



Developing Interactive PowerPoint for Teaching Vocabulary in Higher Education

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Abstract

This research focuses on developing interactive PowerPoint materials using the ADDIE model of development. Employing the Research and Development (R&D) method, the research involved first-semester students from the English Study Program at Universitas Riau, Pekanbaru, who were enrolled in a Vocabulary course. Data were collected through a needs analysis questionnaire and expert judgment validation. A total of 38 students participated in the needs analysis. Expert validation was administered from three domains: media, material, and pedagogy. The findings showed a preference for interactive PowerPoint as a learning media. The media validation results revealed "highly valid" scores: 85.5% for the "Food" topic and 92.7% for "Art and Literature." Material validation yielded a 96% score for both topics, while teaching validation showed a 90% score. These results suggest that interactive PowerPoint materials developed using the ADDIE model are highly valid.

Keywords: *Developing, Interactive PowerPoint, Vocabulary*

Introduction

Vocabulary is a tool that is extremely significant in reading since learners cannot understand the content in the reading without proper vocabulary knowledge (Namaghi & Malekpur, 2015). According to Yunhao (2011), vocabulary is the primary component of language learning, and it is extremely beneficial for students majoring in languages. This indicates that vocabulary is crucial to language development, particularly for students learning English. According to Alqahtani (2015), having a large vocabulary will make learning a language for pupils easier because vocabulary is crucial to learning a particular language.

Expanding one's vocabulary is the most crucial and initial stage in learning a language (Gifford, 2013). It is a constant in language learning as well. Folse (2024), suggests that more research is necessary to determine how vocabulary may need to be learned and acquired in a foreign language setting. According to Zhelyazova

(2011), in order for language learners to comfortably overcome their difficulties, they may utilize a range of tactics and methods.

The advancement of technology and sciences had a significant influence on various aspects of contemporary human life, including the economic, sociocultural, and educational areas (Ghory & Ghafory, 2021). Therefore, there is a need for development and more fun ways that students can do so that the learning process is more interesting considering this is one of the basics in learning English. This study aims to develop a new approach to vocabulary instruction, particularly through the use of interactive learning media.

Using learning media is one of the strategies used to raise student achievement. To make the teaching-learning process engaging, vocabulary instruction including English instruction needs learning media (Nurhidayati, 2011). According to Mayer (2009), interactive learning tools have several benefits for the English teaching and learning of vocabulary. First, because they won't be bored, it will encourage the student to study English. Second, due to the fact that interactive learning media for English can incorporate visuals, audio, animation, and video, the students can receive and understand the information with ease. Third, students are allowed to learn anywhere and whenever they desire. Last, English lecturers will have a variety of lessons to teach in order to prevent a repetitive teaching-learning process.

The main goal of 21st-century education is to equip students with skills such as high productivity, innovative thinking, effective communication, and digital literacy (Jakes, 2006). In this context, lecturers are required to be able to develop technology-based learning models. Sanaky (2009), PowerPoint has many technical advantages as a learning medium because it can present visually appealing designs, images, animations, sounds, and videos that can capture students' attention. In addition, PowerPoint can also be used for flexible, repeatable learning activities.

In this era of technology, educators are required to master technology and be able to develop learning models. The media has a huge role in educational activities, serving as an intermediary for ideas or expressing viewpoints throughout learning.

Given the importance of vocabulary in English which is used in any term, this research is anticipated to be able to raise students' mastery of vocabulary through interactive PowerPoint that can be accessed easily so that they can master and use vocabulary appropriately

Based on several interviews with the student English Study Program, Universitas Riau the researcher discovered that exclusively books in PDF format were utilized by the lecturers to teach vocabulary, and that in-focus was employed to project the books in front of the class. Interactive learning media or PowerPoint are not used in lectures to teach vocabulary. In order to assist lecturers in creating vocabulary learning resources that would make classroom instruction more engaging and can boost students' enthusiasm to learn vocabulary, the researcher created interactive PowerPoint for vocabulary courses together with the lecturer. It is expected to make it easier for students to understand the material. Thus, the title

of this research is “Developing Interactive Learning PowerPoint for Teaching Vocabulary at English Study Program, FKIP, Universitas Riau”.

Based on the background of the research above, the writer determines the statements of the problem as follows:

1. How is the development of interactive learning media for teaching vocabulary?
2. How is the validity of interactive learning media for teaching vocabulary?

Method

The researcher employed a Research and Development (R&D) method in this study. According to Sugiyono (2020, p. 418), Research and Development (R&D) is a process used to create a new product and subsequently assess its effectiveness. The development model used was the ADDIE model, which stands for Analysis, Design, Development, Implementation, and Evaluation. In this study, the researcher conducted the research only up to the development stage in creating an interactive PowerPoint for teaching vocabulary at the English Study Program, Universitas Riau.

a. Analysis Stage

In the analysis stage, the researcher used questionnaires to identify the students' need in learning vocabulary, the syllabus, the technology employed in the product's development, and the media that was utilized to distribute it.

b. Design Stage

In the design stage, the researchers began drafting the structure and content of Interactive PowerPoint based on the results of the analysis. The interactive PowerPoint was designed to include essential components, such as a cover page, disclaimer page, guideline page, menu page, content of the material, and interactive exercises. Multimedia features, such as videos, audio, and images, were planned to enhance students' engagement. A flowchart and storyboard were prepared to map out the logical flow and interactivity of the PowerPoint, ensuring alignment with instructional goals. A validation checklist was also developed to guide expert evaluations in the subsequent stage.

c. Development Stage

The development step aims to produce a research product. To create the learning media, this research used a PowerPoint application. Every component that was ready during the design phase was combined to create a single finished product. Following development, the product was evaluated by media, material, and pedagogy experts. Product validation aims to determine whether the product was effectively used or not. After that, the researcher assesses and makes changes to the product in response to recommendations

or guidance from the supervisor, media expert, material expert, and pedagogy expert. Each expert provided both quantitative scores using a Likert scale ranging from 1 to 5, where 1 = "Strongly Disagree", 2 = "Disagree", 3 = "Neutral", 4 = "Agree", 5 = "Strongly Agree". According to Akbar (2013), the final validity score percentage of an instrument can be calculated using the following formula:

$$\text{Validity Percentage} = \frac{\sum P_{ij} \times 100\%}{\text{maximum } P_{ij}}$$

The results from the experts were analyzed, and the interactive PowerPoint was revised based on their suggestions to address areas of improvement. The criteria for accuracy, interactivity, and instructional effectiveness, making it a highly valid and reliable tool for teaching vocabulary.

Results

This study aimed to develop and validate an interactive PowerPoint for teaching vocabulary at student English Study Program. A needs analysis conducted through student questionnaires revealed that the use of interactive PowerPoint was perceived as highly engaging and helped improve understanding of the material. The research employed the ADDIE model and involved expert validation in terms of media, material, and pedagogical.

The Results of the Need Analysis Questionnaire

The purpose of conducting the needs assessment was to obtain relevant data regarding students' current vocabulary proficiency and to gain insight into their learning needs, preferences, and the types of instructional support they require to enhance their vocabulary mastery. The results of the need analysis questionnaire are presented in Table 1.

Table 1. Need analysis

Questions	Alternative Answer	%
My difficulty in learning English vocabulary is mastering.....	The written is different form the spoken form in English	26.3%
	The number of words that students need to learn is <u>exceedingly large.</u>	21.1%
	How to write and spell	5.3%
	The incorrect pronunciation is often caused by the lack of sound similarity between English and students' native language	47.4%
English teaching techniques that I like	The teacher uses media to explain the material	28.9%
	The teacher only uses the handbook to explain the material	7.9%
	The teacher explained the material	57.9%

Based on the results, which showed that 47.4% of students struggle with English vocabulary, it can be concluded that one of the main difficulties is mastering correct pronunciation. This issue is often caused by the lack of sound similarity between English and the students' native language. Furthermore, the data indicate that the English teaching method most preferred by students is the use of interactive media, with 57.9% expressing a liking for this approach, and 73.7% of students stated that they would like to study English in the classroom using interactive PowerPoint.

a. Development of Interactive PowerPoint

The interactive PowerPoint was developed based on the results of the needs analysis. The students struggled to understand vocabulary and lack of engaging instructional media. Traditional teaching methods, such as textbook-based explanations were found ineffective in sustaining student's interest. The results of the student questionnaire further confirmed a preference for learning tools in the form of interactive PowerPoint presentations that incorporate videos, audio, images, and interactive activities. "Food" and "Art and Literature" are two materials that make up the interactive PowerPoint that was created. The PowerPoint program is used to produce all interactive PowerPoint presentations.

b. Validation Result

The interactive PowerPoint of “Food” and “Art and Literature” was evaluated by experts for media, material, and pedagogy using a Likert scale questionnaire. The results are presented in Table 1.

Table 1. Validation Results

Interactive PowerPoint	Validation Aspect	Average Score	Score Percentage	Criteria
FOOD	Media expert validation	4.3	86%	Highly valid
	Material expert validation	4.8	96%	Highly valid
	Pedagogy expert	4.5	90%	Highly valid
LITERATURE	Media expert validation	4.6	92%	Highly valid
	Material expert	4.8	96%	Highly valid
	Pedagogy expert	4.5	90%	Highly valid

The media expert in this study rated the results as "highly valid," with the interactive PowerPoint on "Food" receiving a score of 4.3 with a percentage of 86% and the interactive PowerPoint on "Art and Literature" receiving a score of 4.6 with a percentage of 92%. The material expert in this study rated the results as “highly valid”, with the interactive PowerPoint on “Food” receiving a score of 4.8 with a percentage 96% and the interactive PowerPoint on “Art and Literature” receiving a score of 4.8 with a percentage 96%. The pedagogy expert in this study rated the results as “highly valid” with the interactive PowerPoint on “Food” receiving a score of 4.5 with a percentage of 90%.

The average score of the three experts was 4.4 for media, 4.8 for material, and 4.5 for pedagogic. The interactive PowerPoint components developed received a ‘highly valid’ level of validity from experts. However, validators offer a number of suggestions, including the appropriate selection of display colours, the addition of some images to the student practice area, the inclusion of exercise feedback so that students understand the rationale behind correct or incorrect responses, and the elimination of unnecessary sounds.

Discussion

The results of this study indicate that the develop interactive PowerPoint is a valid and effective instructional tool for teaching vocabulary to students in the English Study Program. Validity assessments conducted by media, material, and pedagogical experts categorized the product as highly valid. This confirms that the interactive PowerPoint meets the essential standards of material accuracy, media

design, and instructional effectiveness.

The validation process focused on three key aspects: content quality, interactivity, and instructional effectiveness. The media expert highlighted the successful and seamless integration of multimedia elements such as videos, audios, images, and interactive exercises that collectively create an engaging and dynamic learning environment. These features enhance user interaction and help sustain students' attention during the learning process. The material expert verified that the vocabulary content was accurate, clear, and aligned with the learners' level. Meanwhile, the pedagogical expert emphasized the instructional quality of the PowerPoint, noting that it supports student-centered and autonomous learning, which is essential in language acquisition.

Support from previous research further strengthens the use of interactive PowerPoint as a valid medium for vocabulary instruction. Rahayu and Riska (2019) found that students who used interactive PowerPoint in vocabulary learning showed better understanding, increased motivation, and higher retention of new words compared to those using conventional methods. Their study emphasizes that combining multimedia and interactivity can significantly enhance vocabulary acquisition, especially when materials are tailored to students' needs and learning styles. Additionally, Mayer's (2009) Cognitive Theory of Multimedia Learning explains that learners gain deeper understanding when information is delivered through both visual and auditory channels. Nation (2001) also underlines the importance of visual context and learner interaction in making vocabulary instruction more meaningful and memorable.

By integrating sound pedagogical theory, multimedia principles, and empirical evidence, this interactive PowerPoint is proven to be a highly valid and effective instructional tool for improving vocabulary mastery among EFL learners.

Conclusion

The researcher submits the product to the validator for validation in order to determine its quality. The validity results follow, showing that interactive PowerPoint materials for vocabulary learning are appropriate for use as teaching tools. Media expert questionnaires, material expert questionnaires, and teaching expert questionnaires were the research tools utilized in the creation of interactive PowerPoint. The Likert scale is one of the tools utilized, and descriptive analysis and percentage calculation are the methods employed to analyse the data from the questionnaire (Akbar 2013).

The produced interactive PowerPoint material was then verified by the researcher. The Interactive PowerPoint demonstrated that all aspects were in the good category and was judged feasible for use as a learning media, according to the validation results from media expert, material expert, and teaching expert. Students can also use this media on their own as an engaging and creative teaching tool.

Suggestions

Based on the results of this research and development, here are some suggestions that can be considered to improve the effectiveness of learning media:

1. The interactive PowerPoint that has been made is a helpful tool for encouraging vocabulary learning. The use of this material allows the students to learn autonomously.
2. Given the substantial advantages that this research and product development have shown, it is advised that teachers think about extending the use of this PowerPoint or implementing it in other subject areas in the future. This interactive PowerPoint could be a useful teaching tool for teaching different concepts and terminology by expanding the scope of topics covered, which would further improve learning process.
3. The researcher is only produced interactive PowerPoint in limited quantities for the purposes of this final assignment. as a result, in order to improve the quality of student learning, more extensive development of interactive PowerPoint as a teaching tool is required.

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