Digital-Based Media Flashcards in Primary School English Learning, is it Effective?

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ABSTRACT
Media pembelajaran yang efektif saat ini sangat dibutuhkan, seperti Flashcards Berbasis Digital untuk konten pelajaran bahasa Inggris kelas V sekolah dasar. Oleh karena itu, penelitian ini bertujuan untuk mengembangkan media pembelajaran Flashcard Berbasis Digital yang efektif untuk konten pelajaran bahasa Inggris kelas V sekolah dasar. Penelitian ini merupakan penelitian pengembangan (Research and Development) dengan mengadaptasi model pengembangan ADDIE. Pengamalan data dilakukan dengan menggunakan instrumen berupa angket dan tes hasil belajar. Data validitas media bersumber dari satu orang ahli desain, satu orang ahli media pembelajaran, satu orang ahli desain pembelajaran, dan satu orang ahli konten pembelajaran bahasa Inggris sekolah dasar. Data kepraktisan media bersumber dari tiga siswa untuk uji coba individu dan sembilan siswa untuk uji coba kelompok kecil. Proses analisis data dilakukan dengan menggunakan pendekatan kualitatif dan kuantitatif. Hasil pengembangan menunjukkan bahwa media pembelajaran Flashcards berbasis digital pada materi pelajaran Bahasa Inggris kelas V SD adalah sebagai berikut. (1) dinyatakan valid berdasarkan hasil penilaian ahli desain, ahli media, dan ahli isi. (2) dinyatakan praktis berdasarkan pengguna individu berkualifikasi tinggi, uji coba pengguna kelompok kecil dan uji keefektifan produk menggunakan teknik uji t yang memperoleh tingkat signifikansi. Penelitian ini menyiratkan bahwa media pembelajaran flashcard berbasis digital diperlukan untuk meningkatkan konten pelajaran bahasa Inggris untuk kelas V sekolah dasar.

Nowadays effective learning media is very needed, such as Digital-Based Flashcards for grade V elementary school English lesson content. Therefore, this study aims to develop an effective Digital-Based Flashcard learning media for grade V elementary school English lesson content. This research is development research (Research and Development) by adapting the ADDIE development model. Data collection was carried out using instruments in the form of questionnaires and learning outcomes tests. Media validity data is sourced from one design expert, one learning media expert, one instructional design expert, and one elementary school English learning content expert. Media practicality data were sourced from three students for individual trials and nine for small group trials. The data analysis process is carried out using qualitative and quantitative approaches. The development results show that the digital-based Flashcards learning media on the English lesson content for grade V elementary school is as follows. (1) be declared valid based on the results of the assessment of design experts, media expert, and content expert. (2) is declared practical based on highly qualified individual users, trials of small-group users and product effectiveness test using the t-test technique which obtain significance level. This research implies that digital-based flashcard learning media is needed to increase the content of English lessons for grade V elementary schools.

1. INTRODUCTION
English is one of the lessons implemented in elementary school students in Indonesia since grade 1 or 2. English is one of the foreign languages used as the language of communication of the entire world community. However, learning English is a new language for students, so a new way of learning is needed. There needs to be a habituation for students to use English (Guswita & Andriyanti, 2020; Juriana, 2017). Students already familiar with and attached to English should prepare themselves for global life (Bernadetta Eko Putranti, 2019; Williams, 2002).

English is the language of instruction in almost all countries. According to previous study estimates, there are more than 350,000,000 native English speakers and more than 400,000,000 English speakers as a second language (a language that is learned but not widely used in everyday life) (Kusuma, 2019). As Indonesian, English also consists of four skills that must be mastered. English consists of four basic skills: reading, listening, writing, and speaking (Hamer & Rohimajaya, 2018; Sharma & Puri, 2020). Previous study says there are better ways to
teach a language than grammar (Kusuma, 2019). The most effective method to learn foreign languages, especially English, is to use direct intuition, namely representation through existing images related to unfamiliar words.

Based on the experts' opinions above, it can be concluded that English learning needs to start from learning vocabulary often used in everyday life and using representations of related images, for example, related to daily activities, limbs, food, animals, and others. This is because it will be easier for students to learn foreign languages and other lessons using tangible things that students around them commonly encounter (Fansury et al., 2020; Permatasari & Hendratno, 2014). All aspects of these basic skills are essential to development because the development of one another is interrelated, so it must be integrated (Ilyosovna, 2020; Supina, 2018).

Flashcards are one of the many types of learning media in the form of picture cards that have a size of 25x30 cm. Flashcards media is a learning medium in the form of picture cards measuring 25x30 cm whose images are made using hands or photos or utilizing existing images/photos and then pasted on sheets of flashcards made (Suprianti & Jayanta, 2020; Timà et al., 2021). The contents of the flashcards can be modified according to the level of students, whether they are essential, intermediate, or advanced (Aba, 2019; Erviana & Andriani, 2019). Previous study argue that flashcards media is a learning medium that can facilitate students' learning process, especially in improving various aspects such as: developing memory, practicing independence, and increasing the amount of vocabulary (Wahyuni, 2020). The advantage of flashcards is that it helps the right brain remember images and words as their components (Fardà, 2018; Wati & Oka, 2021).

Based on the opinions of several experts above, it can be concluded that the advantages of flashcard media are that they are easy to carry anywhere, practical, easy to remember, and fun. These flashcards have a vital role in improving student learning outcomes, especially in increasing understanding of vocabulary and foresight in guessing an image correctly. In addition, if the use of this media is supported by appropriate learning methods and interactive multimedia applications, it will be able to bring students to an active and fun learning environment (Dewangga et al., 2017; Nuryani & Padloeli, 2021).

Based on the results of observations or observations made at SD Saraswati 3 Denpasar, a problem was found. Namely, the English vocabulary of grade V students still needed to be improved and required much practice. Students also said that the learning media teachers use in the classroom when learning English does not attract students' attention, so students feel bored and find it difficult to understand these subjects. Based on this background, this development aims to develop digital-based flashcards media in English subject's subject matter about regular and irregular verbs for class V students at SD Saraswati 3 Denpasar.

2. METHOD

This research includes development research or what is known as Research and Development (R&D). The research model developed in this study uses the ADDIE (Analyze, Design, Development, Implementation, and Evaluation) model, which is compiled programmatically with systematic activities to solve problems in learning activities and adjust to the needs and characteristics of students. This model has five steps or stages implemented to develop development products such as learning modules, learning videos, multimedia, and so on. The steps or stages of the ADDIE model are (a) analysis, (b) design, (c) development, (d) implementation, and (e) evaluation (Tegheh et al., 2014).

In this study, testing was carried out on media developed by several experts and students as test subjects. The experts involved are one design expert, one learning content expert, one learning design expert, and one teaching media expert. Then, for the students engaged during the individual trial, as many as three students each had high, medium, and low learning outcomes. In the small group test, nine students were involved. Each group consisted of three students with high learning outcomes, three with moderate learning outcomes, and three with low learning outcomes. All students interested in this testing are grade V students from the same class.

Two methods are used in collecting data: the test and the questionnaire. The test method gathers data that is carried out by giving question items to the research subject. This test method is used during the pretest and posttest to determine the effectiveness of the developed digital-based flashcard learning media product. The instruments used are multiple-choice tests that have previously passed validity tests, reliability tests, difficulty tests, and differentiation tests. Based on the four tests, 20 questions were obtained that were declared valid and suitable for use during the pre-test and post-test. The questionnaire method is a data collection technique by giving questions or statements to respondents that they must answer in writing according to actual conditions (Agung, 2018). This method tests the feasibility of the developed digital-based flashcard learning media product. Questionnaires are each given to design experts, learning content experts, learning design experts, and teaching media experts. In addition, three students who were test subjects in the individual trial and nine who were test subjects in the small group trial were also given questionnaires.

After the data is obtained, an analysis is carried out using analytical techniques according to the data type. This study used two data analysis techniques: quantitative descriptive data analysis techniques and inferential statistical analysis t-test techniques. Quantitative descriptive data analysis is a technique of processing data by
systematically compiling it into numbers or percentages to be interpreted to obtain conclusions in general (Agung, 2014). This technique is used to process data derived from the results of answering questionnaires by experts and students. Furthermore, inferential statistical analysis of t-test techniques is used to determine the effectiveness of digital-based flashcard learning media products developed by comparing pre-test and post-test data obtained by students.

3. RESULT AND DISCUSSION

Result

This research was carried out at SD Saraswati 3 Denpasar with the subject of research on all class V students totaling 35 students. This research aims to develop a product in the form of English-based digital-based flashcards media on the subject matter of regular and irregular verbs. The development of digital-based flashcard media is carried out using the ADDIE model. In the ADDIE model, there are five stages, namely (1) the analysis stage (analyze), (2) the design stage (design), (3) the development stage (development), (4) the implementation stage (implementation), and (5) the evaluation stage (evaluation).

The first stage is the analysis stage; at this stage, grade V students’ English vocabulary still needs to improve and requires much practice. This is evidenced by the results of the questionnaire analysis of student needs in English language learning that as many as 25 students out of 38 students find it challenging to understand the explanations of English teachers, especially in teaching material on the use of regular verbs and irregular verbs. These results show that 66% of students in grade V of SD Saraswati 3 Denpasar have low competence in English knowledge. Students also said that the learning media teachers use in the classroom when learning English does not attract students' attention, so students feel bored and find it difficult to understand these subjects. At the analysis stage, the identification of Basic Competencies and Indicators was also carried out by the curriculum used by SD Saraswati 3 Denpasar, namely the 2013 Curriculum, to adapt to the digital-based flashcard media developed.

The second stage is the design stage. At this design stage, it was obtained that a digital-based flashcard media design had been determined to be developed. Before creating digital flashcards, the analysis stage of digital flashcard components is carried out, such as deciding on media elements in the form of text, audio, video, and quiz questions. The design of digital flashcards is done using Canva application software, audio websites, and Microsoft Office PowerPoint using laptops ranging from opening cards to closing cards. At this design stage, a rough sketch is made of the product design, starting from the background, reasonable layout, and image layout to the form of the writing. The method of the learning video is also made by adjusting to the selected material, namely the material of regular and irregular verbs. Digital-based flashcards include the title flashcards, "Flashcards Regular Verbs Irregular Verbs," and the product developer's identity presented on digital-based flashcards. To facilitate the development of digital-based flashcards, the creation of flowcharts and storyboards is carried out. The purpose of making flowcharts and storyboards is that in addition to promoting media development, the existence of flowcharts and storyboards can also provide an overview of the workflow and arrangement of the presentation of learning materials to be more coherent and clear. After making flowcharts and storyboards, a learning implementation plan (RPP) was carried out, which was raced in the 2013 Curriculum.

The third stage is the development stage. The result of this stage is the development of digital-based flashcard media that refers to flowcharts and storyboards that have been designed previously. The story of digital-based flashcard media is carried out by adding components, ranging from images/illustrations, song backgrounds, and audio pronunciation of words and sentences to quiz questions on the material's topic. The final result obtained from this stage of development is a digital-based flashcards product that is ready to be implemented in research subjects through the product trial stage. At this stage of development, the product validity questionnaire is also carried out for several experts who will review the digital-based flashcards product to be developed. In addition to the product validity questionnaire, there is also the implementation of making pre-test and post-test questions that will be given to students. Pre-test and post-test questions are provided to know the initial understanding before applying digital-based flashcards in learning and the final knowledge after using digital-based flashcards in education. The media design stage is in Figure 1, and the development stage is in Figure 2.
Figure 1. Design Stage

Figure 2. Development Stage

At this stage of development, it also aims to determine the validity of the media being developed, find out students' responses regarding the feasibility of media, and improve the press according to the input that product validators have given. This stage is carried out by conducting expert tests consisting of design experts, learning material content experts, instructional design experts, and teaching media experts. Furthermore, a product trial was carried out to find out the student's response to the digital-based flashcards product that has been developed. The practice of this product includes an individual test of 3 students and a small group trial of 9 students.

The fourth stage is the implementation stage, where results have been obtained that the implementation of digital-based flashcard products has been implemented. At the product implementation stage, pre-test and post-test administration is carried out. A pre-test is given before implementing digital-based flashcard products to students, and post-test activities will be carried out after implementing digital-based flashcard products in the learning process. The implementation of the pre-test and post-test was carried out by all class V students, as many as 35 students. The implementation stage can be seen in Figure 3.

Figure 3. Implementation Stage
The last stage carried out is the evaluation stage. The evaluation stage is carried out to evaluate the data that has been collected. The evaluation carried out is a summative evaluation. Summative evaluation is carried out to determine the effectiveness or not of the product developed in the learning process by conducting an effectiveness test stage. The results of the assessment of experts and test subjects are presented in Table 1.

**Table 1. Percentage of Expert Trial Results and Trial Subjects**

<table>
<thead>
<tr>
<th>No.</th>
<th>Trial Subjects</th>
<th>Results (%)</th>
<th>Qualification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Expert Test of Design</td>
<td>90%</td>
<td>Excellent</td>
<td>Doesn’t Need to be Revised</td>
</tr>
<tr>
<td>2</td>
<td>Expert Test of Material Content</td>
<td>100%</td>
<td>Excellent</td>
<td>Doesn’t Need to be Revised</td>
</tr>
<tr>
<td>3</td>
<td>Expert Test of Learning Media</td>
<td>87.50%</td>
<td>Good</td>
<td>Slight Revisions</td>
</tr>
<tr>
<td>4</td>
<td>Expert Test of Instructional Design</td>
<td>90.63%</td>
<td>Excellent</td>
<td>Doesn’t Need to be Revised</td>
</tr>
<tr>
<td>5</td>
<td>Individual Trials</td>
<td>90%</td>
<td>Excellent</td>
<td>Doesn’t Need to be Revised</td>
</tr>
<tr>
<td>6</td>
<td>Small Group Trials</td>
<td>99.25%</td>
<td>Excellent</td>
<td>Doesn’t Need to be Revised</td>
</tr>
</tbody>
</table>

Furthermore, the results of the instrument quality test were obtained. Namely, the validity test of the test items received results, namely from 10 (ten) articles of the objective question test (multiple choice) that had been tested, and 5 (five) invalid (multiple choice) accurate question test items (drop) were obtained. Meanwhile, the validity test of the description question test items received results, namely from 20 (ten) test items of description questions that have been tested and 5 (five) test items of invalid description questions (drop) obtained. Thus, overall objective question test items (multiple choice) and description question tests obtained as many as 20 (twenty) valid test items to be used in the effectiveness test.

In the test item reliability test, results have been obtained that the objective question test instrument (multiple choice) has KR-20 reliability of 0.69 with the reliability qualification of the test item included in the capability of the high degree of reliability of the test. Meanwhile, the results of the reliability test item of the description question concluded that the test instrument for the description question has a reliability of KR-20 of 0.92, with the qualification of reliability of the test item included in the qualification of the very high degree of reliability of the test. In the test level of difficulty of the test items, the result was obtained that as many as 10 items of the objective question test (multiple choice) were included in the medium qualification. Meanwhile, the difficulty level of the description test items obtained results, namely, as many as 19 points of description questions were included in the medium qualification, and 1 item of the description question test was included in the easy qualification. Furthermore, the test item difference test obtained the result that there was 1 objective question test item (multiple choice) included in the excellent qualification, 7 items of the objective question test (multiple choice) included in the good qualification, 1 item of the aim question test (multiple choice) included in the stuff qualification, 5 items of the objective question test (multiple choice) included in the qualification of the very high degree of reliability of the test, and 7 items of the objective question test (multiple choice) included in the medium qualification, and 1 item of the description question test was included in the easy qualification. Meanwhile, the differences test of the description test items obtained the result that 15 points of the description test were included in the qualifications quite well, and 5 test items were included in the qualifications that could have been better.

The product effectiveness test is implemented by conducting a prerequisite test consisting of a normality test of data distribution and a homogeneity test. It continues on inferential statistics of the t-test technique. The results obtained from the normality test of data distribution were 3.54 for pre-test results and 7.86 for post-test results. In the homogeneity test, the result was obtained 3.71, which can be concluded that $F_{\text{simu}} < F_{\text{table}} (n1, n2, 1)$, that is $F_{\text{count}} (3.71) < F_{\text{table}} (3.98)$, so $H_0$ is accepted, which indicates the data is homogeneous. Furthermore, the results obtained from implementing the correlated t-test technique got $t_{\text{count}} = 11.176$ for degrees of freedom $= 35$ and significance levels of 5% $\alpha = 2.03$. This shows $t_{\text{count}} \geq t_{\text{table}}$, so $H_0$ is rejected, and $H_1$ is accepted. Based on the test criteria, $H_0$ is rejected dan $H_1$ is accepted, which means that there is a significant difference (5%) in students’ English knowledge competence after using digital-based flashcards on the regular verb and irregular verbs in class V of SD Saraswati 3 Denpasar for the 2022/2023 School Year.

**Discussion**

Based on the results of the data analysis that has been carried out, the digital-based flashcards media that have been developed can be declared valid and feasible to be used in helping students improve their competence of knowledge of learning English on the material of regular verbs and irregular verbs. Digital-based flashcard media get very well qualified and are worth applying due to the following factors. First, flashcards, especially in digital form, can attract students’ interest in learning (Audie, 2019; Wati & Oka, 2021). According to previous study an exciting learning medium is a positive stimulus for student development (Nuryani & Fadiloeli, 2021). Through suitable learning medium, children will be helped to understand the material presented by the teacher. The learning process for elementary school students needs special attention because learning in the classroom will affect the development of children. The development of elementary school children at this time is an excellent opportunity for educators and parents to maximize their growth and potential. In addition to preparing children for...
the following education, elementary school education can be used to recognize students' potential so that they can be optimized optimally. In addition, primary school education is an excellent time for teachers to form concepts and prepare them for further education (Maryanto & Wulanata, 2018; Muhardi, 2004). Engaging in learning media positively influences children by increasing their motivation to learn. Learning media stimulates students to understand the material presented by the teacher (Alvita & Airlanda, 2021; Apriyanti et al., 2020). Elementary school students are susceptible to the stimulus provided, so teachers can use it to provide a solid basic concept for children. The inspiration delivered also needs to be considered with the level of child development because each child has a different developmental period.

The development of digital-based flashcards media is developed according to the needs of students in the learning process and student characteristics. Selecting appropriate media and material topics will produce interactive learning so that the material presented can be adequately conveyed, understood by students, and remembered well by students as a provision of knowledge at the next level. Learning in elementary school students can also be designed with the method of playing while learning because games are one of the fun ways and can be applied in classroom teaching to increase student motivation and enthusiasm for learning (Fidiyanti, 2020; Utami, 2021). By using the method of playing while learning, students will have the motivation to learn, and teachers are helped to create a creative learning process. The learning process is more complicated than expected (Anisa Fitri, 2018; Shafa et al., 2022). In addition to being well prepared, teachers as professional educators also must equip themselves with qualified teaching skills. Learning media plays an essential role in the learning process, conveying information to students. Therefore, learning media can be optimized to help teachers clarify what they want to convey and make learning more innovative. In a time with technological advances like today, teachers have the opportunity to create and choose a variety of learning media that are creative and innovative and can be tailored to the needs of students (Hayati, 2021; Rfitqowan, 2016). With the help of technology, teachers can develop learning media according to their wishes, such as this digital-based flashcards.

Digital-based flashcard products in this study were strengthened by findings in previous studies, which stated that the flashcard media developed had a positive influence on increasing student interest in learning. Previous study also explained that using flashcard multimedia applications can improve the quality of student learning in English vocabulary (Dewangga et al., 2017). Digital-based flashcards can be used flexibly because they can be used through gadgets or laptops (Erviana & Andriani, 2019; Susantini & Kristiantari, 2021). Flashcard media can also create a more varied, less monotonous, and innovative learning process (Adhani et al., 2016; Okdiansyah et al., 2021). In addition, the updates made in this study are to use a digital application base, namely Canva, in the manufacturing process and PowerPoint Stand Alone in its application to increase audio variations in digital-based flashcards to increase student interest in following the learning process (Aba, 2019; Nasution, 2020).

The implication of this study develop digital-based flashcard media which can help students to more easily understand the learning material because the material presented has been packaged and supported by various images, text, audio, and also clear explanations. The digital-based flashcards media developed also streamline students’ learning methods, can be accessed anytime and anywhere, and can be used repeatedly to understand the material well. The use of digital-based flashcards empirically proves the implications of this study. This research has gone through a validation test consisting of expert validation and empirical trials but the empirical trials of this study were only tested in a short time so that the results of this study were not providing long-term impact. Therefore, it is hoped that future research will be able to further deepen and broaden the scope of research with similar topics.

4. CONCLUSION

The product of this development research is a digital-based flashcard learning media on English lesson content of regular verb and irregular verb material in class V elementary school. Digital-based flashcard learning media is suitable for English learning regular verb and irregular verb materials in class V elementary school. This digital-based flashcard can attract students' attention and motivate them to be enthusiastic about learning and understanding English material that is quite complicated and complex. In addition, this digital-based flashcard learning media positively impacts teachers' views on technological developments that can be appropriately used to help the learning process.

5. REFERENCES


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