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Development of Interactive Learning Media Based on Learning Management System in Class X English Learning at SMAN 1 Gunungputri

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Abstract

This research aims to develop, test the feasibility, and measure the effectiveness of developing interactive learning media based on the Learning Management System in class X English subjects at SMAN 1 Gunungputri. This research uses the ADDIE development model. To test feasibility, researchers used validation from media experts, learning design experts and material experts and considered the results of user responses, namely teachers and students. The feasibility test results obtained from media experts were 74%, instructional design experts were 85%, material expert tests were 98%, teacher users were 92%, small group tests were 95% and large group tests were 97%. These results indicate that the use of interactive learning media is suitable to support the process of English learning activities in class X at SMAN 1 Gunungputri. Data analysis of pre-test and post-test scores showed that the average pre-test score of students was 55 and the average post-test score was 89. The results of effectiveness testing using the N-Gain test showed a result of 0.8, which is at "Effective" category. So, it is concluded that the use of interactive media based on the Learning Management System is effective in improving the learning outcomes of class X students at SMAN 1 Gunungputri.

A. Introduction

Currently, we have gone through the era of industrial revolution 4.0 where the internet, information technology and artificial intelligence have become an important part of life (Cahyono et al., 2023; Ully et al., 2023). People may now more easily and successfully carry out their daily tasks thanks to the Industrial Revolution 4.0. The era of industrial revolution 4.0 which currently focuses on rapid technological developments every day so that education is required to be in line with technological developments in the process and produce graduates who are also ready to face the challenges (Ellitan, 2020; Yang & Gu, 2021).

One of the uses of technology in this era of globalization is the use of a Learning Management System (LMS) in delivering teaching materials that can be accessed by students either via computer or smartphone (Asamoah, 2021; Brady & O'Reilly, 2020; Hussein & Hilmi, 2021). With the development of Learning Management System-based learning media, learning material will be easily delivered by educators via applications using the internet, students can easily access teaching material via computer or smartphone anywhere according to their needs, as well as carrying out the assessment process (Handayani & Waskito, 2024; Rizal et al., 2020).

Learning Management System (LMS) apart from storing learning materials in a more organized manner, will create a more effective and efficient learning process because teachers will more easily convey lesson material to students, teachers can make more effective learning time in class to hone students' language skills because of theory (Chaw & Tang, 2018; Saputro & Susilowati, 2019; Simanullang & Rajagukguk,

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2020). Learning is accessible to students via the Learning Management System (LMS). The process of evaluating students can be made simpler for teachers via learning management systems (Aldiab et al., 2019; Juhaňák et al., 2019). Students can access learning resources at any time and from any location using the Learning Management System (LMS). In addition, students can assess and get feedback directly from the system (Putra et al., 2020).

Based on the preliminary study, there were several problems that researchers found in learning English at SMAN 1 Gunungputri, namely the limited number of printed English modules, the available e-books were still limited to changing the form of the book to PDF so that the media display was still limited to text and images, as well as limitations face-to-face time in class so that students do not have sufficient time to practice their language skills. Based on these problems, it is necessary to develop an effective and efficient learning media, which can provide a variety of learning experiences that facilitate the diversity of student characteristics and be a solution to limited face-to-face time in class.

The objectives of this development research are as follows: 1) Develop interactive learning multimedia based on Learning Based Management (LMS) in English language learning, especially for class X students at Gunungputri 1 State High School. 2) Testing the feasibility of an interactive learning application based on the Learning Management System (LMS) in learning English, especially for class X students at Gunungputri 1 State High School. 3) Testing the effectiveness of interactive learning based on the Learning Management System (LMS) in learning English, especially for class X students at Gunungputri 1 State High School.

B. Research Methods

Gunungputri 1 State High School, situated on Jl. Sanding 2 Bojong Nangka Village, Gunungputri District, Bogor Regency, was the site of the study. Class is the subject of this study. The Research and Development (R&D) research method was employed in this study. The ADDIE development model is the media development paradigm employed in this study. Researchers chose the ADDIE development model because this research model describes a systematic approach that is easy to understand and implement in developing learning media.

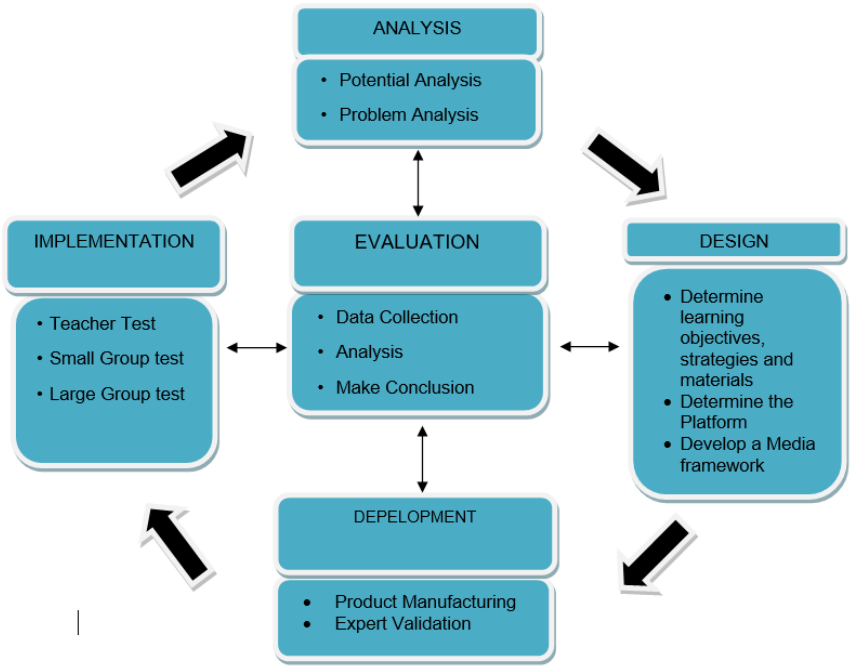

Figure 1. Flow diagram of procedures for developing interactive English learning media based on a Learning Management System (LMS)

1. Analysis

The initial stage in the ADDIE research model is Analysis. The goal of the analysis phase is to identify possible causes of performance gaps.

2. Design

According to the ADDIE research and development model, design activities are a methodical procedure that begins with creating the product's concept and content. At this stage, the initial step taken by the developer is to formulate learning objectives, teaching materials, strategies, technology and media used.

3. Development

The third stage in the development of the ADDIE model is the Development stage. The initial activity at this stage is to realize the conceptual framework that has been prepared at the design stage in the product, namely interactive learning media. To evaluate the viability of developing interactive learning materials, expert validation is conducted once the final product has been created. This includes validation from media experts, material experts, and learning design experts.

4. Implementation

The fourth step in the ADDIE development stage is Implementation. At this stage, interactive learning media products that have been created and tested for their suitability are tested on English teachers and class X students at Gunungputri 1 State High School.

5. Evaluation

The final stage of the ADDIE model development research is evaluation. Activities at the evaluation stage include providing assessments of interactive learning media products from users, namely teachers and students. Following a user assessment, the collected data is processed and subjected to both qualitative and quantitative analysis before a determination regarding the appropriateness of interactive learning materials is made.

C. Results and Discussion

Potential and Problem Analysis

Based on the results of the potential and problem analysis from the preliminary study through questionnaires to students, it was found that 54% of students had difficulty getting English handbooks, especially for the latest curriculum. Up to 65% of students already had smartphones to aid in their education. Up to 59% of students said that utilizing digital media that mixed audio, image, and audio media increased their motivation to learn, and 68% of respondents said that using media that included video, images, and audio helped them grasp English learning materials.

Expert Validation Results

Three experts, learning media specialists, learning design experts, and learning materials experts, performed media validation. The following are the results of expert validation recapitulation:

Table 1. Results of Learning Media Expert Review

Expert Review	Assessement Aspects	Percentage (%)	Criteria
Media Expert	Linguistic Structure	80	Feasible
	Media Display	70	Feasible
	Implementation	73	Feasible
	Average	**74**	**Feasible**

Table 2. Results of Learning Design Expert Review

Expert Review	Assessement Aspects	Percentage (%)	Criteria
Design Expert	Learning Aspect	90	Very Feasible
	Media Display	88	Very Feasible
	Software engineering	77	Feasible
	Average	**85**	**Very Feasible**

Table 3. Results of Expert Review of Learning Materials

Expert Review	Assessement Aspects	Percentage (%)	Criteria
Material Expert	Learning Object	100	Very Feasible
	Learning Material	100	Very Feasible
	Language and ilustration	92	Very Feasible
	Display	100	Very Feasible
	Learning Activity	100	Very Feasible
	Average	**98**	**Very Feasible**

The results of the calculations showed that interactive learning materials based on the Learning Management System for class X English learning were deemed very practicable by learning design experts and feasible by media experts.

Teacher User Response Test Results

Table 4. Teacher user response test results

Expert Review	Assessement Aspects	Percentage (%)	Criteria
Teacher	learning material Presentation	100	Very Feasible
	Media Display	84	Very Feasible
	Learning Activity	95	Very Feasible
	Implementation	90	Very Feasible
	Average	**92**	**Very Feasible**

Student User Response Test Results

Student response testing is carried out in two stages, namely small group testing and large group testing.

Table 5. Small Group Test Results

Expert Review	Assessement Aspects	Percentage (%)	Criteria
Small Group	Display	94	Very Feasible
	Utility	98	Very Feasible
	Technical	95	Very Feasible
	Learning	95	Very Feasible
	Average	**96**	**Very Feasible**

Table 6. Large Group Test Results

Expert Review	Assessement Aspects	Percentage (%)	Criteria
Large Group	Display	96	Very Feasible
	Utility	98	Very Feasible
	Technical	97	Very Feasible
	Learning	97	Very Feasible
	Average	**97**	**Very Feasible**

The average score from the small group feasibility test is 96%, which falls into the Very Feasible category, and the average score from the big group feasibility test is 97%, which falls into the Very Feasible category, according to the conversion rate table for obtaining review results.

Effectiveness Test

Table 7. Comparison data of pre-test and post-test results

	Pre-test	Pos-test
Number of Student	30	30

	Pre-test	Pos-test
Total Score	1639	2660
Average Score	55	89
Minimum Score	15	65
Maximum Score	85	100

Based on the data in the table, the N-Gain score analysis is carried out as follows:

$$\text{N – Gain} = \frac{\textit{Post Test Score} - \textit{Pre Test Score}}{\textit{Ideal Score} - \textit{Pre Test Score}}$$
$$= \frac{89-55}{100-55}$$
$$= \frac{34}{45}$$
$$= 0.76$$
$$= 0.8$$

The result fell into the "High" category (0.8) in the N-Gain score data analysis. The N-Gain score is then 80 when the N-Gain acquisition results are multiplied by 100 to translate them into a percentage. A score of >76 is classified as effective according to the conversion table for the level of attainment of the review results; therefore, obtaining a score of 80 indicates that the usage of interactive learning materials based on Learning Management The system is deemed effective.

D. Conclusion

Based on the description and data analysis of research results on the development of interactive learning media for Class X English at SMAN 1 Gunungputri, it can be concluded as follows: Canva-based interactive learning media which is integrated into the Learning Management System (LMS) was developed based on the five steps in the ADDIE Development model. From the results of the feasibility test, media experts were 74% in the "Fine" category, instructional design experts were 87% in the Very Feasible category, material experts were 98% in the Very Feasible category. These results indicate that interactive learning media based on the Learning Management System (LMS) in class X English learning at SMAN 1 Gunungputri is suitable for use as learning media in the classroom. From the teacher assessment results of 92%, small group test results of 96% and large group test results of 97%, interactive learning media based on the Learning Management System (LMS) in class X English learning at SMAN 1 Gunungputri is in the Very Suitable for use category. in learning. Based on the results of the N-Gain test, a result of 80 was categorized as "Effective", it was concluded that the use of interactive learning media based on the Learning Management System was effective in improving the learning outcomes of class X students at SMAN 1 Gunungputri.

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