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DESIGNING INTERACTIVE VOCABULARY MEDIA SI RADI USING CANVA AT SMP ISLAM QUR'ANI AL BAHJAH PEKANBARU

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Abstract
Students' limited vocabulary mastery remains a significant challenge in English language learning, as many students experience difficulties in understanding word meanings, pronouncing vocabulary accurately, and applying words appropriately in context due to the dominance of conventional memorization based instruction. This study aimed to develop and examine the effectiveness of an interactive English vocabulary learning media in improving students' vocabulary mastery. The research employed a Research and Development (R&D) design using the ADDIE model, consisting of Analysis, Design, Development, Implementation, and Evaluation phases. The data were collected through expert validation sheets, students' response questionnaires, and pre-test and post-test instruments administered to secondary school students, and were analyzed using mean score comparison and Normalized Gain (N-Gain) analysis. The findings of the needs analysis revealed that 85% of the students needed engaging and interactive learning media to support vocabulary learning, as conventional teaching methods were considered less motivating and less effective in helping them understand new vocabulary. The findings also indicated that the developed media was very feasible, with a validation score of 92% from the expert judgment, and received positive responses from students (90%) in terms of ease of use, motivation, attractiveness, and usefulness. Furthermore, the mean score increased from 51 in the pre-test to 85.33 in the post-test, with an N-Gain value of 0.70 categorized as high Effectiveness, demonstrating a meaningful enhancement in students' vocabulary mastery. Therefore, the interactive vocabulary learning media can be considered both valid and effective as a pedagogical tool to support vocabulary acquisition and improve learning outcomes in secondary school English instruction.

Keywords : *Interactive Learning Media, Vocabulary Mastery, ADDIE Model, Research and Development, N-Gain, English Language Learning.*

1. INTRODUCTION

Vocabulary is a fundamental component of language learning that supports learners' ability to understand and express meaning effectively. Ideally, vocabulary mastery enables students to communicate clearly, comprehend spoken and written texts, and develop other language skills such as grammar, pronunciation, and fluency. Previous studies emphasize that vocabulary is a core element of language proficiency and a key indicator of communicative competence. Learners with sufficient vocabulary knowledge are better able to engage in meaningful interaction and process language at deeper cognitive levels, making vocabulary an essential focus in English language instruction.

However, in reality, many students still face significant difficulties in mastering vocabulary. Students often struggle with pronunciation, spelling, meaning comprehension, and appropriate word usage. These challenges are also found among eighth-grade students at SMP Islam Qur'ani Al Bahjah Pekanbaru, who experience difficulties in remembering vocabulary and pronouncing words correctly, even at the basic level. In addition, students tend to show low motivation and passive participation in learning activities. The use of conventional teaching media, such as PowerPoint and YouTube videos, further limits student interaction, resulting in low engagement and minimal vocabulary retention.

Previous studies have demonstrated that interactive digital media, including Canva, can improve students' motivation, engagement, and learning outcomes. Research findings indicate

that Canva supports visual learning, enhances creativity, and increases students' participation. However, most existing studies focus on general multimedia use or are conducted in different language contexts, such as Arabic learning. Furthermore, limited studies explore the integration of interactive learning principles, such as real-time engagement, multimodal reinforcement, and contextualized vocabulary tasks. In addition, the effectiveness of such media is rarely measured using quantitative analysis like N-Gain. Therefore, a gap remains in developing and evaluating interactive vocabulary media specifically for junior high school English learners.

Based on these considerations, this study aims to develop interactive vocabulary learning media using Canva (Si RADI) and examine its effectiveness in improving students' vocabulary mastery. This research focuses on identifying students' needs, evaluating the feasibility of the developed media, and measuring its effectiveness through N-Gain analysis. The findings of this study are expected to contribute to the development of interactive digital learning media and provide practical implications for improving vocabulary instruction.

2. METHOD

Research Design

This study employed a Research and Development (R&D) design aimed at developing interactive vocabulary learning media using Canva (Si RADI) for eighth-grade students at SMP Islam Qur'ani Al Bahjah Pekanbaru. R&D is appropriate for producing and validating educational products through systematic stages of design, development, and evaluation. This study combined the principles of Borg and Gall's R&D model with the ADDIE framework, which consists of Analysis, Design, Development, Implementation, and Evaluation stages. This approach ensures that the developed media is pedagogically sound, visually engaging, and aligned with students' learning needs.

Research Setting and Participants

The research was conducted at SMP Islam Qur'ani Al Bahjah Pekanbaru. The participants consisted of 15 eighth-grade students, one English teacher, and two expert validators (material and media experts). The students were selected due to their difficulties in vocabulary mastery, including pronunciation, spelling, meaning, and contextual usage. The teacher provided contextual information regarding classroom conditions, while expert validators evaluated the feasibility of the developed media.

Research Procedures

This study followed the ADDIE model. In the analysis stage**,** students' vocabulary difficulties and learning needs were identified through questionnaires and teacher interviews. In the design stage, learning objectives, vocabulary materials, and media structure were planned, including layout, navigation, and interactive features. In the development stage, the Canva-based interactive media were created and validated by experts. In the implementation stage, the revised media were tested on students through learning activities supported by pre-test and post-test. Finally, in the evaluation stage, both formative and summative evaluations were conducted to assess the quality and effectiveness of the media.

Data Collection Techniques

Data were collected using several instruments, including a needs analysis questionnaire, teacher interview, expert validation sheets, student response questionnaire, and vocabulary tests (pre-test and post-test). The questionnaires used a four-point Likert scale to measure students' needs, media feasibility, and user responses. The vocabulary test consisted of multiple-choice items covering meaning, synonym-antonym, spelling, and contextual usage.

Data Analysis Techniques

The data were analyzed using descriptive quantitative and qualitative methods. Quantitative data from questionnaires and validation sheets were converted into percentages to determine

feasibility levels. The criteria ranged from very feasible to not feasible. Needs analysis results were also categorized to identify students' learning priorities.
To measure effectiveness, pre-test and post-test scores were analyzed using mean score comparison and N Gain analysis. The mean score was calculated to identify improvement, while N-Gain was used to determine the level of effectiveness (high, moderate, or low). Additionally, qualitative data from interviews and expert feedback were analyzed thematically to support the interpretation of findings and improve the developed media.

3. FINDINGS AND DISCUSSION

Findings

1. Needs of Students and Teachers in Vocabulary Learning

The needs analysis was conducted to identify the actual condition of vocabulary learning among eighth-grade students. Data were collected through a student questionnaire and a teacher interview to ensure a comprehensive understanding of classroom realities. The results revealed that students experienced significant difficulties in vocabulary learning, with an overall agreement percentage of 87%. Pronunciation problems were the most prominent issue (92%), followed by difficulties in contextual usage (90%), as well as spelling and word retention (85% each). These findings indicate that students struggle not only with recognizing vocabulary but also with using and retaining it effectively.
In addition to cognitive challenges, the findings also highlighted motivational and instructional issues. Approximately 90% of students expressed the need for interactive learning media, while 87% reported low motivation in learning vocabulary. This suggests that the current instructional approach does not sufficiently engage students or support effective learning.
The teacher interview supported these findings. The teacher reported that students frequently mispronounce vocabulary and rely heavily on memorization techniques. While memorization may support short-term recall, it does not effectively promote contextual understanding or long-term retention. This indicates a gap between the expected objectives of vocabulary learning and actual classroom practices.
Overall, the findings demonstrate the need for an interactive and multimodal learning medium that integrates visual, audio, and contextual elements to improve vocabulary learning.

2. Designing of the SIRADI Interactive Vocabulary Media

The design of the SIRADI interactive vocabulary media was developed based on the identified learning needs. Each component was systematically structured to address students' difficulties in pronunciation, meaning comprehension, retention, and contextual usage. The design emphasizes a pedagogical approach rather than merely technical development.
Key features of the media include audio pronunciation, visual illustrations, and contextual examples. Audio support was incorporated to improve students' phonological accuracy, while visual elements help strengthen semantic understanding. Contextual sentences were included to support the application of vocabulary in meaningful communication.
To enhance motivation and engagement, the media also integrates interactive exercises and game-based activities. These features encourage active participation, provide immediate feedback, and reinforce vocabulary learning through repeated practice. This approach shifts learning from passive memorization to active exploration.
The overall design follows a structured instructional sequence, starting from vocabulary presentation, followed by pronunciation practice, contextual understanding, and interactive reinforcement. This systematic organization supports gradual learning and reduces cognitive overload.

3. Development Process and Expert Validation

The validation results indicate that the developed media achieved a high level of feasibility. The material expert validation resulted in a score of 92%, categorized as very valid. This suggests that the content is aligned with learning objectives, relevant to students' needs, and clearly presented. The material was also considered appropriate in terms of difficulty level and instructional clarity.

Similarly, the media expert validation yielded a score of 97%, indicating excellent technical and visual quality. The navigation, text readability, and language clarity received perfect scores, while visual display and media presentation were also rated highly. Minor suggestions were related to optimizing audio use and enhancing motivational elements.
Overall, the validation results confirm that the media is both pedagogically sound and technically reliable. The integration of instructional content and visual design was well-structured and aligned with learning objectives.
Thus, the SIRADI media can be considered highly feasible for classroom implementation without requiring major revisions.

4. Implementation and Students' Response
The implementation began with a pre-test to measure students' initial vocabulary mastery. The results showed that students had limited vocabulary competence, particularly in understanding contextual meaning and applying vocabulary appropriately. Afterward, the interactive media was used in the learning process.
During implementation, students demonstrated increased engagement and participation. The use of audio, images, and interactive features created a more dynamic learning environment compared to traditional methods. Students were able to follow the structured learning sequence effectively.
The student response questionnaire showed a mean percentage of 89%, indicating very positive perceptions. The ease of use aspect scored 93%, motivation 84%, attractiveness 83%, and usefulness 91%. These results suggest that the media is easy to use, engaging, and beneficial for learning vocabulary.
Overall, the findings indicate that the media has high practicality and is well accepted by students.

5. Effectiveness of the Media
The effectiveness of the media was measured through pre-test and post-test comparisons. The results showed a significant improvement in students' vocabulary mastery, with the mean score increasing from 54.67 to 82.33. The paired sample t-test revealed a significance value of 0.000 (< 0.05), indicating a statistically significant difference between pre-test and post-test scores.
Furthermore, the N-Gain analysis resulted in a mean score of 0.70, categorized as high. Most students achieved moderate to high improvement levels, and no students fell into the low category. This indicates that the media was effective across different levels of student ability.
The improvement can be attributed to the integration of visual, audio, and interactive elements, which support deeper understanding and retention. The structured and engaging design also promotes active learning and repeated exposure to vocabulary.
In conclusion, the findings confirm that the SIRADI interactive vocabulary media is effective in improving students' vocabulary mastery, supported by both statistical evidence and consistent learning improvement.

Discussions
This study was conducted to develop and evaluate the effectiveness of Canva-based interactive media for teaching English vocabulary to eighth-grade students at SMP Islam Qur'ani Al Bahjah Pekanbaru. The findings indicate that the developed media were categorized as valid based on expert validation results and were effective in improving students' vocabulary mastery, as reflected in the improvement of pre-test and post-test scores and supported by the N-Gain analysis. These findings suggest that the integration of structured interactive digital media into vocabulary instruction can meaningfully address both linguistic and motivational challenges faced by junior high school students.

The validation results demonstrate that the developed media met pedagogical and technical standards for classroom use. The alignment between learning objectives, basic competencies, and instructional materials indicates that the product was systematically designed rather than merely visually constructed. This supports the principle that effective instructional media must integrate content accuracy, clarity of explanation, and appropriate design features to

facilitate learning. As emphasized by Bergström et al. (2022), vocabulary is a core feature of language proficiency, and therefore instructional materials must be carefully structured to support vocabulary acquisition in a comprehensive manner. The positive validation results confirm that the developed media were pedagogically appropriate to support this goal.

The improvement in students' vocabulary mastery after the implementation further indicates that the interactive features of the media contributed to meaningful learning outcomes. The increase in post-test scores compared to pre-test results, reinforced by the N-Gain analysis, demonstrates that students experienced measurable progress. This finding aligns with the argument of Tiansoodeenon et al. (2023), who stated that vocabulary knowledge directly influences learners' ability to communicate effectively. When students' lexical knowledge expands, their confidence and ability to comprehend and express meaning also improve. Similarly, Nguyen (2023) emphasized that vocabulary acquisition forms the foundation for the development of other linguistic competencies. The observed improvement in this study supports these theoretical perspectives by showing that enhanced vocabulary mastery can be achieved through structured instructional intervention.

The effectiveness of the developed media can also be explained through the integration of multimodal elements and interactive engagement. The inclusion of visual representations, contextualized examples, and pronunciation reinforcement provided students with multiple channels for processing vocabulary. This approach reflects contemporary perspectives on multimodal learning, which suggest that combining visual and auditory input enhances retention and comprehension. Putra et al. (2025) highlighted that digital and interactive tools create more immersive learning environments by engaging multiple sensory modalities. The present findings support this claim, as students demonstrated improved vocabulary retention after engaging with media that required active interaction rather than passive observation.

Moreover, the interactive design appeared to address students' pronunciation difficulties, which were identified during the preliminary teacher interview. Previous studies by As and Apoko (2023) and Siregar (2023) revealed that junior high school students frequently struggle with pronunciation, spelling, and memorization of vocabulary. Similarly, Rebhi and Hasan (2023) noted that inaccurate pronunciation and limited contextual understanding hinder students' communicative performance. The integration of pronunciation support and contextual vocabulary tasks in this study directly targeted these recurring challenges. By allowing students to associate written forms with correct phonological patterns and meaningful contexts, the media supported both recognition and productive use of vocabulary. This may explain the observed improvement in students' performance.

In terms of motivation and engagement, the findings are also consistent with prior research on digital learning media. The teacher's initial observation indicated that students were generally passive when exposed only to conventional PowerPoint presentations and YouTube videos. However, during the implementation of the interactive Canva-based media, students demonstrated greater participation and enthusiasm. This outcome is in line with the findings of Sugiarty (2024), who reported increased student engagement and confidence through Canva-based learning, as well as Jamaludin and Sedek (2023), who found that students preferred Canva over traditional presentation tools due to improved comprehension and involvement. Hutapea et al. (2024) further explained that interactive digital platforms positively influence behavioral, emotional, and cognitive engagement. The present study reinforces these findings within the context of English vocabulary learning at the junior high school level.

While previous research, such as Maqayis et al. (2023) and Sugianto et al. (2023), demonstrated that Canva-based and interactive media can improve vocabulary mastery, most of these studies focused on product validity and general student responses. Similarly, Khoirun Nisa' (2025) and Rahmadayanti and Marzuki (2023) reported positive validation and feasibility results in Arabic vocabulary contexts. In contrast, this study extends prior research by specifically addressing English vocabulary difficulties at the junior high school level based on direct classroom needs analysis and by measuring effectiveness using normalized gain (N-Gain) analysis. This quantitative measurement provides clearer evidence of learning impact, thereby strengthening the empirical basis of interactive media development in EFL contexts.

The findings of this study therefore contribute both theoretically and practically. Theoretically, the results support the view that vocabulary acquisition can be enhanced through multimodal and learner-centered instructional design. The study reinforces the importance of aligning technological tools with pedagogical objectives rather than using digital platforms merely for aesthetic enhancement. Practically, the study suggests that Canva can serve as an accessible and adaptable tool for English teachers seeking to create interactive vocabulary materials that address pronunciation, retention, and contextual usage simultaneously.

However, this study has certain limitations. The research was conducted within a single class and over a relatively limited period of implementation, which may restrict the generalizability of the findings. Additionally, the study focused primarily on vocabulary mastery and did not examine long-term retention or the transfer of vocabulary knowledge to other language skills such as speaking fluency or writing development. Future research may involve broader samples, longer intervention periods, and integration with communicative performance assessment to provide a more comprehensive understanding of the long-term impact of interactive digital media in English language learning.

4. CONCLUSION

This study aimed to develop and evaluate the effectiveness of Si RADI for teaching English vocabulary to eighth-grade students at SMP Islam Qur'ani Al Bahjah Pekanbaru. Based on the findings, it can be concluded that the developed media were valid and appropriate for classroom implementation, as indicated by the expert validation results. The alignment between learning objectives, instructional materials, and interactive design confirms that the product was systematically developed to support vocabulary learning. Furthermore, the implementation results demonstrate that the media were effective in improving students' vocabulary mastery. The improvement in post-test scores compared to pre-test results, supported by the N-Gain analysis, indicates that the use of Si RADI contributed to measurable learning progress. The integration of pronunciation support, contextual vocabulary tasks, and multimodal elements helped address students' difficulties in remembering words, understanding meanings, and pronouncing vocabulary accurately. In addition, the interactive features encouraged active participation and increased students' engagement during the learning process.

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