Student Perceptions of the Effectiveness of E-Learning in Higher Education: A Comparative Study of Two Universities in Indonesia and Malaysia

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Abstract:
This study examines students' perceptions of the effectiveness of e-learning in higher education, focusing on the use of Learning Management Systems (LMS) at two universities in Indonesia and Malaysia. The research investigates how e-learning impacts lecture delivery and its overall effectiveness in promoting student engagement and learning outcomes. The study population includes students from the Arabic Language Education Program at a university in Indonesia and the Islamic History and Language Programs at a university in Malaysia, for the 2023-2024 academic year. A random sampling technique was employed, and the sample size was determined using the Slovin formula. Data were collected through questionnaires, observations, and interviews. Data analysis involved calculating the average score of questionnaire responses, which were then presented using tables and graphs. The findings indicate that students from both universities perceive e-learning as highly effective. This suggests that the use of LMS as an instructional tool is viewed positively by students and is considered an effective method for enhancing learning experiences in higher education. The results highlight the potential of e-learning platforms to support academic engagement and improve learning outcomes. The study has significant implications for the continued development of e-learning strategies and offers valuable insights for refining the implementation of online learning environments in higher education.

Abstrak:
Penelitian ini mengkaji persepsi mahasiswa terhadap efektivitas e-learning dalam pendidikan tinggi, dengan fokus pada penggunaan Sistem Manajemen Pembelajaran (LMS) di dua universitas di Indonesia dan Malaysia. Penelitian ini menyelidiki bagaimana e-learning mempengaruhi penyampaian materi kuliah dan efektivitas keseluruhannya dalam meningkatkan keterlibatan mahasiswa dan hasil pembelajaran. Populasi penelitian ini mencakup mahasiswa dari Program Pendidikan Bahasa Arab di sebuah universitas di Indonesia dan Program Sejarah dan Bahasa Islam di sebuah universitas di Malaysia, pada tahun akademik 2023-2024. Teknik pengambilan sampel yang digunakan adalah sampel acak, dan ukuran sampel ditentukan dengan menggunakan rumus Slovin. Data dikumpulkan melalui kuesioner, observasi, dan wawancara. Analisis data dilakukan dengan menghitung skor rata-rata dari jawaban kuesioner, yang kemudian disajikan dalam bentuk tabel dan grafik. Hasil analisis menunjukkan bahwa mahasiswa dari kedua universitas memandang e-learning sebagai sangat efektif. Hal ini menunjukkan bahwa penggunaan LMS sebagai alat pembelajaran dipandang positif oleh mahasiswa dan dianggap sebagai metode yang efektif dalam meningkatkan pengalaman belajar di pendidikan tinggi. Hasil penelitian ini menyoroti potensi platform e-learning dalam mendukung keterlibatan akademik dan meningkatkan hasil pembelajaran. Penelitian ini memiliki implikasi penting

untuk pengembangan strategi e-learning yang berkelanjutan dan memberikan wawasan berharga untuk menyempurnakan penerapan lingkungan pembelajaran daring di pendidikan tinggi.

Introduction

The internet has become an inseparable part of the lifestyle for various segments of Indonesian society. Students, in particular, are the largest group of internet users in Indonesia; however, access to educational content remains limited (Susanty, 2020). This issue requires attention from educators, who must guide students to utilize the internet more effectively within the educational sphere. E-learning is a type of internet application designed to boost student participation in the learning process. It involves the delivery of learning content to students through various platforms such as the internet, intranet, or other computer network systems (Ayus, Gusniwati, & Buhaerah, 2021; Zeng, Chen, & Jin, 2023; Wetsch, Link, Rahe-Meyer, Dumcke, Stock, Böttiger, & Wingen, 2024). This aligns with the perspective of previous researchers, who define e-learning as the utilization of information and computer technologies to design and facilitate learning experiences (Muqorobin & Rais, 2020; Yong, 2024; Han, 2025; Li, Zhou, Liu, & Zan, 2025; Liu, 2025). This definition emphasizes how e-learning tools and technologies are employed to structure, organize, and deliver learning experiences.

The e-learning platform used in academic settings must meet the diverse needs of both instructors and students to address potential challenges (Dospinescu & Dospinescu, 2020), particularly in overcoming the limitations and obstacles often associated with face-to-face learning. E-learning thus emerges as a crucial solution to ensure the continuity of the teaching and learning process, especially in the context of restricted in-person interaction. E-learning provides various benefits, such as allowing students to access course materials and exchange information at their convenience, as well as the integration of multimedia resources that can enrich the learning experience (Irawan & Listyaningsih, 2021).

Lectures conducted through e-learning also present various challenges. Not all students have sufficient access to technological devices or a stable internet connection,

which can hinder their learning experience. Moreover, adapting to this new learning method requires strong digital skills from both students and instructors. A lack of preparation in implementing online learning can lead to difficulties and obstacles, possibly hindering students from attaining the desired learning objectives (Cahyawati & Gunarto, 2020; Divanji, Bindman, Tung, Chen, Castaneda, & Scanlon, 2023; Gómez-Trigueros & Bustamante, 2023; Nikolopoulou, Tsimperidis, & Tsinakos, 2023; Zain-Alabdeen, 2023). Therefore, understanding student perceptions of e-learning implementation is crucial in assessing its effectiveness. Positive student perceptions can enhance motivation and engagement in the learning process, while negative perceptions may obstruct the achievement of learning objectives.

It is essential to examine how students respond to e-learning in their courses. Student perceptions can be influenced by several factors, such as the quality of course material, the effectiveness of the instructor's delivery, ease of access and usability of the e-learning platform, and the availability of adequate technical support. Understanding these perceptions allows educational institutions to identify areas of improvement and develop more effective strategies for implementing e-learning. Previous research has highlighted the importance of factors such as technological infrastructure, institutional policies, as well as how student characteristics contribute to forming their perspectives on e-learning (Sumra, Mumtaz, Mohamed, Haseeb, & Ansari, 2022; O'Connor, Ludgate, Le, Le, & Huynh, 2023).

This study aims to explore how students perceive the implementation of e-learning in the Arabic Language Education Program at a university in Indonesia and the History, Language, Arts, and Islamic Civilization Program at a university in Malaysia. The findings are expected to contribute to a deeper understanding among students and instructors, ultimately enhancing the quality of education in the digital age. Optimizing e-learning implementation can improve student learning outcomes. This aligns with research by Al-Sous, Almajali, Al-Radaideh, Dahalin, & Dwas (2023), Satyawan, Lasmawan, Artanayasa, Swadesi, & Yoda (2023), Shoaib, Sikandar, Yousuf, Parkash, Kazmi, Ahmed, Ahmed, Saleem, & Zaidi (2023), and Yamamoto, Akiyoshi, Kondo, Akioka, Teshima,Yufu, Takahashi, & Nakagawa (2023), which concluded that e-learning, when effectively integrated, can serve as a valuable innovation in education. The more intensively e-learning tools, such as Learning Management Systems, are utilized, the greater the improvement in students' conceptual understanding. Furthermore, the extensive adoption of e-learning improves the quality of education while also expanding access to a broader range of learners, ultimately contributing to improved learning outcomes.

Research Method

The research method used in this study is quantitative descriptive research, which focuses on collecting and presenting data in numerical form, primarily through the use of questionnaires or surveys. The study was conducted with students from the Arabic Language Education Program, Faculty of Tarbiyah and Teacher Training at a university in Indonesia, and the History, Language, Arts, and Islamic Civilization Program, Faculty of Language and Communication at a university in Malaysia, during the 2023-2024 academic year. These two programs represent the research population. The sampling

technique employed is probability sampling, specifically simple random sampling, with a total sample size of 120 students.

The study collected data using a questionnaire, consisting of a series of questions provided to respondents to evaluate their perceptions. The questionnaire covers four main areas: learning management, learning activities, learning completeness, and ease of use. Each question offered four response options: Very Good, Good, Less Good, and Not Good. The questionnaire was administered through Google Forms to facilitate easy access and responses. Prior to its use, the instrument underwent content validity testing, conducted by two experts in the field, to ensure the reliability and relevance of the questions.

Data analysis was performed using descriptive statistics, which involved calculating the average score for each student's response to the questionnaire. These average scores were then presented in tables and graphs. The stages of data analysis include: collecting the data, clarifying the alternative answers provided by respondents, calculating the average score for each aspect (learning management, learning activities, learning completeness, and ease of use), and determining the level of perception based on the average score (Riduwan, 2016).

The following categorization was used to interpret the student perception levels based on the average scores:

Table 1. Categorization of Student Perception Levels

No	Interval	Criteria
1	3.26 – 4.00	Very good
2	2.51 – 3.25	Good
3	1.76 – 2.50	Not good
4	1.00 – 1.75	Not good

This categorization helped measure the effectiveness of e-learning implementation as perceived by the students, providing a clear framework for interpreting the data. Employing this scale allowed for the identification of both strengths and weaknesses in the e-learning experience. which informed further improvements in the learning process.

In summary, the study aimed to assess the overall effectiveness of e-learning based on student perceptions, focusing on key aspects such as course management, engagement in learning activities, completeness of the learning process, and the user-friendliness of the e-learning platform. By analyzing these aspects, the study provided valuable insights into how e-learning could be optimized to improve student outcomes and foster a more effective and engaging learning environment.

Results and Discussion

Perception of Students on the Implementation of E-Learning in Learning Management

This section discusses the perceptions of students from two higher education institutions in Indonesia and Malaysia about the implementation of e-learning, specifically focusing on learning management. Data was collected through questionnaires administered via Google Forms. The results are summarized as follows:

Table 2. Recapitulation of Students' Perceptions of the Arabic Language Education Program (Indonesia) in the Implementation of E-Learning in Learning Management

No	Statement	Average	Category
1	The use of e-learning through LMS as an online learning medium is adjusted to the characteristics of the lecture material.	2.75	Good
2	Ease of accessing storage and delivery of material, assignments, and exam questions in online learning	3.34	Very good
3	The suitability of the material provided by lecturers in each learning using e-learning via LMS with the Semester Learning Plan (RPS)	3.21	Good
4	Clarity of tasks given by lecturers in learning using e-learning via LMS	3.36	Very good
5	Punctuality of lecturers in starting learning using e-learning via LMS	3.17	Good
6	Punctuality of lecturers in ending learning using e-learning via LMS	3.09	Good
7	Lecturer innovation when delivering material in learning using e-learning via LMS	3.18	Okay
	Average	3.16	Good

Table 2 indicates that students from the Arabic Language Education Study Program in Indonesia perceive the effectiveness of e-learning in the aspect of learning management as "Good," with an average score of 3.16. For further details, refer to Figure 1 below:
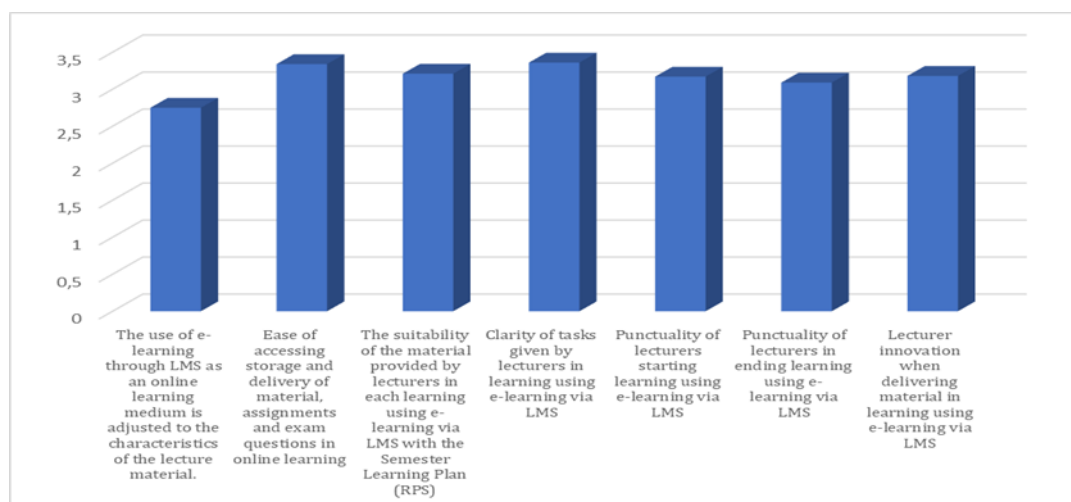

Figure 1. Perception of Students from Indonesia Regarding the Effectiveness of E-Learning in the Aspect of Learning Management

Table 2 shows that students from Indonesia perceived the effectiveness of e-learning in learning management as "Good," with an average score of 3.16.

Table 3. Recapitulation of Students' Perceptions of the Malay Language and Literature Program (Malaysia) in the Implementation of E-Learning in Learning Management

No	Statement	Average	Category
1	The use of e-learning through LMS as an online learning medium is adjusted to the characteristics of the lecture material.	3.12	Good
2	Ease of accessing storage and delivery of material, assignments, and exam questions in online learning	3.51	Very good
3	The suitability of the material provided by lecturers in each learning using e-learning via LMS with the Semester Learning Plan (RPS)	3.32	Very good
4	Clarity of tasks given by lecturers in learning using e-learning via LMS	3.48	Very good
5	Punctuality of lecturers in starting learning using e-learning via LMS	3.20	Good
6	Punctuality of lecturers in ending learning using e-learning via LMS	3.00	Good
7	Lecturer innovation when delivering material in learning using e-learning via LMS	3.65	Very good
	Amount	**23.28**	
	Average	**3.33**	**Very good**

Table 3 shows that students from the Department of Malay Language and Literature in Malaysia rated the effectiveness of e-learning in the aspect of learning management with an average score of 3.33, placing it in the "Very Good" category. A detailed breakdown of student perceptions across the seven statements is presented below:
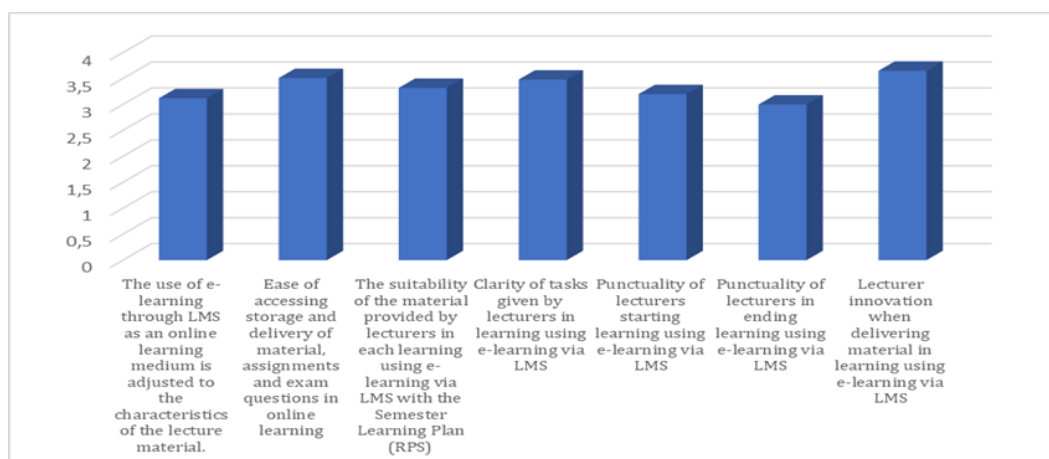

Figure 2. Perception of Students from Malaysia Regarding the Effectiveness of E-Learning in the Aspect of Learning Management

The descriptive analysis of student opinions from the Arabic Language Education Study Program in Indonesia and the Department of Malay Language and Literature in Malaysia indicates that students perceive the use of e-learning in the aspect of learning management as falling within the "Good" and "Very Good" categories. This perception is based on several factors, including students' views on the use of e-learning through the Learning Management System (LMS) as an effective medium for aligning with the characteristics of lecture materials, the ease of accessing and delivering course materials, assignments, and exam questions, as well as the alignment of lecture content with the Semester Learning Plan (RPS). Furthermore, students positively evaluated the clarity of assignments provided by lecturers, as well as the punctuality of lecturers in starting and ending online sessions via the LMS.

These findings align with the results of research by Fajri, Baharun, Muali, Farida, & Wahyuningtiyas (2021), which concluded that: (1) students reported satisfaction with e-learning via platforms like Zoom, as they felt that lectures were not limited by time and space, while maintaining the interactive nature of face-to-face classes; (2) while some students encountered network issues, they generally found the material to be clear and understandable; (3) students found that face-to-face learning, even when facilitated remotely, was effective in promoting comprehension; (4) students affirmed that the material delivered aligned with the learning objectives, as outlined in the course contract and RPS distributed by lecturers; and (5) students acknowledged that course material was delivered in accordance with the specified time allocation, consistent with the schedule and RPS agreed upon by both lecturers and students.

Perception of Students on the Implementation of E-Learning in Learning Activities

In the implementation of e-learning, students from the Arabic Language Education Program in Indonesia reported positive perceptions of their learning activities, with an average score of 3.23, categorizing their experiences as "Good." This assessment was based on responses collected via a Google Form questionnaire. The following table summarizes the seven statements used to assess aspects of learning activities:

Table 4. Recapitulation of Students' Perceptions of the Arabic Language Education Program on the Implementation of E-Learning in the Aspect of Learning Activities

No	Statement	Average	Category
1	Lecturers provide opportunities for students to ask questions and offer opinions during e-learning via LMS.	3.21	Good
2	Lecturers respond to questions raised during e-learning via LMS.	3.78	Very good
3	E-learning via LMS encourages students to actively participate in providing opinions during the learning process.providing opinions during the learning process.	3.06	Good
4	E-learning via LMS facilitates collaboration with other students.	2.98	Good

5	E-learning via LMS encourages students to think more critically.	2.85	Good
6	E-learning via LMS promotes students' independence in exploring information related to course materials.	2.93	Good
7	E-learning via LMS ensures students clearly hear the delivery of course materials.	3.81	Very good
	Amount	**22.62**	
	Average	**3.23**	**Good**

As shown in Table 4, students expressed positive perceptions regarding the effectiveness of e-learning in the context of learning activities. Two indicators—lecturers' responsiveness to questions raised during e-learning sessions via LMS, and the clarity of material delivery via LMS—were rated as "Very Good," while the remaining five indicators were rated as "Good." These findings highlight the students' generally favorable views of e-learning's impact on their engagement in learning activities.For more details, see Figure 3 below:
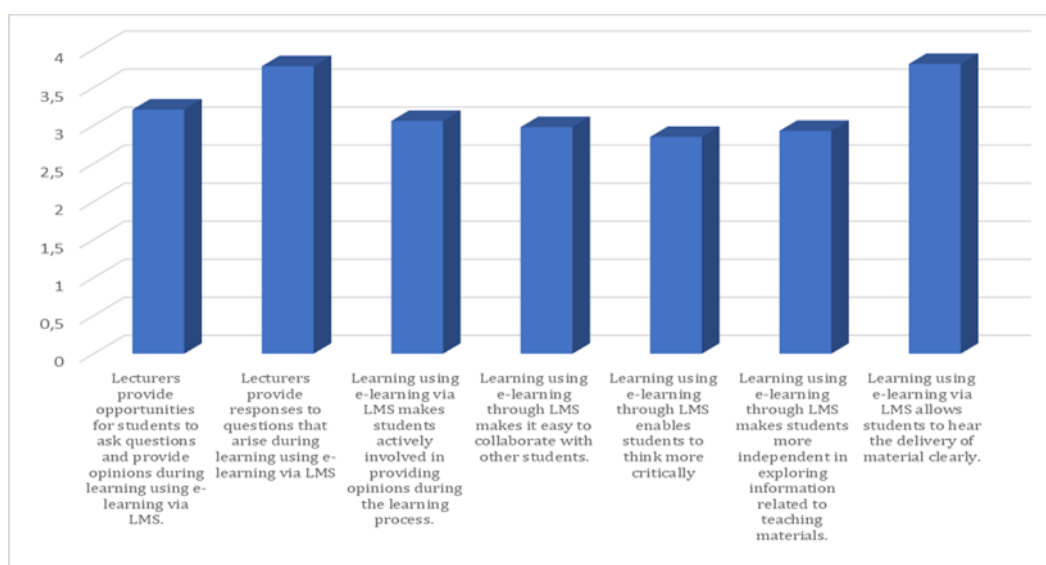

Figure 3. Perceptions of Students from Indonesia Regarding the Effectiveness of E-Learning in Learning Activities

The perception of students from the Department of Language and Literature in a Malaysian university regarding the effectiveness of e-learning in the aspect of learning activities showed very good results, with an average score of 3.56. For more details, see Table 5.

Table 5. Recapitulation of Students' Perceptions of the Language and Literature Department in a Malaysian university on the Implementation of E-Learning in Learning Activities

No	Statement	Average	Category
1	Lecturers provide opportunities for students to ask questions and provide opinions during learning using e-learning via LMS.	3.49	Very good
2	Lecturers provide responses to questions that arise during learning using e-learning via LMS.	3.88	Very good
3	E-learning via LMS makes students actively involved in providing opinions during the learning process.	3.51	Very good
4	E-learning via LMS makes it easy for students to collaborate with each other..	3.49	Very good
5	E-learning via LMS encourages students to think more critically.	3.17	Good
6	E-learning via LMS makes students more independent in exploring information related to teaching materials.	3.47	Very good
7	E-learning via LMS allows students to hear the delivery of material clearly.	3.92	Very good
	Amount	**24.93**	
	Average	**3.56**	**Very good**

As shown in Table 5, there are seven indicators of students' perceptions regarding the effectiveness of e-learning in the aspect of learning activities. Six of these indicators fall into the "Very Good" category, while one indicator is categorized as "Good."See the following picture:
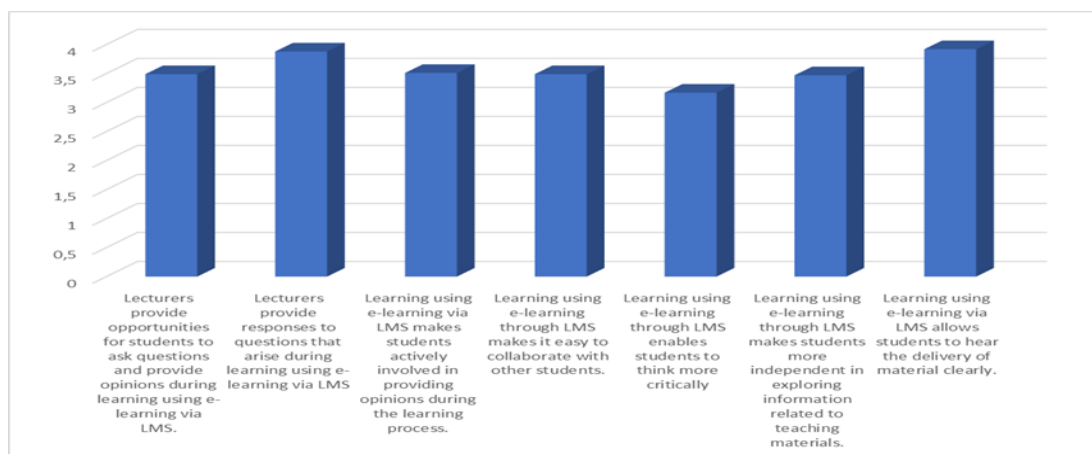

Figure 4. Students' Perceptions from Malaysia Regarding the Implementation of E-Learning in Learning Activities

The findings from the descriptive analysis, based on the opinions of students from the Arabic Language Education Study Program in an Indonesian university and the Language and Literature Department in a Malaysian university, reveal that the use of e-learning in the aspect of learning activities falls into the good and very good categories. This conclusion is supported by students' responses regarding the use of e-learning through Learning Management Systems (LMS) as an online learning medium, which provides ample opportunities for students to actively ask questions and interact with both lecturers and their peers. These findings align with the results of Haand's (2020) study, which highlighted that online learning fosters greater student participation. The majority (40%) of participants in Haand's study indicated that online learning facilitated more active student engagement. The study suggests that online learning platforms enable all students to communicate with lecturers through group forums, which eliminates the need for students to physically raise their hands or vocalize responses. Instead, they can participate in discussions asynchronously or in real time, thereby enhancing student involvement in the learning process. This heightened involvement fosters a more engaging and interactive learning atmosphere.

Perception of Students on the Implementation of E-Learning in Learning Completion Aspects

The students of the Arabic Language Education Program in an Indonesian university, reported their perceptions of e-learning in the aspect of learning completion as being in the good category, with an average score of 3.14. The summary of the data analysis findings is presented in Table 6 below.

Table 6. Recapitulation of Students' Perceptions of the Arabic Language Education Study Program in an Indonesia univeristy in the Implementation of E-learning on the Aspect of Learning Completeness

No	Learning Completion Aspects	Average	Category
1	The tasks given by lecturers in learning using e-learning via LMS can be completed well.	3.18	Good
2	Assignments given by lecturers in learning using e-learning via LMS can be collected on time.	3.03	Good
3	Learning using e-learning through LMS improves students' abilities in cognitive (knowledge) aspects.	3.64	Very good
4	Learning using e-learning through LMS improves students' abilities in affective (attitudinal) aspects.	2.93	Good
5	Learning using e-learning through LMS improves students' abilities in psychomotor (skills) aspects.	2.91	Good
	Amount	**15.69**	
	Average	**3.14**	**Good**

As shown in Table 6, there is one indicator categorized as very good (cognitive abilities) and the remaining indicators are classified as good. The average score of 3.14

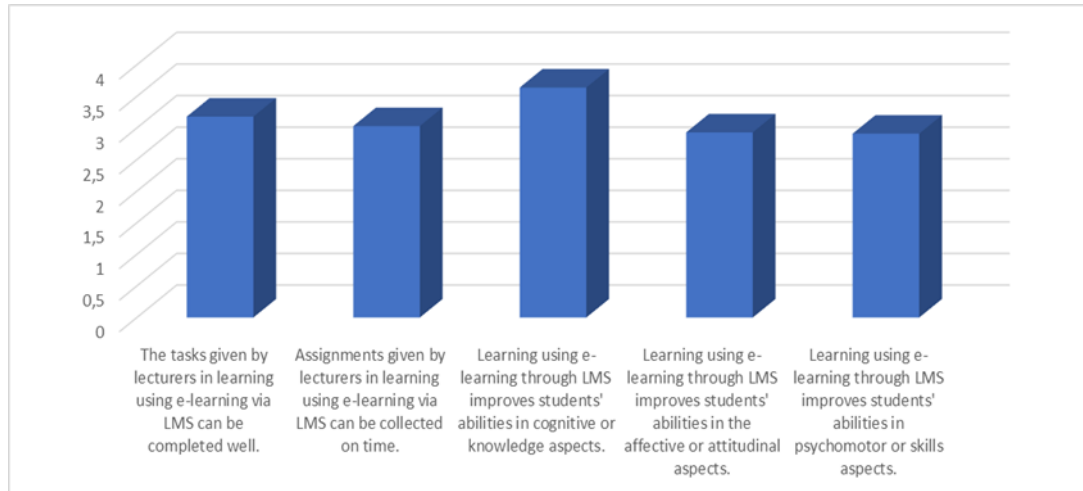places the perception of the Arabic Language Education Program students in the good category.

Figure 5. Students' Perceptions of the Arabic Language Education Study Program in an Indonesian university in the Implementation of E-Learning on the Aspect of Learning Completeness

The students of the Department of Malay Language and Literature, reported very positive perceptions regarding the implementation of e-learning in terms of learning completeness, with an average score of 3.35. The findings from the questionnaire distribution are summarized in Table 7 below:

Table 7. Recapitulation of Students' Perceptions of the Language and Literature Department in Malaysian university in the Implementation of E-Learning on the Aspect of Learning Completeness

No	Learning Completion Aspects	Average	Category
1	The tasks given by lecturers in learning using e-learning via LMS can be completed well.	3.45	Very good
2	Assignments given by lecturers in learning using e-learning via LMS can be collected on time.	3.71	Very good
3	Learning using e-learning through LMS improves students' abilities in cognitive (knowledge) aspects.	3.73	Very good
4	Learning using e-learning through LMS improves students' abilities in affective (attitudinal) aspects.	3.01	Good
5	Learning using e-learning through LMS improves students' abilities in psychomotor (skills) aspects.	2.83	Good
	Amount	**16.73**	
	Average	**3.35**	**Very good**

The responses from students in the Department of Malay Language and Literature, FBK UPSI Malaysia, regarding the implementation of e-learning in the aspect of learning completion are summarized in Table 7. Three indicators were rated as very good, while two indicators were rated as good. For a clearer representation, see Figure 6 below.
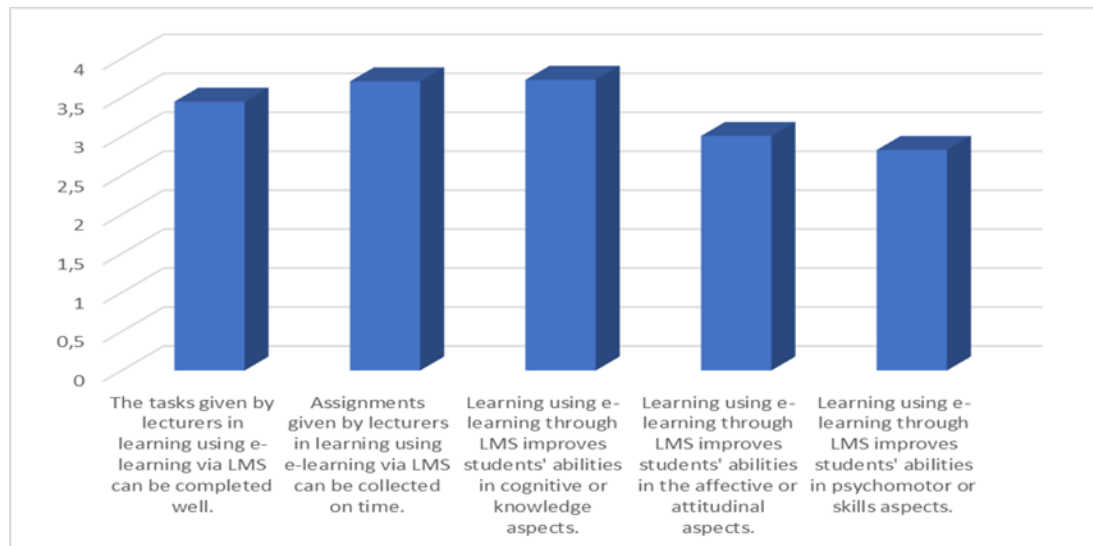

Figure 6. Students' Perceptions of the Language and Literature Department in a Malaysian university in the Implementation of E-learning on the Aspect of Learning Completeness.

The findings from the descriptive analysis, based on the opinions of students in the Arabic Language Education Study Program in an Indonesian university, and the Department of Language and Literature in a , Malaysian university, show that the use of e-learning in the aspect of learning completeness is generally rated as good and very good. This is evident from the students' responses, which indicate that e-learning through LMS has facilitated the completion of assignments and improved their understanding of lecture material, across cognitive, affective, and skills-based aspects. These findings align with the research of Biag AM (Bawanti, 2021), which carried out a randomized trial on online Physics learning for Class X students at a school in Aurangabad, India. The findings revealed that online teaching outperformed traditional classroom methods in enhancing academic achievement.

Perception of Students on the Implementation of E-learning in Aspects of Ease of Use

The results of the analysis show that students from the Arabic Language Education Program in Indonesia rated the ease of use of e-learning as good, with an average score of 3.14. Below is a summary of the student responses regarding the ease of use of e-learning.

Table 8. Recapitulation of Students' Perceptions of the Arabic Language Education Program in Indonesia in the Implementation of E-learning in the Aspect of Ease of Use

No	Aspects of Ease of Use	Average	Category
1	The LMS provides benefits according to the needs of lecturers in organizing the learning process.	3.18	Good
2	The LMS is easily accessible and effective in supporting learning.	3.12	Good
3	The features in the LMS are complete, easy to access and understand, making it easy to upload assignments, discuss, and work on assignments.	3.21	Good
4	The LMS helps students access materials easily.	3.04	Good
5	The use of e-learning through the LMS makes the implementation of lectures easier and smoother.	3.14	Good
	Amount	**15.69**	
	Average	**3.14**	**Good**

As seen in Table 8, all aspects related to ease of use were rated as good by the students of the Arabic Language Education Program. The following Figure 7 shows these perceptions visually.
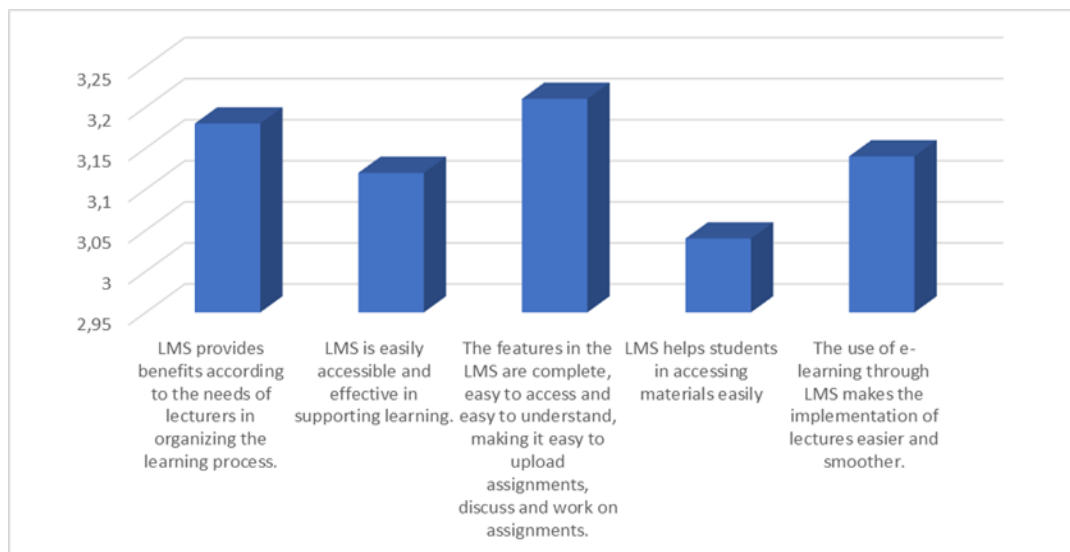

Figure 7. Students' Perceptions of the Arabic Language Education Program in Indonesia in the Implementation of E-learning in the Aspect of Ease of Use

On the other hand, students from the Language and Literature Program in a Malaysian university rated the implementation of e-learning in terms of ease of use more positively, with an average score of 3.58, categorizing their perceptions as very good. Below is a summary of the findings from these students.

Table 9. Recapitulation of Students' Perceptions of the Department of Malay Language and Literature in the Implementation of E-learning in the Aspect of Ease of Use

No	Aspects of Ease of Use	Average	Category
1	The LMS provides benefits according to the needs of lecturers in organizing the learning process.	3.53	Very good
2	The LMS is easily accessible and effective in supporting learning.	3.20	Good
3	The features in the LMS are complete, easy to access and understand, making it easy to upload assignments, discuss, and work on assignments.	3.71	Very good
4	The LMS helps students access materials easily.	3.64	Very good
5	The use of e-learning through the LMS makes the implementation of lectures easier and smoother.	3.83	Very good
	Amount	**17.91**	
	Average	**3.58**	**Very good**

Table 9 shows that the perception of students from the Malay Language and Literature Department in Malaysia regarding the effectiveness of e-learning in terms of ease of use is classified as very good, with an average score of 3.58. See Figure 8 below.
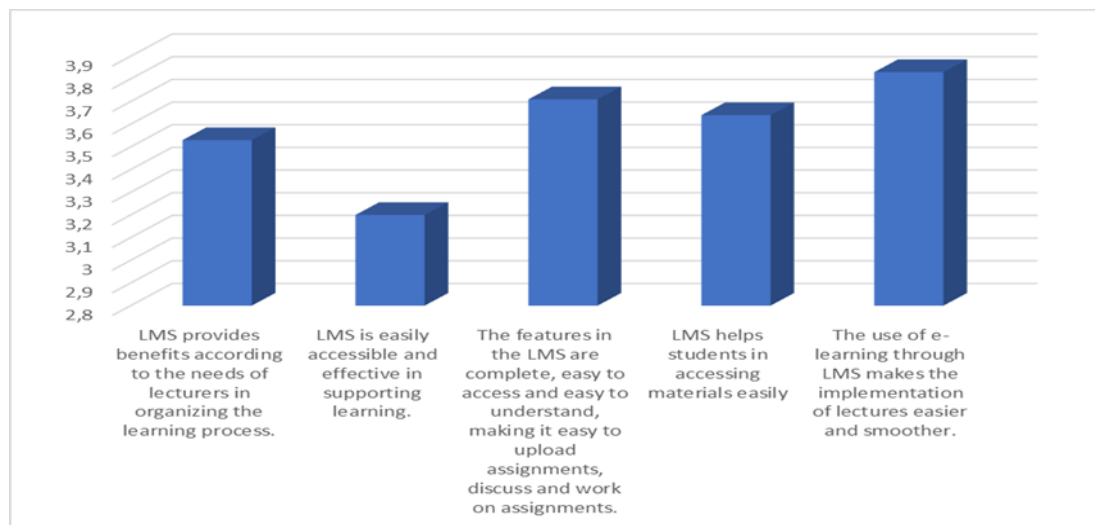

Figure 8. Perceptions of Students of the Malay Language and Literature Department in the Implementation of E-learning in the Ease of Use Aspect

The perceptions of students from both programs regarding the ease of use of e-learning were classified into the good and very good categories. Both groups agree that the e-learning platforms (LMS) used in their respective programs are easy to access, effective in supporting learning, and provide comprehensive and user-friendly features. These platforms allow students to upload assignments, engage in discussions, and download materials with ease. The login process is also simple, requiring just an admin ID and password, making it convenient for students to access learning materials and participate in online activities. This observation aligns with the findings of (Aldosemani,

2023; Fadillah, Ganefri, Yulastri, & Hidayat, 2023; Habib, 2023), who noted that a Learning Management System (LMS) should offer self-service capabilities, allowing students to register and access content independently or with minimal guidance. It is also in line with Elyas (2018), who emphasized the importance of simplifying the user interface to enhance students' efficiency in using the system and reducing the learning curve for accessing educational materials.

Conclusion

The perception of students from the Arabic Language Education Study Program in Indonesia and the Malay Language and Literature Department in Malaysia regarding the effectiveness of implementing e-learning shows positive results. In terms of learning management, students from both programs rated the effectiveness of e-learning in the good category, with an average score of 3.25. Regarding the learning activity aspect, students rated e-learning in the very good category, with an average score of 3.40. In the learning completion aspect, the perceptions remained in the good category, with an average score of 3.25. Lastly, students rated the ease of use of e-learning in the very good category, with an average score of 3.36. Overall, students from both the Arabic Language Education Study Program and the Malay Language and Literature Department found the use of e-learning in lectures to be effective. These findings suggest that students perceive e-learning as a valuable tool for supporting their learning experience in various aspects, including learning management, activity participation, completion of tasks, and ease of use.

However, this study has certain limitations, that is a relatively small sample size comprising students from the Arabic Language Education program in Indonesia and the Malay Language and Literature department in Malaysia. These findings, therefore, may not be fully representative of all students in similar programs or contexts. The findings of this study carry significant implications for LPTK and Study Program Heads, especially those in the Arabic Language Education program and the Malay Language and Literature. The study recommends that lecturers continue to incorporate e-learning into their teaching methods, ensuring that e-learning platforms are properly utilized. E-learning will be more effective if lecturers and students are provided with appropriate training on using e-learning applications. Lastly, the study recommends expanding the research to include a broader range of subjects, more diverse materials, and more relevant methodologies, which would help generalize the findings and provide more comprehensive insights into the use of e-learning in higher education.

Acknowledgments

publication, the institution typically offers reimbursement funds once the article has been published.

Ethical Statement

This study was carried out in accordance with established ethical standards to protect the rights, safety, and well-being of all participants. Prior to the commencement of the research, all necessary ethical approvals and permits were obtained. The research adhered to both institutional and international ethical guidelines, ensuring transparency, integrity, and the highest standards of research conduct.

CRediT Authorhip Contribution Statement

- **Author 1:** Conceptualization, Investigation, Writing – Original Draft.
- **Author 2:** Methodology, Formal Analysis, Data Curation, Writing – Review & Editing.
- **Author 3:** Resources, Supervision, Funding Acquisition.
- **Author 4:** Resources, Visualization, Project Administration.

Conflict of Interest

The authors of this manuscript declare that they have no conflict of interest.

Data Availability

The data for this study may be obtained from the corresponding author upon reasonable request.

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