The Effectiveness of a Learning Management System (LMS) in the Learning Process of Mekongga Regional Language

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ABSTRACT

Mekongga Regional Language is essential in cultural heritage preservation; however, there are still challenges in the learning process because of limited resources and accessibility. This research examines the effectiveness of a Learning Management System (LMS) in learning the Mekongga Regional Language. The Research and Development method was used in this research, along with the ADDIE (Analyze, Design, Development, Implementation, and Evaluation) model approach. The first stage, Analyze, was carried out to understand the needs and requirements for learning. In the Design stage, an LMS is designed based on the results of the preceding analysis. The following stage is Development, in which the LMS system is built based on the design that has been designed. The LMS system is introduced to groups of Mekongga Regional Language students and teachers during the Implementation stage. They are given training on using the platform and asked to engage in the learning process through the LMS. The final stage is Evaluation, which assesses the effectiveness of the LMS. Observation, questionnaires, and interviews were used to collect data. The results indicated that implementing a Learning Management System with an ADDIE method approach can improve the effectiveness of Mekongga Language learning.

Keywords: learning management system, mekongga regional language, ADDIE method, learning effectiveness, sikongga, curriculum development

INTRODUCTION

Mekongga Regional Language, like other regional languages, has an essential cultural value and identity for its people (Sueca, 2020). Regional Language preservation is becoming increasingly important in this age of globalization to ensure that cultural legacy is preserved and handed to future generations (Baidawi & Dewi, 2019). However, the challenges of teaching and learning these regional languages cannot be overlooked (Fathurrozak, 2021). Limited resources, lack of teaching materials, and the geographical distance separating some learners' communities are obstacles to maintaining the continuity of this regional language.

Furthermore, the Mekongga Regional Language plays a central role in preserving a community's cultural identity and identity (Ramdhan & Budiman, 2018). The dominance of international languages often threatens the sustainability of regional languages amid modernization and globalization (Astawa, 2017). The preservation and teaching of regional languages, including the Mekongga Regional Language, is becoming increasingly urgent to preserve cultural origins and respect ancestors' legacy (Berlianty, 2018). However, challenges such as a lack of learning resources, limited facilities, and geographical constraints impede this effort.

The increasingly rapid development of technology is in line with the increasingly developing quality of education at all levels. Online or online learning through e-learning, which is usually called a Learning Management System (LMS), is a reflection of the quality of education providers, which must be able to utilize the role of technology to be able to develop distance learning models. LMS development must be designed and developed optimally to support all the needs of LMS users, namely students, educators, and educational staff (Hardika, 2021).

In the 21st century, educators are utilizing emerging technologies to develop not only the knowledge of graduates but also their soft skills to enhance competencies parallel with employer requirements. Technology, particularly the Learning Management System (LMS), has demonstrated the potential to respond to these challenges by providing learning solutions that are more flexible, engaging, and

affordable (Cavus, 2013). LMS is a technology-based platform that allows teachers and students to engage in online learning (Gaol et al., 2022). The ADDIE model (Analyze, Design, Development, Implementation, and Evaluation) is a structured approach for designing, developing, and implementing technology-based learning solutions such as LMS (Rusdi et al., 2022).

In this context, this research aims to investigate the effectiveness of implementing a Learning Management System in the Mekongga Regional Language learning process using the ADDIE method (Sunarti, 2022). This research is expected to provide a more in-depth understanding of how LMS technology can improve Mekongga Regional Language learning and solve existing challenges (Khunaifi & Supriyadi, 2022).

In recent decades, the use of technology in education has been a significant focus (Haleem et al., 2022). However, in the context of distinct regional languages, implementing technology in learning requires further research (Shadiev & Yang, 2020). Therefore, this research has the potential to provide not only practical advantages but also theoretical contributions to the effectiveness of technology in preserving and teaching regional languages (Nurjanah et al., 2020).

The LMS is carried out in the Design phase (Gunawan et al., 2020), where the curriculum structure, learning content, and interactive features are planned with students' requirements and learning objectives in mind. The Development phase entails the physical development of the LMS based on the design that has been prepared (European Training Foundation., 2009). After that, the LMS is implemented into an actual learning environment where Mekongga Regional Language students and teachers can interact with this platform directly (Prastowo & Suyanto, 2022).

The final evaluation phase allows a complete evaluation of the LMS's effectiveness in enhancing the learning of the Mekongga Regional Language (Segers & Dochy, 2006). This research aims to provide insight into the impact of the LMS in the context of regional language education by gathering data from participants, including teachers and students, regarding levels of engagement, learning efficiency, and changes in language comprehension.

Thus, this research aims to focus not only on the application of technology but also on the broader cultural and educational impacts that have important implications in efforts to sustain and vitality regional languages as an integral part of human cultural heritage. It is intended that the results of this research will provide practical guidelines for teaching regional languages with technology and make a meaningful contribution to efforts to preserve regional languages amid globalization. Finally, it is hoped that through this research, an appropriate strategy for improving Mekongga Regional Language learning through the use of a Learning Management System will be discovered (Agustina & Nandiyanto, 2021), as well as recommendations for the development and implementation of similar technologies in the context of other regional languages.

METHOD

This research used the ADDIE model methodology (Branch, 2009a), which stands for Analyze, Design, Development, Implementation, and Evaluation. The ADDIE model is a systematic approach to developing and implementing technology-based learning solutions such as the Learning Management System (LMS). The following is a more detailed explanation of each stage in the ADDIE model:

1. Analyze: The ADDIE method's first stage is to thoroughly examine the context and learning needs (T Dousay & R Logan, 2011). In the context of this research, the analysis entails a thorough understanding of the Mekongga Regional Language, the characteristics of the students, the learning problems encountered, and the learning objectives to be achieved. This analysis aids in identifying the needs that the LMS-based learning solution needs to fulfill (Mariam & Nam, 2019).

2. Design: After the analysis, the design stage is conducted to design the overall learning plan (Wahyudin et al., 2022). This design incorporates several aspects, including curriculum structure, learning content, teaching methods, student-teacher interaction, and LMS features. This stage's primary purpose is to describe how learning will be delivered through the LMS (Hua, 2016).

3. Development: At this stage, based on the design, the actual LMS system is developed (Budiantara et al., 2023). To support the learning of the Mekongga Regional Language requires creating learning modules, setting up the platform, providing interactive content, online exams, discussion forums, and other features. This development stage ensures that the LMS meets the goals and requirements initially identified (Nadiyah & Faaizah, 2015).

4. Implementation: After the LMS is developed, the implementation stage involves implementing it into use in an actual learning environment (Astuti, 2019). The LMS is introduced to teachers and students, who receive training on how to use it. Then, this LMS platform is used to perform Mekongga Regional Language learning. This stage ensures that the LMS can seamlessly integrate with the learning process (Nguyen, 2023).

5. Evaluation: The evaluation stage is where the LMS's effectiveness in accomplishing learning goals (Andrew, 2019). Data is gathered from teachers and students through observation, questionnaires, interviews, and student performance measurements. This evaluation assesses whether the LMS successfully improved the quality of Mekongga Regional Language learning by the previously set objectives (Zhang, 2020).

The ADDIE model offers a systematic and structured approach to creating, developing, and deploying technology-based learning solutions. It ensures that the solution is appropriate for the context and needs and allows for continual improvement through evaluation. In this research context, the ADDIE model guides the development and implementation of a Learning Management System in Mekongga Regional Language learning to obtain more effective and sustainable results. The following are the advantages of the ADDIE Model:

1. Systematic and Structured: The ADDIE model provides a systematic and structured approach to designing learning solutions. Each stage plays a particular role in ensuring that the result satisfies the learning goals (Jurado Soto & Martos Eliche, 2022).
2. Focus on Evaluation: The ADDIE model puts evaluation as the key stage. This ensures that the solution generated is considered in terms of design and development and properly measures its success in obtaining learning objectives (Rusdi et al., 2022).
3. Flexibility: Despite having a set sequence of stages, the ADDIE model can be tailored to specific needs and contexts. It enables the model to be used in a variety of learning projects.
4. Involving Stakeholders: Each stage of the ADDIE model necessitates the participation and contribution of numerous parties, including teachers, students, developers, and the school's management. It ensures that the resulting solution fulfills their expectations and needs (Branch, 2009).
5. Opportunity for Improvement: The evaluation conducted in the final stage of the ADDIE model provides an opportunity to refine and improve the learning solution. It ensures that the learning quality is continuously improved (Martatiyana et al., 2023).

Meanwhile, the ADDIE model has the following disadvantages:

1. Time and Cost: The ADDIE model's implementation can take a long time and many resources. Each stage necessitates a significant effort, particularly in development and evaluation (Spatioti et al., 2022).
2. Overdesign Risk: A detailed design process may result in overdesign, in which the learned solution becomes overly complex or redundant, especially if the initial analysis is inappropriate (Berenice, 2022).
3. Not Considering the Cultural Context: The ADDIE model does not explicitly consider aspects of culture or local context in the learning process. It can be a drawback if the solution generated is inappropriate for a particular cultural environment (Hidayat & Nizar, 2021).

The effectiveness of the ADDIE model has been proven in developing practical and engaging teaching modules. In a study conducted by (Lee, 2006) adopting the ADDIE model in analyzing the needs and interests of students, the model was identified as very effective and efficient in attracting and motivating students in their learning (Suratnu, 2023).

Although the ADDIE model has some disadvantages, its advantages, such as its structured approach, emphasis on evaluation, and adaptability, keep it one of the most widely used approaches in developing technology-based learning solutions, including the Learning Management System.

FINDINGS AND DISCUSSION
Findings
This research demonstrates that the design of a Learning Management System (LMS) for learning the Mekongga Regional Language positively impacts learning effectiveness from using the ADDIE model. The name of LMS is Sikongga. The study's results indicate that the ADDIE approach can improve the quality of learning in the LMS, particularly for materials in the Mekongga Regional Language. This finding confirms that ADDIE-based development strategies can provide tangible benefits in language learning contexts.

In the process, the Analysis Stage reveals an in-depth view of the barriers and needs in Mekongga Regional Language learning. These analysis results provide a solid foundation for designing appropriate and relevant learning solutions. Thus, this analysis step is critical in establishing a solid foundation for designing effective learning solutions.

The Design Phase is the basis for developing a Learning Management System (LMS) that appropriately meets the context and learning needs. In addition to designing a relevant curriculum structure, this stage also includes selecting teaching methods and integrating interactive features to improve learning attraction. As a result, this design process holistically shapes the LMS framework, enabling a more

engaging and practical learning experience.

In the development stage, the LMS design is implemented in a tangible physical form. The learning modules, content, and features developed in this stage collectively create an effective digital learning ecosystem. The result of this development will be the foundation for an interactive and practical learning experience within the LMS platform.

The LMS is introduced into an active learning environment in the Implementation Stage. Teachers and students are given training so they can make the most of the platform to maximize its utilization. This step is critical to ensuring the effectiveness and optimal adoption of this digital learning system.

The evaluation phase provides an overall view of the LMS's achievement in meeting the established learning objectives. The extent to which the LMS can deliver the intended impact can be determined by analyzing the data collected by this evaluation. The evaluation results serve as an essential guideline for further development and improvements in the context of digital learning.

The ADDIE model's implementation has a positive impact but also presents several challenges that must be addressed. The LMS's success in improving the learning process provides concrete evidence that systematic approaches such as ADDIE effectively overcome the limits associated with regional language learning. This finding confirms that structured efforts in LMS development have great potential to provide practical solutions in the field of education.

Nonetheless, technical challenges such as limited access to the internet and students' level of technology skills necessitate solutions for a more seamless LMS implementation. Furthermore, tailoring the LMS to the local culture and learning context is critical to ensuring the platform's optimal relevance and impact in the learning process. Overcoming these constraints will strengthen the value and effectiveness of LMS implementation.
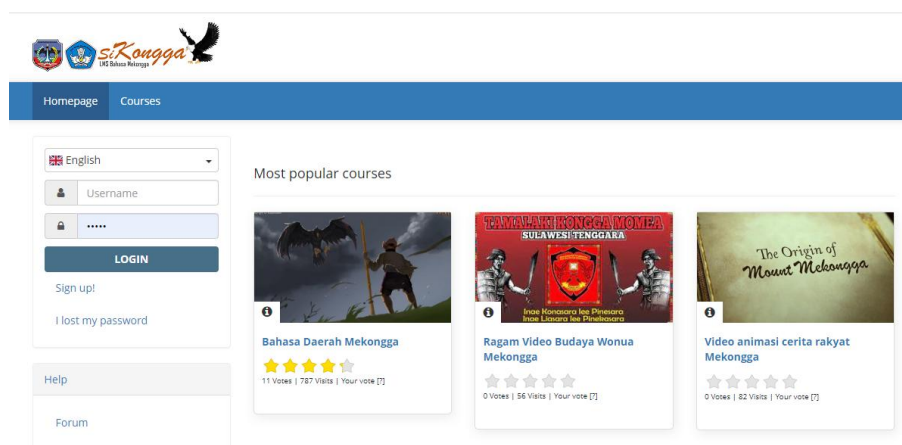

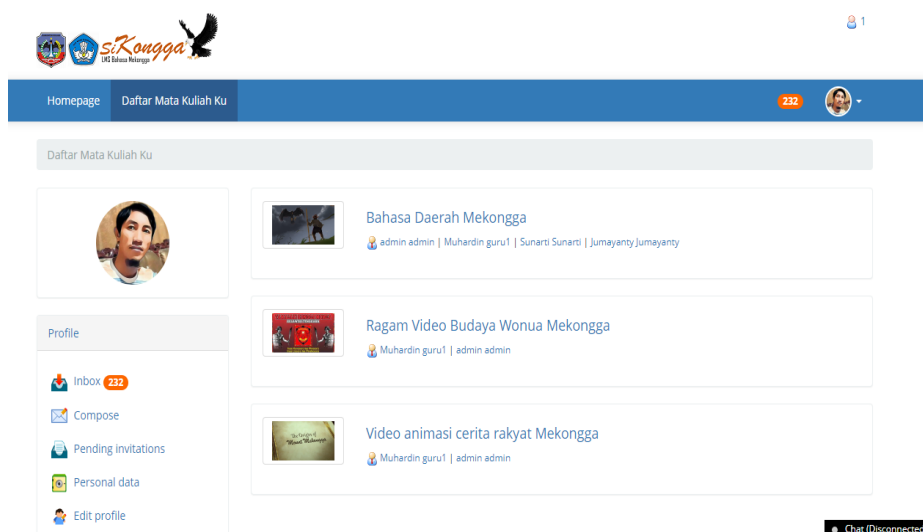**Figure 1.** The front page of the LMS Sikongga developed from the ADDIE model
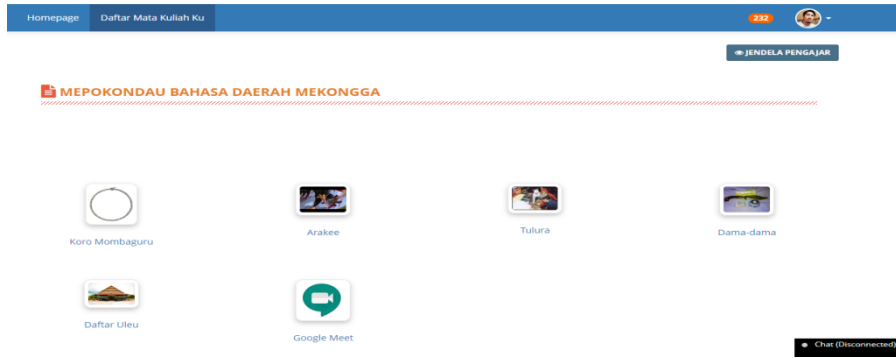

Figure 2. Subjects list page
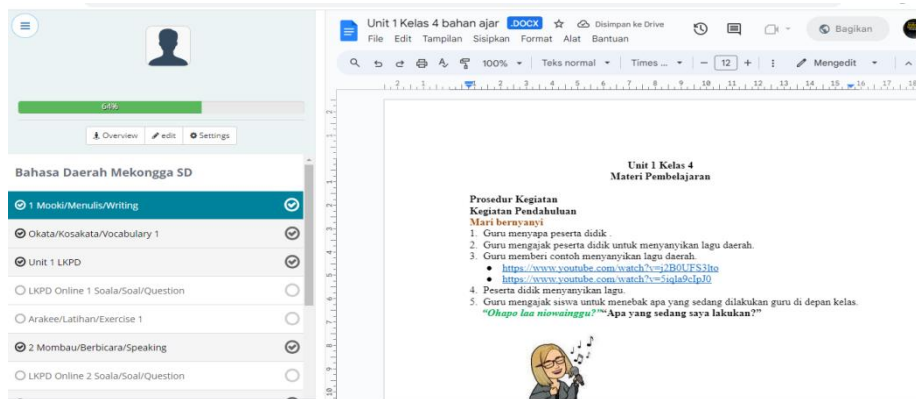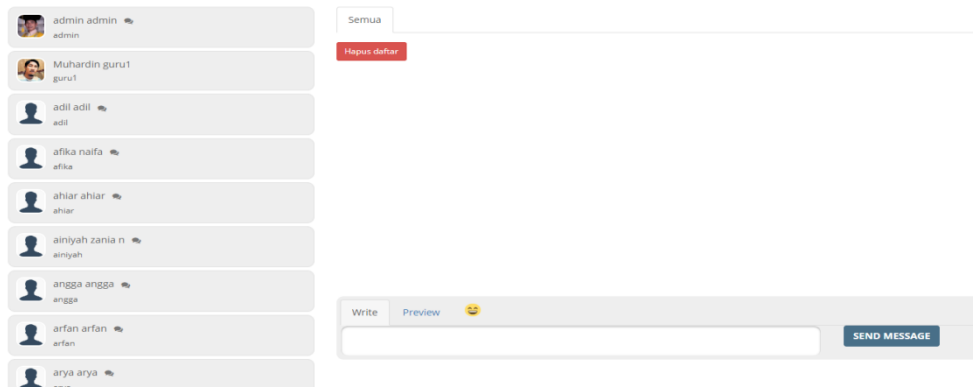
Figure 3. Subject menu

Figure 4. Learning materials
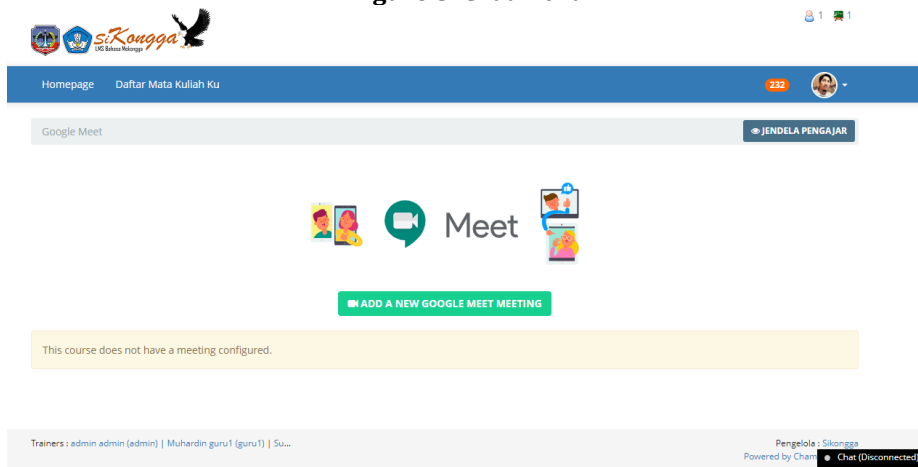

Figure 5. Chat menu
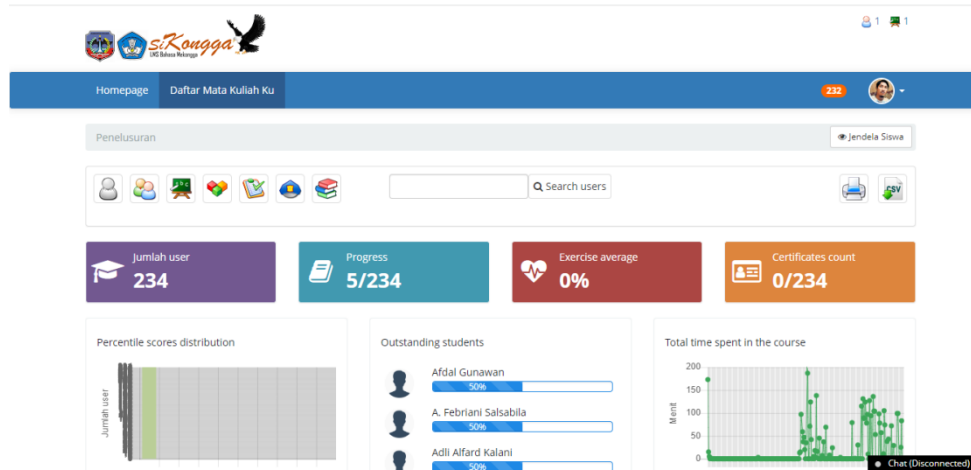

Figure 6. Online meeting menu

Figure 7. Learning progress reports

This research showed that the ADDIE model successfully designed, developed, and implemented an LMS for Mekongga Regional Language learning. These results guide the development of learning-based technology solutions to preserve regional languages and local cultures. Regardless of success, continuous efforts in developing and maintaining the LMS are required to ensure that the benefits persist in the long term.

DISCUSSION

The effectiveness of learning the Mekongga Regional Language can be seen in the findings obtained from the questionnaire, which includes responses to content, appearance, feedback, assessment, and Sikongga LMS personalization.
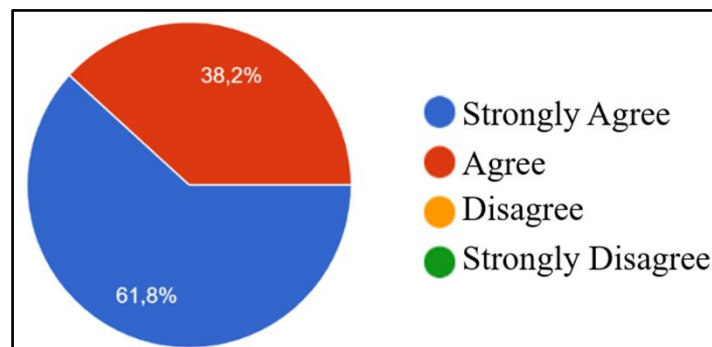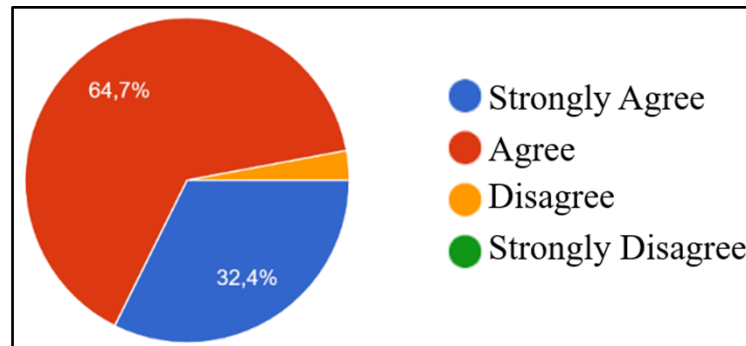

Graph 1. Responses on the content coverage of the learning materials

According to the data presented above, it can be explained that 61.8% of respondents strongly agree, and 38.2% agree that the content of learning materials has covered various important aspects of the Mekongga Regional Language. In the meantime, no respondents chose to either disagree or strongly disagree. It demonstrates that the LMS built has accommodated the needs for learning the Mekongga Regional Language.
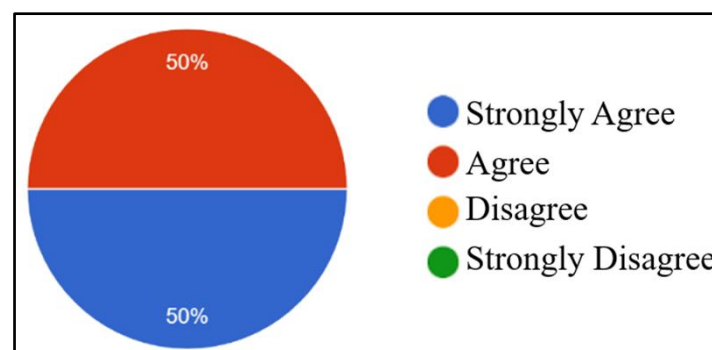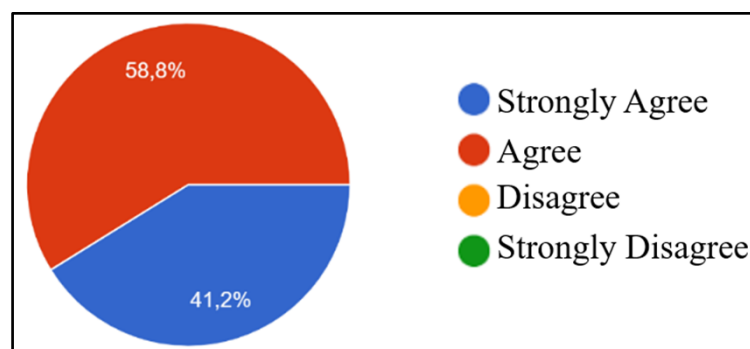

Graph 2. Data on understanding of learning materials

According to the data presented above, it can be explained that 50% of respondents strongly agree, and 50% agree that the learning content has assisted respondents in understanding grammar, vocabulary, and cultural elements in the Mekongga Regional Language. In the meantime, no respondents chose to either disagree or strongly disagree. It demonstrates that the built LMS can give learning related to grammar, vocabulary, and cultural elements in the Mekongga Regional Language.
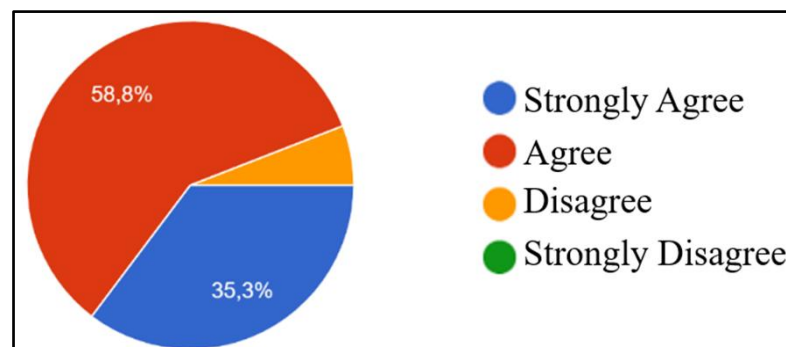
Graph 3. Responses on the depth of learning materials

According to the data presented above, it can be explained that 32% of respondents strongly agree, 64.7% agree, and 2.9% disagree that the learning materials in this model have sufficient completeness and depth. In the meantime, no respondents chose to disagree strongly. It demonstrates that the developed LMS has sufficient completeness and depth of material.

Graph 4. Responses on the Mekongga Regional Language's uniqueness and authenticity
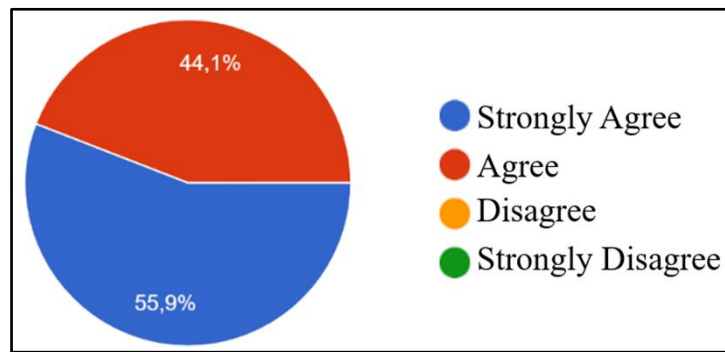
According to the data presented above, it can be explained that 41.2% of respondents strongly agree, and 58.8% agree that the learning materials in this model have succeeded in preserving the authenticity and uniqueness of the Mekongga Regional Language. In the meantime, no respondents chose to either disagree or strongly disagree. It demonstrates that the LMS developed has successfully preserved the authenticity and uniqueness of the Mekongga Regional Language.

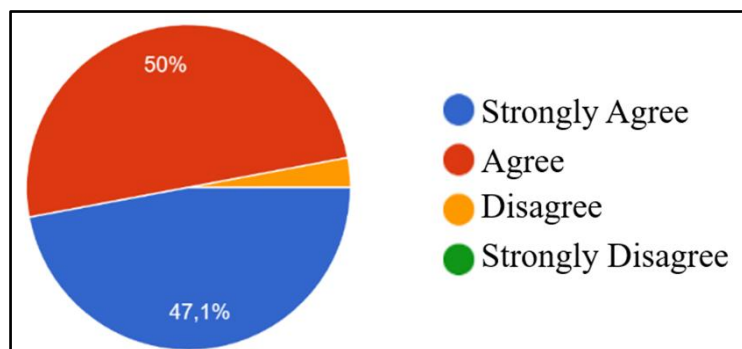**Graph 5.** Responses on LMS interface appearance

According to the data presented above, it can be explained that 35.3% of respondents strongly agree, 58.8% agree, and 5.9% disagree that the developed LMS interface has an easy-to-understand and appealing appearance. In the meantime, no respondents chose to disagree strongly. It demonstrates that

the developed LMS has an easy-to-understand and entertaining interface appearance.


Graph 6. Responses on audiovisuals in the LMS

According to the data presented above, 55.9% of respondents strongly agree, and 44.1% agree that the use of images, videos, and other visual elements in the LMS aids in understanding the Mekongga Regional Language. In the meantime, no respondents chose to either disagree or strongly disagree. It demonstrates that the developed LMS has utilized images, videos, and other visual elements to aid understanding of the Mekongga Regional Language.
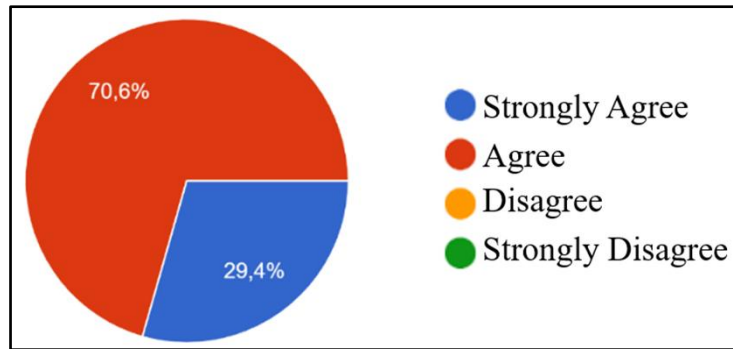

Graph 7. Responses on LMS design

According to the data presented above, it can be explained that 47.2% of respondents strongly agree, 50% agree, and 2.8% disagree that the design of this LMS display has supported a fun and organized learning experience. In the meantime, no respondents chose to disagree strongly. It demonstrates that the LMS's appearance design supports an enjoyable and organized learning experience.
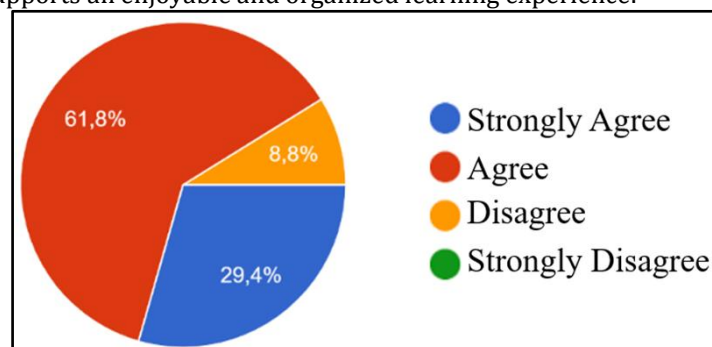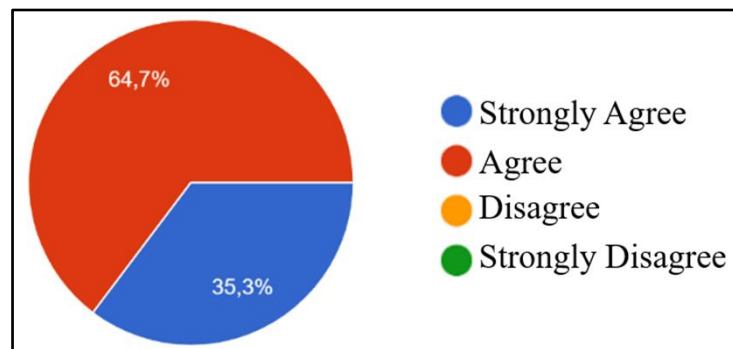

Graph 8. Responses on LMS navigation and accessibility

According to the data presented above, it can be explained that 29.4% of respondents strongly agree, 61.8% agree, and 8.8% disagree that the overall appearance of this LMS model facilitates navigation and accessibility to learning content. In the meantime, no respondents chose to disagree strongly. It demonstrates that the overall appearance of this LMS model has made it easier to navigate and access learning content.
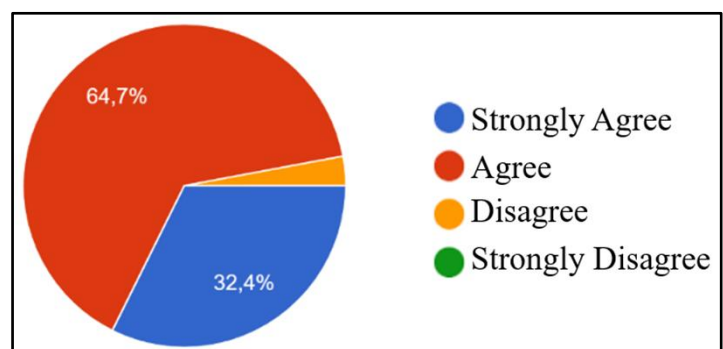
Graph 9. Responses to feedback on exercises

According to the data presented above, it can be explained that 29.4% of respondents strongly agree, and 70.6% agree, that the feedback system on assignments and exercises in the LMS aids respondents' understanding. In the meantime, no respondents chose to either disagree or strongly disagree. It demonstrates that the developed LMS has accommodated a feedback system on assignments and exercises that can aid respondents' understanding.
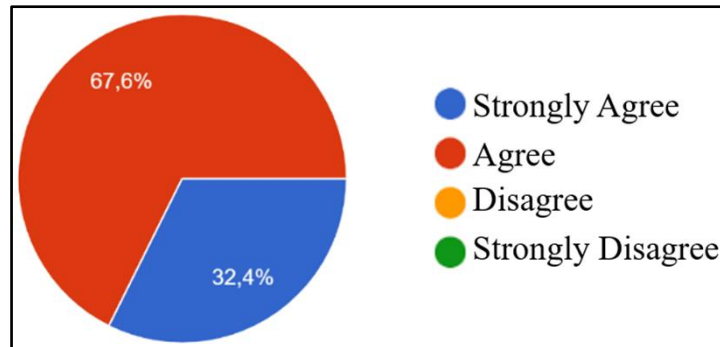

Graph 10. Responses on feedback and understanding of the mekongga regional language

According to the data presented above, it can be explained that 35.3% of respondents strongly agree, and 64.7% agree that the feedback that has been provided helps respondents enhance their understanding of the Mekongga Regional Language. In the meantime, no respondents chose to either disagree or strongly disagree. It demonstrates that the feedback given has assisted responders in improving their comprehension of the Mekongga Regional Language.

Graph 11. Responses on the assessment given
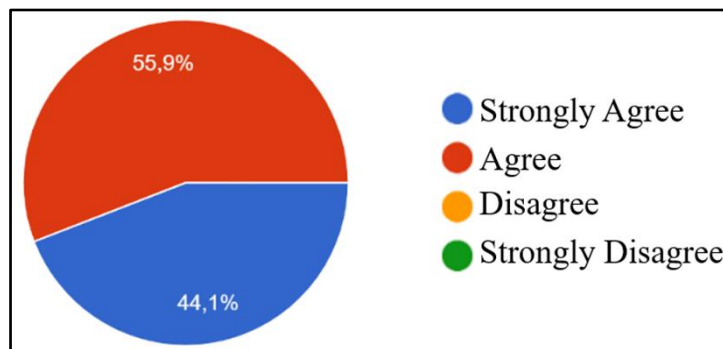
According to the data presented above, it can be explained that 32.4% of respondents strongly agree, 64.7% agree, and 2.9% disagree that the assessment given is fair and accurate to the respondent's learning performance. In the meantime, no respondents chose to disagree strongly. It demonstrates that the assessment given is fair and accurate regarding the respondent's learning performance.
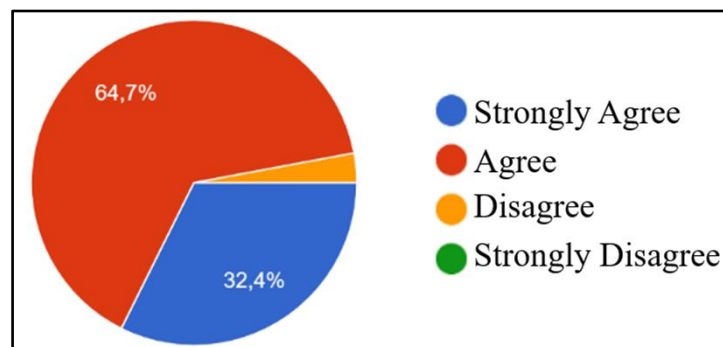
Graph 12. Responses on feedback and learning motivation

According to the data presented above, it can be explained that 32.4% of respondents strongly agree, and 67.6% agree that the feedback and assessment in this LMS motivate respondents to continue learning and interacting with learning materials. In the meantime, no respondents chose to either disagree or strongly disagree. It demonstrates that the feedback and assessments in this LMS motivate respondents to keep learning and interacting with the learning materials.


Graph 13. Responses on the content's appropriateness to the level of understanding

According to the data presented above, it can be explained that 44.1% of respondents strongly agree, and 55.9% agree, that this LMS can customize learning content to the level of understanding and learning speed of respondents. In the meantime, no respondents chose to either disagree or strongly disagree. It demonstrates that the LMS can tailor the learning content to the respondents' level of comprehension and learning speed.

Graph 14. Responses on personalization features

According to the data presented above, it can be explained that 32.4% of respondents strongly agree, 64.7% agree, and 2.9% disagree that personalization features such as progress tracking and supplementary content recommendations are beneficial. In the meantime, no respondents chose to disagree strongly. It demonstrates how helpful personalization features like progress tracking and supplementary content recommendations are.
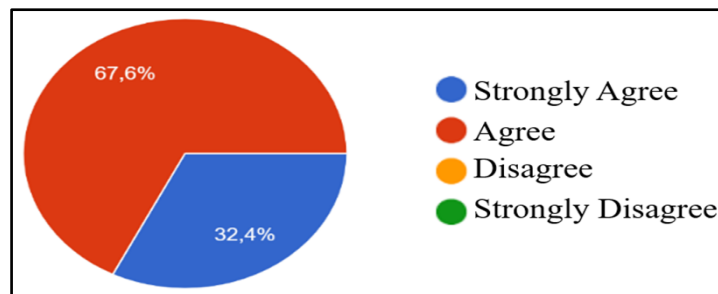
Graph 15. Responses to the learning experience

According to the data presented above, it can be explained that 32.4% of respondents strongly agree, and 67.6% agree that this LMS gives a more individualized learning experience and is based on the respondents' learning style. In the meantime, no respondents chose to either disagree or strongly disagree. It demonstrates that an LMS can provide a more individualized learning experience tailored to the respondent's learning style.
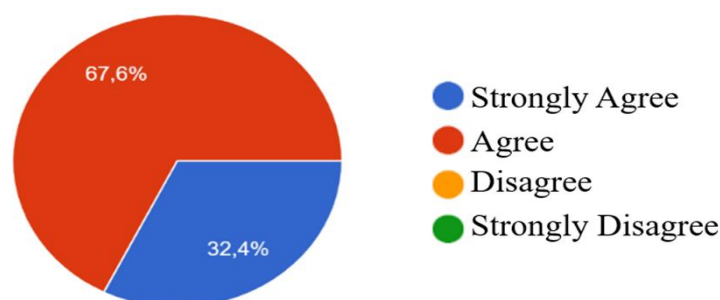

Graph 16. Responses on respondents' involvement

According to the data presented above, it can be explained that 32.4% of respondents strongly agree, and 67.6% agree if respondents feel personally involved in the learning process through interaction with this LMS. In the meantime, no respondents chose to either disagree or strongly disagree. It demonstrates that respondents' interactions with this LMS have directly impacted their learning.

CONCLUSION

Three primary conclusions can be made from this research that highlight the successful implementation of the ADDIE model in the development of a Learning Management System (LMS) for the Mekongga Regional Language learning:

1. Effectiveness of Technology-Based Learning: The results demonstrate that implementing an LMS based on the ADDIE model positively affects the effectiveness of Mekongga Regional Language learning. The LMS brings active student engagement, increases learning flexibility, and enriches the quality of learning materials. It demonstrates that technology may be effectively integrated into regional language preservation efforts while improving learning outcomes.
2. Benefits of ADDIE Systematic Approach: The ADDIE model is used in LMS development to provide the benefits of a systematic approach focusing on analysis, design, development, implementation, and evaluation. This approach assists in addressing the challenges of learning by designing appropriate and scalable solutions. The evaluation stage at the model's end allows for continual improvement, fosters innovation, and enhances learning quality.
3. Expanding the Use of Technology in Cultural Education: This research demonstrates the potential of employing technology to preserve and teach local culture, particularly the Mekongga Regional Language. LMS can be an effective tool for overcoming geographical constraints, increasing student engagement, and improving learning quality. However, technical and cultural challenges must be addressed for the implementation to be successful.

Applying the ADDIE model in developing an LMS for Mekongga Regional Language learning substantially contributed to cultural preservation and regional language teaching. These positive results show that technology can play an essential role in cultural education if it is accompanied by a structured approach that is responsive to the needs of students and teachers. Although challenges remain, this potential createsmore significant opportunities to preserve cultural heritage through technology-based education.

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