluation sections of this descriptive quantitative study, 27 questions were administered. The questionnaire is an adaptation of Rosiyanti (2020). Each investigation phase was conducted simultaneously with the same Google form-administered questionnaire. After the data were collected, the data were analyzed quantitatively. The researcher devised the score range described below to classify the research results.

Table 1. *Score & range categories*

Number	Range	Category
1	$x < 62.5\%$	Very Low
2	$75\% > x \geq 62.5\%$	Low
3	$87.5\% > x \geq 75\%$	High
4	$x \geq 87.5\%$	Very High

Figure 1. *Framework of CIPP & instruments used in the research*



Findings

Context evaluation

In context evaluation, four questions were utilized. In this phase of the implementation process for e-learning, researchers assess the accessibility and facilities owned by students. In addition, the researcher looked at the ecosystem and community support from the students' surroundings to determine how best to maximize the use of e-learning, which was addressed in each of the four points covered by the questionnaire.

Table 2. *Context evaluation results*

Questionnaire	Score	Total	Category
Q1	87.1%	84.675%	High
Q2	83.9%		
Q3	79%		
Q4	88.7%		

Based on the analyzed data, the context evaluation results fit into the "High" category. It is demonstrated by the results of the average of the four existing questionnaire points, which is 84.675 percent. According to the results, the third point had the lowest score with 79%, followed by the fourth point, which reached the highest score with 88.7%.

Input evaluation

The 14-point questionnaires are utilized within Input Evaluation. The researcher analyzed the ICT knowledge of students using the collected data. It can indicate whether students are prepared to recognize the LMS's features. In addition, the researcher analyzed the exercises or instructions students performed to maximize their use of the developed LMS.

Table 3. *Input evaluation result*

Questionnaire	Score	Total	Category
Q5	90.3%	83.86%	High
Q6	58.1%		
Q7	51.6%		
Q8	80.6%		
Q9	96.8%		
Q10	93.5%		
Q11	93.5%		
Q12	72.6%		
Q13	91.9%		
Q14	93.5%		
Q15	85.5%		
Q16	90.3%		
Q17	87.1%		
Q18	88.7%		

After reviewing the gathered information, the evaluation concluded that the input test results belonged to the "High" group. It is shown by the findings of the average of the fourteen questions already present in the questionnaire, which was 83.86%. According to the findings, the position that came in seventh had the lowest score, coming in at 51.6%, while the position that came in ninth had the highest score of 96.8%.

Process evaluation

In process evaluation, questionnaires with six points of inquiry are deployed. The researcher evaluated the student's technical knowledge regarding the operation of the e-learning platform. The researcher analyzed to see whether the students could access all of the features that the LMS offered.

Table 4. *Process evaluation results*

Questionnaire	Score	Total	Category
Q19	96.8%	90.6%	Very High
Q20	96.8%		
Q21	90.3%		
Q22	83.9%		
Q23	88.7%		
Q24	87.1%		

Based on the data from the evaluation, the score falls into the "Very High" category with an average of 90.6%. The responses to questionnaires 19 and 20, with a score of 96.8%, were deemed to have the best quality data from the process evaluation. On the other hand, the lowest figure is 83.9 percent.

Product evaluation

There are three different points of the questionnaire that are used to conduct the product phase evaluation. The researcher learned whether the LMS could help students in exploring learning sources. In addition, it determined whether the use of LMS could improve communication and interaction between students and instructors during remote learning.

Table 5. *Process evaluation results*

Questionnaire	Score	Total	Category
Q25	95.2%	91.4%	Very High
Q26	93.5%		
Q27	85.5%		

After thoroughly examining the data collected, the result concluded that the product evaluation findings belonged in the "Very High" category. It is demonstrated by the findings of the average of the three points of questions that have already been included in the survey, which was 91.4%. According to the data, the position that came in twenty-seventh received the lowest score, which was 85.5%, while the position that came in fourth received the highest score, which was 95.2%. The position that came in fourth received the highest score was the position that came in fourth.

Discussion

In the first phase of this research, the context was evaluated. The research focused on identifying the students' technological access and facilities. This evaluation sought to determine if using LMS is compatible with the conditions and situations of students. In addition, the researcher investigated the community and ecosystem support for the implementation of e-learning by students. The first and second questionnaires were distributed to determine the availability of amenities and Internet access. In addition, the third and fourth questionnaires were distributed to gain a deeper understanding of the social environment as an ecosystem that can support the implementation of e-learning.

54 of the 62 respondents have gadgets capable of facilitating LMS implementation. Moreover, 52 individuals have Internet subscriptions. It demonstrates that students are highly prepared regarding facilities and access to e-learning. In addition, a "High" rating is given for social support. Forty-nine students indicated that their environment supported the ICT implementation process. In addition, 55 respondents indicated they had a conducive environment for discussing e-learning-related problems. The implementation of e-learning for LMS in the English Language Education Study Program ITP Markandeya has been quite successful. Bada and Jita (2021) and Eze et al. (2018) stated the availability and utilization of adequate technology facilities and internet access are crucial for implementing e-learning.

To evaluate the input process in LMS implementation, it is also essential to know students' technological proficiency. In this section, researchers assess students' proficiency with the LMS's primary hardware, such as laptops, smartphones, tablets, and PCs, and supporting hardware, such as speakers and printers. In addition, it is crucial for the successful implementation of e-learning that students have a general understanding of the LMS and its capabilities.

Although the average of the Input evaluations resulted in "High" results, the sixth and seventh questionnaires scored "Very Low" for indicators of student knowledge in using additional devices, specifically printers, and speakers. Cruz and Catura (2020) stated that it is essential to operate hardware accessories such as webcams, microphones, etc., and hardware and software directly connected to the LMS. The third stage of evaluation is process evaluation. In this phase, the researcher assesses the student's ability to utilize the LMS's features. This skill is crucial for students to acquire to maximize LMS's function in the learning process. Utilizing the assignment upload feature and downloading learning materials receives the highest grade based on the research findings. The lowest value is assigned to the ability to view the outcomes of the instructor's evaluation. According to Chahal and Patel (2021), mastering the LMS's features can increase students' opportunities to engage in online

collaborative groups, professional training, discussions, and communication to facilitate inclusive learning.

Product evaluation is the final phase. Researchers assess the efficacy of LMS concerning students' activities, such as learning activities, investigating learning materials, and communicating with professors. The collected data indicates "Very High" outcomes. Bradley (2021) defined the function of the LMS, three of which are to monitor the development of the learning process, to browse learning materials, and to facilitate effective and efficient communication. Alzahrani (2019) suggested that learning management systems (LMS) should enable learners to communicate without the distraction of being physically separated. Thus, students enrolled in the English Education program at ITP Markandeya Bali can utilize the implemented LMS to their advantage.

This research provides recommendations for achieving continuous development in the future. To enhance evaluation results, particularly in the community support section for the use of ICT, universities can provide counseling or consultation centers that serve as a platform for resolving issues involving ICT, particularly LMS, among students during the context stage. Consultation is essential not only for resolving technical issues but also for encouraging users to utilize the LMS. Brown et al. (2021) identified an essential consultation to encourage and inspire fellow LMS users. With the help of a sharing session led by someone with knowledge or success in using LMS, users encountering difficulties while utilizing e-learning can learn how to achieve success.

In the input evaluation phase, additional recommendations are provided. Specialized training for the use of technology, particularly supplementary instruments for e-learning, must be conducted. Maximizing students' digital literacy skills is crucial for supporting LMS implementation. According to Garlinska et al. (2023), students' e-learning would be enhanced if they could utilize other technological accessories. Students would need web cameras, conversations, microphones, and other IT tools that enable verbal and non-verbal communication for distance learning (Ames et al., 2021).

The category "Very High" was determined to be the process evaluation outcome. However, the researchers also provide suggestions for enhancing the future quality of LMS implementation. To maximize the effectiveness of e-learning for the learning process, it is also crucial to consider the student's familiarity with the LMS's functions. Features are essential considerations for a learning management system. The effectiveness of a system is contingent on the LMS's features. Assignments, gamification, and evaluation; communication tools (chat, forums, and e-mail messages); and productivity tools (uploading assignments or downloading materials) are common LMS features (Kraleva et al., 2019). Students would become active participants by delivering learning resources to learners and providing an environment for effective interaction during the learning process (Araka et al., 2021). Therefore, the recommendations resemble the input-stage recommendations. To improve the quality of the LMS implementation process, it is necessary to conduct training and information-sharing sessions for students on how to use the available features.

In the final phase of evaluation, which is product evaluation, the researcher makes recommendations. Immediate action is required to increase the role of both parties, lecturers, and students, in enhancing two-way communication with the LMS. The extent to which students and instructors utilize the existing LMS to communicate about various learning-

related matters will increase the efficiency of LMS implementation. The instructor can alleviate classroom monotony by utilizing the discussion features in the LMS (such as incorporating chat, video conferencing, and discussion boards) (Hussein & Hilmi, 2021). To maximize learning, it is also recommended to utilize the LMS's discussion features to their fullest potential.

Conclusion

Based on the research findings, the LMS in the ITP Markandeya English Language Education Study Program has been effectively implemented. In the context evaluation, the LMS implementation received a "High" rating of 84.675%. Moreover, an average of 83.86 percent "High" ratings were obtained at the input evaluation stage. In evaluating the procedure, the researcher scored 90.6% (Very High). In the end, the product evaluation yielded a score of 91.4% within the "Very High" category. It was determined that the researcher made four recommendations. To increase students' understanding of technology, particularly the LMS, it is necessary to implement specialized training. In addition, students must be provided with training or practice to improve their ability to use LMS-supporting accessories and existing features. It is done to improve learning efficacy. For learning effectiveness, maximizing the use of the LMS's communication features is also necessary.

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Biographical Notes

NI LUH PUTU NING SEPTYARINI PUTRI ASTAWA is a lecturer at Primakara University, Indonesia, corresponding email: ning@primakara.ac.id

PANDE AGUS ADIWIJAYA is a lecturer at ITP Markandeya Bali, Indonesia