J-Shelves of Indragiri (JSI)
https://ejournal-fkip.unisi.ac.id/shelves
Email: jsipbifkipunisi@gmail.com
DOI: https://doi.org/10.61672/jsi.v8i2.3650

November 2026. Vol.8, No,2
e-ISSN: 2721-205X
pp.17-28

DEVELOPMENT OF E-FLASHCARD MEDIA FOR ENGLISH VOCABULARY MASTERY IN A SCHOOL-BASED SETTING IN THE THIRD GRADE AT TANAH TINGGI 7 PUBLIC ELEMENTARY SCHOOL TANGERANG CITY

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Article Info
Article History
Received:26-09-2026
Revised:15-10-2026
Accepted:17-10-2026
Published:12-11-2026

Keywords
E-flashcard;
Vocabulary;
English

Abstract

This study was conducted because students' command of English vocabulary remains relatively low, causing them to struggle with understanding and retaining learning materials. Additionally, some teachers have not yet mastered the optimal use of digital media, so instruction continues to rely primarily on textbooks as the main learning tool. The primary objective of this study is to develop an educational media product in the form of e-flashcards for the "Is It the Canteen?" unit in third-grade elementary school English. This e-flashcard product was created as an engaging and user-friendly digital learning medium for both teachers and students. This study employed the Research and Development (R&D) method by applying the ADDIE development model, which consists of five stages: analysis, design, development, implementation, and evaluation. The data collection techniques used were interviews, observations, and questionnaires. Quantitative and qualitative data were analyzed using the Likert scale. The results of this research and development indicate that, according to the content expert, the validity level is 96%; according to the media expert, it is 95%; and according to the language expert, it is 93%, indicating that the medium is considered good and suitable for use. The evaluation by education experts yielded a practicality score of 4.7, indicating approval, while student feedback yielded a practicality score of 4.65, indicating very high approval. The results from the pre-test to the post-test also showed an improvement, with a post-test average of 92.3. Therefore, it can be concluded that the e-flashcard media developed by the researcher meets the criteria for effectiveness and is suitable for use in teaching English to third-grade elementary school students.

INTRODUCTION

Education plays a significant role in advancing the quality of life and educating every individual to help build a nation capable of competing in this increasingly advanced age. As we have now entered the digital age, many educational innovations that were once limited to the classroom can now be conducted online across various digital platforms(Prasrihamni et al. 2022).

English is a subject taught in elementary school. Around the world,

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English is widely used both orally and in writing, either as a second language (L2) or as a foreign language. However, in Indonesia, English is still considered a foreign language(Qamariah 2023).Therefore, English language instruction within the Indonesian education system is focused on developing these four skills so that students become proficient in communicating in English. The goal of English language instruction is to develop proficiency in written and spoken English, as reflected in the four skills (listening, speaking, reading, and writing)(Priyana 2021).

Researchers identified several issues. First, students' command of English vocabulary remains limited. This is due to a lack of exposure to English in daily life, as well as insufficient instruction in vocabulary pronunciation and phonetic understanding. Second, the use of unengaging teaching materials. This is because some teachers focus only on lectures and textbooks and are not very familiar with technology or other digital media. This makes learning feel boring and fails to capture students' attention.

However, previous research has largely focused on general learning outcomes and the use of instructional media for specific subject matter. Attention to the development of school-environment-based e-flashcards specifically designed to improve elementary school students' English vocabulary proficiency remains limited. Furthermore, few studies have systematically developed such media using a comprehensive instructional design model, such as the ADDIE model.

Therefore, this study aims to address this gap by developing school-environment-based e-flashcards to improve third-grade elementary school students' English vocabulary mastery. The uniqueness of this study lies in the integration of English vocabulary material related to the school environment into e-flashcard media that is engaging, interactive, and systematically designed using the ADDIE model. This study also evaluates the feasibility, practicality, and effectiveness of the developed media through expert validation, student feedback, and assessment of student learning outcomes.

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LITERATURE REVIEW

E-Flashcard as a learning tool

The E-flashcard learning tool, according to (Ayu et al. 2021) contains a number of digital cards, each of which provides an explanation for the topic covered. You can do this by calling up or selecting the card you want. According to (Oktavia 2024) E-flashcards are digital educational tools that convey information through images and animations, as well as sound or audio, to help students better understand the subject matter.

According to (Gandana and Fauziah 2023) Digital flashcards are illustrated vocabulary cards featuring images, letters, or symbols, allowing users to access them at any time. According to (Desfrida, Fahrurrozi, and Wardhani 2023) E-flashcards are a learning tool in the form of electronic cards that present information in the form of images, text, symbols, sounds, or animations in a digital format.

Based on the definitions above, it can be concluded that e-flashcards are a collection of digital cards containing information in the form of images, text, symbols, or animations presented interactively. E-flashcards not only feature images and animations but can also include audio to help students better understand the material(Asihaningtyas 2022).

Furthermore, e-flashcards serve as a practical and interactive technology-based learning tool that can be accessed anytime and anywhere due to their digital nature, making them flexible for use in any setting and at any time. Through an effective combination of audio and visual elements, they can enhance students' understanding. This medium is highly effective for improving elementary school students' mastery of English vocabulary(Wahyuni 2020).

Some advantages of e-flashcards (Hulfa, Maritasari, and Rodiyah 2023)*:* First, they are easily accessible anywhere and anytime simply click on the provided link or scan the QR code. Second, they are practical in terms of both creation and use; e-flashcards are very convenient. Educators do not need any special skills to use this medium, and it does not require electricity. Third, e-flashcards are easy to remember because they present short messages on each

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card. Fourth, flashcards are fun when used in games.

Some drawbacks of e-flashcards (Pradana and Santosa 2020): First, understanding of the material is incomplete because the medium relies solely on visual perception, which is not strong enough to engage the whole person, resulting in an incomplete presentation of the material. Second, without games to break things up, students will become bored. Third, a stable internet connection and sufficient data allowance are required.

Based on the above, it can be concluded that to address the limitations of flashcards, educators can incorporate audio or sound so that learning does not rely solely on one of the five senses, as this can quickly make the learning process boring.

The Role of Vocabulary in Improving Students' English Language Skills

According to (Tambunsaribu 2022) Vocabulary is a component of language that has meaning. According to (Susanti 2022) Vocabulary refers to the total number of words in a language, as well as the words a person knows and uses in speaking and writing. A language's vocabulary is constantly changing and evolving as life becomes increasingly complex.

According to (Fitriyani and Nulanda 2021) The word "vocabulary" is a term that succinctly represents a collection of words in a language. Then, according to (Asadi and Suryana 2020) Vocabulary consists of words that, when arranged into a meaningful sentence, can be used as a tool for communication.

Based on the opinions of the experts cited above, it can be concluded that vocabulary is the collection of words that a person possesses, understands, and uses as a means of communication, both verbally and in writing(Aba 2019). Vocabulary encompasses not only the number of words a person knows, but also the ability to understand their meanings and use them appropriately within a given linguistic context. Vocabulary mastery is a crucial aspect of language proficiency because vocabulary serves as the foundation for constructing meaningful sentences and conveying ideas, thoughts, and feelings to others(Fitriyani and Nulanda 2021).

In the context of classroom learning, one way to help students acquire

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language is to equip them with various vocabulary-learning strategies (Holidazia and Rodliyah 2020). Teaching vocabulary to elementary school students should be a priority, because having a sufficient vocabulary will make it easier for children to communicate. The more vocabulary students master, the easier it will be for them to learn English in class (Handayani 2024).

Creating an English-language environment is a simple way to help students get more language input. In language learning, the teacher's role as a language model is crucial(Akbar 2022). By mastering English at a young age, elementary school students have many opportunities to unlock a wide range of possibilities, paving the way for success and personal growth in an increasingly interconnected global society (Febriansyah et al. 2025).

RESEARCH METHOD

Research and Development (R&D) is a research method used to develop specific products and test their effectiveness. The R&D process begins with a needs analysis to gather data and information about potential products, followed by the development phase, which includes product design, testing, and evaluation. The research model used in this development process is the ADDIE model. The ADDIE model consists of five stages: analysis, design, development, implementation, and evaluation.

This study aims to develop instructional materials and assess their feasibility, practicality, and effectiveness in improving students' English vocabulary proficiency. To support this assessment, qualitative and quantitative data were collected to serve as the basis for evaluating the developed materials.

This study was conducted at SDN Tanah Tinggi 7 in Tangerang City. The target class consisted of 27 third-grade students. This class was selected because the students' command of English vocabulary was still lacking. This was due to a lack of habit in using English in daily life as well as a lack of instruction in vocabulary pronunciation and phonetic understanding. Second, the use of unengaging teaching materials. This was because some teachers focused only on lecture-based methods and textbooks and were not very familiar with technology

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or other digital media.

This makes learning feel boring and fails to capture students' attention. This study involved four expert reviews: an expert in English language education, an expert in digital media, an English language expert, and an education expert (teacher) with experience in teaching English. They assessed and evaluated the e-flashcards before they were implemented in the classroom.

Data collection was conducted through observation, interviews, expert evaluations, expert assessments ranging from one-to-one to medium-group, and pre-tests and post-tests. The success rate of the e-flashcards was measured by comparing students' average scores on the pre-test and post-test. The improvement in scores indicates that students' mastery of English vocabulary improved after using e-flashcards in their learning.

FINDINGS AND DISCUSSION

Results of the Expert Assessment

The development model used as a reference in this study is the ADDIE model developed by Dick and Carey. The ADDIE model consists of five stages: analysis, design, development, implementation, and evaluation. In this study on the development of e-flashcards for the school environment, an analysis was conducted to determine the initial level of English vocabulary mastery among third-grade elementary school students, their pronunciation of English vocabulary, and the media available at the school.

In the context of developing e-flashcards for the school environment, the design phase involves selecting the platform to be used (WordWall), designing supporting illustrations, determining the vocabulary, establishing the workflow for using the e-flashcards on WordWall, and structuring the text to suit the abilities of third-grade students.



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The development phase includes writing the vocabulary, creating illustrations, and designing the layout. Once the initial product is complete, it undergoes validation by experts, such as subject matter experts, language experts, and media experts. Suggestions and feedback from these experts are used to revise the e-flashcards so that the product is more suitable for use.

For the implementation phase, e-flashcards were used with third-grade elementary school students in vocabulary building activities. The teacher provided instructions, asked the students to listen and look at the images and vocabulary words on the e-flashcards displayed on the smart TV screen, and the students answered the anagram questions provided.

The evaluation phase involved measuring improvements in English vocabulary proficiency before and after the use of e-flashcards in the school setting. The assessment also included student responses to the e-flashcards, teacher evaluations, and the alignment of the e-flashcard content with learning objectives. The evaluation results were used as the basis for refining the final product.

There are several evaluation tables based on the results of the research conducted by the researcher. The table below shows the expert evaluations, specifically from subject matter experts, media experts, language experts, and education experts. They assessed and evaluated the appearance, layout, content, grammar, and English language structure of the e-flashcards created by the researcher. Results of the expert evaluation in Table 1.

Table 1: Results of the Expert Validation Assessment

No.	Expert Test	Skor	Persentase	Category
1.	Material Expert	4,8	96%	well worth it
2.	Media Expert	4,75	95%	well worth it
3.	Language Expert	4,69	93%	well worth it

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4.	Education Expert	4,7	94%	well worth it

As shown in the table above, the subject matter experts gave a score of 4.8 (96%), indicating th at the alignment of the material with the learning objectives, the appropriate use of vocabulary, and the suitability of the material for the developmental level of elementary school students are consistent with the e-flashcards developed by the researcher.

Media experts gave a score of 4.75 (95%), indicating that the media's appearance, design, and functionality are engaging and suitable for use. Language experts gave a score of 4.69 (93%), indicating that aspects related to the accuracy of vocabulary and sentence structure are appropriate and suitable for elementary school students.

Education experts (teachers) gave a score of 4.7 (94%), indicating that the material's alignment with learning objectives, the accuracy of vocabulary usage, students' ease in understanding the material, the media's appeal, and its effectiveness in helping improve students' English vocabulary are all good and suitable for use.

Based on the evaluation results from subject matter experts, media experts, language experts, and education experts (teachers), the e-flashcard tool received a "Very Good" rating. Consequently, the e-flashcard tool developed has been deemed suitable for use in English language instruction to help improve students' vocabulary mastery.

Product Test Results

After undergoing a validation assessment by experts, the e-flashcard product was then pilot-tested with students in three phases: one-on-one sessions with three students, small-group sessions with five students, and medium-group sessions with ten students. The purpose of this pilot test was to determine the practicality and user acceptance of the developed medium. The evaluation results for each testing phase are presented in Table 2.

Table 2: Product Testing Phase

No	Test Phase	Skor	Persentase	Category
1.	One to one	4,2	80,5%	worthy

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e-ISSN: 2721-205X
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2.	Small Group	4,38	87,66%	well worth it
3.	Medium Group	4,65	93,16%	well worth it

The results of the product trials during the one-to-one evaluation, small group evaluation, and medium group evaluation phases showed an increase in assessment scores at each stage. This improvement indicates that the e-flashcard media developed is highly practical and has been positively received by the students. During the testing process, students responded positively to the use of the medium, in terms of its appearance, ease of use, and the presentation of the English vocabulary material.

To evaluate the effectiveness of school-based e-flashcards in improving students' English vocabulary mastery, pre-tests and post-tests were administered to 27 third-grade students. The pre-test was conducted before the implementation of the e-flashcards, while the post-test was conducted after the completion of the learning activities. The results are presented in Table 3.

Table 3: Result Pre-test & Post-test

No.	Test	Average Score
1.	Pre-Test	67,40
2.	Post-Test	92,3

The results of the pre-test and post-test indicate a significant improvement in students' English vocabulary proficiency after using school-based e-flashcard media. The average pre-test score obtained by students before using the media was 67.40, indicating that their English vocabulary proficiency still needed improvement. After the students participated in learning using the school-environment-based e-flashcard media, the average post-test score increased to 92.3.

This increase in scores indicates that school-environment-based e-flashcard media can help students better understand and remember English vocabulary. The presentation of material linked to the school environment, which is closely related to students' daily lives, makes the learning process more meaningful and easier to understand.

In addition, the use of images and an engaging interface in the e-flashcard

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medium also helps to increase students' attention and motivation to learn during the learning process. Thus, the difference in average scores between the pre-test and post-test indicates that school-based e-flashcard media are effective in improving elementary school students' mastery of English vocabulary.

CONCLUSION

The use of these e-flashcards is also intended to make the learning process more engaging and easier to understand, so that students can more easily recognize, pronounce, and remember English vocabulary through the available visual and audio displays. Another objective is to assess the quality of the learning media based on their validity and practicality through evaluations by subject matter experts, media experts, language experts, and education experts, as well as through student feedback via a questionnaire. The results of this study indicate that, according to subject matter experts, the validity score is 4.8 (96%); according to media experts, it is 4.75 (95%); and according to language experts, it is 4.69 (93%). The evaluation by education experts shows a practicality score of 4.7 (94%). In the initial pre-test results, scores were below the passing grade of 67.40 (Satisfactory). Subsequently, during the one-to-one phase, the questionnaire responses collected by the researcher showed an average score of 4.2 (80.5%). in the small-scale test phase, the score was 4.38 (87.66%), and in the medium-scale test phase, it was 4.65 (93.16%); finally, in the post-test results, a score above the passing grade (KKM) was obtained, namely 92.3 (Very Good).

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