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Development of Android-Based "Megowan" Learning Media (Knowing Animals) for Class V Elementary School Students

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ABSTRACT

Technology carries many advantages, especially in the field of education. Linearly, students and teachers also get the benefits advantage by developing Android-based media for the learning process. This development research aims to make Megowan learning media based on Android on material that classifies animals based on their type of food for grade V elementary schools. In the long term, we also aim to identify the effectiveness and practicality of Megowan learning media for students, as well as improve student learning outcomes. This RnD (Research and Development) used ADDIE (Analysis, Design, Development, Implementation, Evaluation) research model. The research subjects were 12 fifth-grade students at State Primary School Gedang 2 Porong. Meanwhile, the research instrument was in the form of posttest and pretest. Megowan media was validated by learning media and material experts. Then, small group trials were carried out on sixth-grade students of State Primary School Gedang 2 Porong. The feasibility test results of android-based megowan media, in the technical aspect, showed 90% of presentation score, along with 80 and 85.71% of presentation feasibility and graphic feasibility, which is included in the very good or excellent category. Meanwhile, the feasibility test from the material experts showed suitability between the material with basic competence of 80%, the accuracy and correctness of the material at 80%, and the linguistic aspect of 80%. Thus, it is in the very good or very decent category. The results of the small group trial tests reached an 81.25% score, which was included in the very good category. Therefore, it can be concluded that Android-based megowan media is feasible and can be implemented in the learning process.

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Technology is a useful instrument for reducing uncertainty to achieve the expected results. The development of technology has important implications, both positive and negative. In education, technology serves as a quality resource in supporting the classroom learning process (Jamun, 2018). Another positive impact of technological developments is the emergence of numerous learning applications, such as interactive learning media, that can provide support in understanding and enhancing new information for students and teachers. However, technology also presents a negative impact since students can be addicted to smartphones, especially when they are at a young age (Khotimah, 2019). Consequently, it decreases students' interest in learning. Therefore, the technology carries numerous benefits, especially in the world of education. The valuable learning technology also facilitates students in finding information during the learning process. Thus, as educators, teachers can utilize good learning media by adjusting the media to the recent situation. During the learning process, teachers need learning media as the media provide convenience in delivering material to students, so learning media enables more effective and fun learning. Aside from the teachers, students also need media to enhance students' understanding of the subject matter. Technology-based learning media visualizes material related to classifying animals based on their type of food (Nasution, 2018). Technological developments are urgently needed as facilities and infrastructure that improve education quality during the teaching and learning process. In this study, we utilize technology development to help students get to know animal grouping according to their type of food. Our constructed Android-based application can help students learning the group of animals according to their type of food in a fun way. Thus, its application is expected to serve as medium to increase students' understanding and interest in learning science material, especially in classifying animals based on the type of food. Therefore, learning media based on Android is considered very appropriate to

be used as a learning medium. Additionally, the assumption that Android only has a destructive impact on students can be overcome by utilizing it as a modern learning medium.

According to Allah's Word in Al-Qur'an Surah Al-A'la (87:8)

وَنُيَسِّرُكَ لِلْيُسْرَىٰ

Translation: "And we will make it easy for you to the path of ease (attaining the happiness of the world and the hereafter)." Therefore, technology is a source of convenience that has been given by Allah SWT. The results of our observation on science learning in the fifth grade of the elementary school in several schools in Sidoarjo suggested that students experience great boredom during the learning. Some teachers carry out the learning using a lecture model, which lowers students' lack of learning interest. Further, we also identified the following conditions based on the results of interviews with teachers in fifth grade related to science learning: (1) students' lack of understanding regarding the grouping of animals according to the type of food, (2) non-optimum learning in class as they only use thematic package book media, (3) students learning material related to grouping animals according to the type of food, (4) students' lack of enthusiasm in the grouping of animals based on their diet, (5) students feel the delivery of material is monotonous without real media that construct more fun and exciting learning, and (6) students regard the material of grouping animals according to the type of food as difficult because they do not really understand examples of classifying animals based on the type of food. Under these circumstances, learning media are needed to support science learning, especially the media that can stimulate students' interest in science material.

A previous study reported that Android is an operating system that can be designed on a touchscreen mobile device, one of which is a tablet and smartphone (Maulana Wakid Rochman Moh, 2017). The use of Android media as a learning tool is exciting because it combines various types of media, including visual, audio-visual, and audio. Attractive presentation of a learning media can accelerate students learning interest (Maulana Wakid Rochman Moh, 2017). The use of Android-based mobile learning media can also help students expand their creative and independent learning. Meanwhile, in this study, we used educational game models consisting of levels of quiz menus and material complemented by music. In addition, the designed Android application has more interactive visuals considering shapes, images, and composition. Thus, the android application can provide effectiveness in increasing students' learning interest.

In a previous study entitled "Introduction to Animals Based on the Type of Food (Pewandakan) With Android-Based Augmented Reality Technology", "Pewandakan" game is designed to stimulate the students' mind by increasing their concentration and problem solving skills. In addition, this game can be used as a learning medium while playing games. Therefore, the use of Android-based games can help students understand the concept of classifying animals according to their type of food. The "Pewandakan" game can also be used outside of school activities. This is in accordance with research uncovering that the media really helps students in the learning process. Similarly, in this study, we also used Android media as a learning tool (Pradana, 2019). Our differences from the available previous studies rely on our developed product, which is called Megowan, in the form of a virtual flashcard (Rahayu, 2020). At present, the need for learning media must be considered because of the students' recent learning needs. Besides, the learning media must be packaged in a modern, attractive, interactive manner, with enough space and a sustainable nature.

From the aforementioned discussion, this study developed a classic game media which had been tested on students who could not understand the material. Besides, this media had also undergone a validity test involving experts. Tin the tryout process, the participants were able to show good progress and get good ability in classifying animals based on their type of food. Therefore, this classic game media was developed into an Android-based media, namely "MEGOWAN" Getting to Know Animals. Megowan media was intended for fifth-grade elementary school students, primarily to train students to recognize the classification of animals based on the type of food they eat. Different from the available studies, this developed Megowan media contains various games. Megowan is Android-based media that can be used offline, so students can use it anytime and anywhere. The purpose of this study is to describe the level of practicality and validity of android-based Megowan (Knowing Animal Classification) learning media in classifying animals based on the type of food for fifth-grade elementary school students. Besides, this study also describes the effectiveness of Android-based Megowan (Knowing Animal Classification) in facilitating students learning on animal classification material based on their type of food.

METHOD

This study used the R&D *(Research and Development)* method with ADDIE design. The ADDIE development model has five stages, namely. In detail, the stages of Megowan media development are illustrated in Figure 1.

The initial stage was Analyze (analysis) which contained problem analysis, material analysis, and student analysis. In the stage of analysis, we collected the necessary information through observations and interviews with fifth-grade students and teachers in several schools in Sidoarjo, Indonesia. The results of observations showed that, on average, fifth-grade students still faced difficulty classifying the animal samples into omnivores or herbivores. For instance, many students gave the incorrect response in classifying cats because many of them thought cats as omnivorous animals. Besides, some of them also classified chickens as herbivorous. This happened because many students frequently saw chickens eating rice or plants. Similarly, students only learned from thematic books, so the delivery of the material was not optimal, causing problems that lower student understanding. Therefore, interactive and practical media are needed for students concerning the classification of animals based on their type of food.

The second stage was design (design), where we designed media using a storyboard. At this stage, we also implemented the original design in product development, according to the results of interviews and observation with fifth-grade teachers and students at State Primary School Gedang 2 Porong. Further, we also carried out media and material planning. Planning was carried out 0 according to the characteristics of fifth-grade students, as well as according to student needs and material adapted to KI (main competence) and KD (Basic Competency) for animal classification based on the type of food material. In designing the product, we consulted with several parties, including fifth-grade elementary school teachers, supervisors, and technically competent programmers, to ensure the products' capacity for resolving the existing problems.

The third stage was development, where we developed an Android-based media product together with technically competent programmers. The produced media was validated by media experts, namely the lecturers who are experts in learning media. We also conducted a material validity test involving the science subject teacher. At this stage, we prepared validation sheets, teacher questionnaires, and student response questionnaires to investigate the validity, feasibility, and effectiveness of the product being developed. In the next stage, we conducted media validation involving the learning media and material experts.

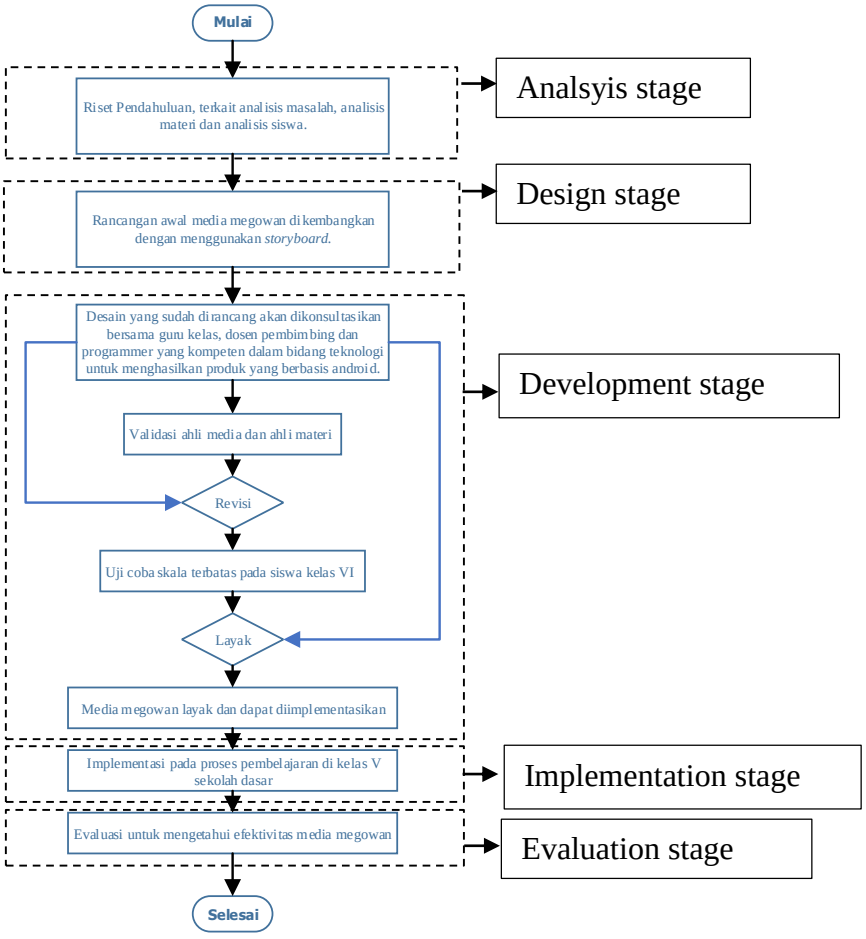

Figure 1. Megowan Android-Based Media Development Procedure

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The instrument for learning media experts' validation was a validation questionnaire concerning the media presentation techniques, presentation feasibility, and graphic feasibility. Meanwhile, for the material validation, the questionnaire's indicators included the accuracy of the material, the correctness of the material, and the language of the media. The results of learning material and media validation are summarized in tables 1 and 2.

Table 1. Material Expert Validation Indicators

Validated components	Indicator
The suitability of the material with basic competence	a). Material clarity b). Accurate use of language
Material accuracy and correctness	a). Compatibility of the media with the material b). The suitability of the material with Quiz c). Conformity of the game with the material d). The materials are arranged practically and systematically
Language	a). The accuracy of the language used b). Simplicity of sentence structure c). Sentences easily understood by students

Source: (Hasanah, FN, 2022) (Nur Hasanah, 2022)

Table 2. Media Expert Validation Indicators

Validated components	Indicator
Serving technique	a). Ease of use of "megowan" media b). The cramped presentation of the media "megowan" c). Clarity of instructions used in the media "megowan" d). Image clarity
Feasibility of presentation (contents)	a). The suitability of the layout of buttons and text b). The accuracy of the layout of buttons and letters
Graphical eligibility	a). Backsound quality and sound clarity b). The accuracy of choosing the size, color, background and legibility of *the font*

Source: (Hasanah, FN, 2022) (Nur Hasanah, 2022)

In the fourth stage, we tried out the Megowan media on the learning involving 12 fifth-grade students of State Primary School Gedang 2 Porong. Through this tryout, we aim to find out the level of practicality of Megowan media developed through posttest results and pretest.

The fifth stage was evaluation (evaluation), where we evaluated the effectiveness of the media in the learning process through the teacher's and student's answers. This process aims to examine the successful implementation of megowan media. In the data analysis process, we used the following formula (Nur Hasanah, 2022).

$$P = \frac{\text{total score obtained}}{the\ maximum\ score}\ x\ 100$$

Information:

Q : Research percentage

This development research used questionnaires to determine the feasibility level of the developed media. The obtained scores were analyzed using descriptive quantitative to identify the feasibility of the product. The validation assessment criteria used are described in Table 3 (Akbar, 2013).

Table 3. Criteria for Eligibility

Percent (%)	Eligibility Level	Description
80% - 100%	Very Decent/ Very Good	Can be used without revision
61% – 80%	Decent/ Good	Minor revisions may be used
41% – 60%	Decent Enough/ Good Enough	Can be used with great
21% – 40%	Less Decent / Less Good	Can not be used
0% - 20%	Very Inadequate/Very Poor	Can not be used

Source: (Hasanah, FN, et al, 2021) (Hasanah et al., 2021)

The obtained data were in the form of quantitative and qualitative data. Quantitative data were obtained from the validation of media and material experts. Meanwhile, the results of the media practicality were obtained from the results of student and teacher questionnaires, while the effectiveness of the media was obtained from the posttest and pretest. The qualitative data were from input and suggestions from media experts and from material experts.

The practicality of Android-based "Megowan" media (knowing animal groups) on animal classification based on their type of food was calculated from the teachers' and students' responses to the questionnaires. In measuring the effectiveness of the media "Megowan" (knowing animal groups), we used the data from the pretest and posttest, with the standard minimum score of 78. These data were calculated using the Gain score. The attained N-Gain scores are shown in Table 4 (Sundayana Rostina, 2018).

Table 4. N-Gain Score Category

N-Gain Value	Category
$G > 0.7$	high
$0.3 \leq g \leq 0.7$	Low
$g < 0.3$	Currently

RESULTS

The Android-based "Megowan" learning media was developed using the ADDIE model. The first stage in the development of the "Megowan" media was analysis (analyze), where we conducted the initial observations and interviews at several elementary schools in Sidoarjo, Indonesia. The observations were carried out through several stages. First, analysis of the student's existing problems in classifying animals based on their type of food, difficulty in giving examples of animal classification based on their types of food, and problems in using technology media in the education process. Second, we conducted interviews with several students and also teachers in several schools in Sidoarjo, revealing that for classifying animals based on the type of food material, they only used books and videos from YouTube as their media. Further, we conducted interviews with fifth-grade elementary school students in order to find out the problems or obstacles faced by students in understanding the animals' classification based on the type of food. The results suggested students' difficulties in distinguishing the omnivorous group and the shape of the teeth in each group of animals. Third, we analyzed the material according to the core competency (KI) and basic competency (KD) for grade V in accordance with the 2013 curriculum, namely analyzing the relationships between ecosystem components and food webs in the surrounding environment.

The next stage was design. We designed the media and prepared the material by consulting the fifth-grade teachers, supervisors, and also expert programmers in the field of technology. At this stage, we prepared the material that was in accordance with the essential competencies of the 2013 Science Curriculum for class V of elementary school. The media was designed and arranged according to the character and needs of students. Learning media was made Android-based and equipped with music features, while its background was a forest theme with several types of animals. The media attractiveness is enhanced by its three menus. The first menu is for material which contains the material of classification of animals based on the type of food, along with the examples and characteristics of each animal according to its food group. Then on the games menu, the user can play the games according to the commands in the games. After completing the games, students will attain scores. There is also a menu for evaluation of "Megowan" media users to measure their ability to classify animals based on their types of food. At this stage, we also created an instrument to measure the qualifications of the produced learning media. Simultaneously, we also prepared questionnaires for students and teachers to measure the learning media. Then, we developed the media storyboards. The design of the "Megowan" media was created to ease the development process of "Megowan" media using software construct 3. The storyboard for the development of the Megowan media is shown in figure 2.

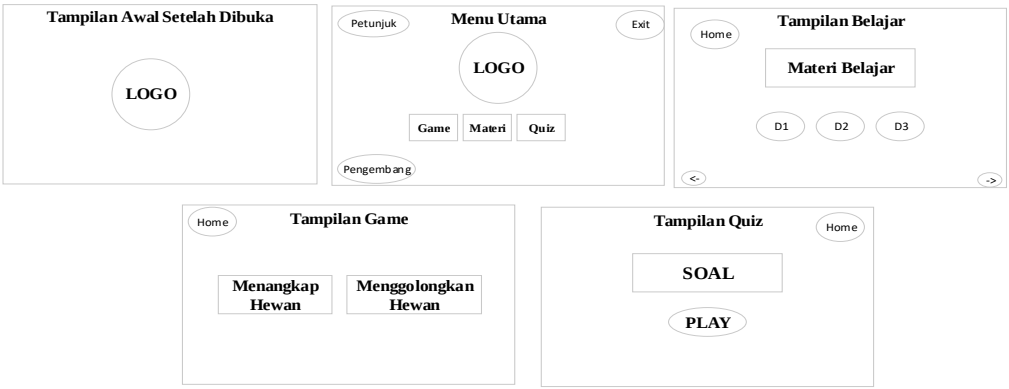

Figure 2. Megowan Media Storyboards

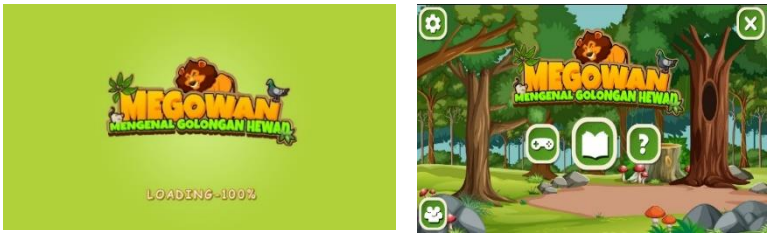

Figure 3. Initial Display and Main Display

The third stage is development. At this stage, the learning media was developed into an Android-based learning media, "Megowan" (Knowing Animals), for the fifth grade of elementary school. At the media development stage, we used software construct 3. In this stage, we also carried out the validity test of the media and trials involving sixth-grade elementary school students. The initial appearance of the Megowan media displays the media logo. Furthermore, on the main page, there are several menus, namely the settings menu, the developer profile menu, the materials menu, the games menu, and also the quiz menu. The appearance of the initial menu and main menu is shown in figure 3.

Figure 4. Material Display

The display of the material menu contains material following the Core Competencies (KI) and Basic Competencies (KD) of fifth-grade elementary school students described in the 2013 curriculum, namely analyzing the relationships between ecosystem components and food webs in the surrounding environment. There are several materials in this menu, namely, understanding, characterizing, and examples of animals according to their classification based on their type of food. The material is arranged concisely to avoid students' boredom in learning. The appearance of this menu is shown in Figure 4.

On the games menu, there are two kinds of games, catching animals and classifying animals. On the games menu, the user can play the games according to the instructions, complete with the score and time for each of these games. In the game capturing animals, the user must catch various kinds of animals according to the commands in the game. Also, in games, to classify animals, the user should put the animal in the box according to the instructions in the game. Apart from those, there is also a quiz menu where it displays several multiple-choice questions with a time limit for each question. Further, the evaluation menu measures the ability of users to understand the material. If the user answers the question correctly, then a correct white text will appear, conversely, if the user answers incorrectly, a wrong red text will appear. The games menu display and quiz display are shown in Figure 5.

Figure 5. Display of Games and Quiz

Furthermore, the developed product underwent a validity test involving the learning material and media experts. The purpose of this validity test on learning media was to find out the learning media's capacity to facilitate learning before it was tried out by sixth-grade elementary school students. At this stage, the "Megowan" media received suggestions from the media validators before the media was tested on sixth-grade elementary school students. During the validity test, the participating experts were provided with assessment instruments, so they only needed to tick the 1 to 5 scores. The results of the validation (from both the material and media experts) and trials are shown in table 5.

Table 5. Expert Validation and Trials Results

Validators	Indicator	Percentage (%)
Media Expert	Presentation technique	90%
	Presentation eligibility	80%
	Graphical eligibility	85.71%
Material Expert	Aspects of the suitability of the material with basic competence	80%
	Aspects of accuracy and truth of the material	80%
	Linguistic aspect	80%
Media Trials	Instructional Media	80%
	Material	84%
	Benefit	70%

Material validation for the android-based "Megowan" media was carried out by involving a fifth-grade teacher of State Primary School Gedang 2 Porong on February 1, 2023. There were three aspects contained in the assessment instrument, namely 1) suitability aspect, 2) accuracy aspect, and 3) linguistic aspect. The aspect of the suitability of the material with essential competencies includes the clarity of the material presented and the correctness of the content of the material according to the basic competence of Curriculum 2013. The aspects of accuracy and correctness of the material consist of the suitability of the media with the material, the suitability of evaluations or questions in games with the material, the attractiveness of delivery of material, and the preparation of material. The linguistic aspect includes the accuracy of language usage, the effectiveness of the sentences used, and the ease of understanding sentences. For the calculation, we used the percentage technique by using a Likert scale with a 1-5 scale. For filling in validation sheets, the experts have to tick (√) in the columns according to their assessment. In this material assessment, there are 12 questions. The results suggested a score of 48 from the highest score of 60, or 80% score. This score was categorized as very decent or outstanding category showing that the media can be used without revision.

The media validation was carried out involving the media expert of Multimedia lecturers from the Education Information Technology Department, Faculty of Psychology and Education Sciences, University Muhammadiyah Sidoarjo. This validity test was carried out on February 1, 2023. In this validity test, there were three aspects, namely (1) presentation technique 90%, (2) presentation feasibility 80%, and (3) graphic feasibility 85.71%, obtaining scores of 90, 80, and 85.71%, respectively. Aspects of presentation techniques include several indicators, namely the attractiveness of the logo, the ease of use of Megowan media, the attractiveness of the media display, and the clarity of the menu in the media. The presentation feasibility aspect also includes several indicators, namely the suitability of the layout and image proportions, the suitability of the font, and the accuracy of the button layout. Meanwhile, the graphic feasibility aspect also contains several indicators, namely background suitability, color use, letter color accuracy, letter clarity, background sound accuracy, background sound quality, and non-distracting background sound. The media validation instrument consists of 14 questions, with 60 scores obtained from the highest 70 scores (85.71%), representing an excellent category. Even though the validation results suggested that the constructed media was excellent, we still revised it following the suggestions from the media experts by enlarging the images of the teeth of carnivorous or herbivorous animals, as shown in table 6.

Table 6. Media Revision After Validation

Revised Points	Before Revision	After Revision
Enlarge the image of the of carnivorous or herbivorous animals' teeth		

The fourth stage was the implementation stage. This stage was carried out through small group trials involving ten sixth-grade students from State Primary School Gedang 2 Porong on February 15, 2023. Students were given or shown the media and directed in the use of media "Megowan." Then, the students were allowed to operate the media by themselves and complete the evaluation on the "Megowan" media. The results of this tryout suggested that the constructed media has excellent results. Then, we continued to test the media's suitability for fifth-grade students. To identify the effectiveness of "Megowan" media, we administered a pretest and posttest to 12 fifth-grade students before and after they used "Megowan" media. The pretest and posttest were given to students to identify students' skills in understanding animals classification based on the type of food before and after they used "Megowan" media. The results of the pretest and posttest are shown in table 7.

Table 7. Pretest and Posttest Results

No	Student's name	Pretest	Posttest	Results
1.	WANT TO	90	100	1
2.	EJYS	80	100	1
3.	SZF	90	100	1
4.	MFA	90	100	1
5.	NAR	50	90	0.8
6.	MINH	80	100	1
7.	ASV	90	100	1
8.	SRO	90	100	1
9.	ca	70	80	0.33
10.	RO	80	100	1
11.	rad	80	100	1
12.	NPW	30	80	0.71
	Mean Score	920	1,150	10.84
		76,66	95.83	0.90

The attained pretest and posttest scores were calculated using the N-Gain formula, resulting in 0.90 scores, classified as capable of increasing the students' learning outcomes after using the media "Megowan." This finding signifies that the "Megowan" media with the material of animals classification based on their type of food is effective as a medium to help the fifth-grade students at State Primary School 2 Porong that improves students learning results and understanding.

The next stage was evaluation *(evaluation*). It was the final stage for "Megowan" learning media development. In the implementation stage, we aim to find out the effectiveness of the "Megowan" media. Meanwhile, in the evaluation stage,, we carried out the practicality of the "Megowan" media by giving questionnaires to students and teachers. We distributed questionnaires to students, consisting of 16 questions with a 1-5 scale by ticking (√) on the score of each item. The questionnaire was given to 10 sixth-grade students at State Primary School Gedang 2 Porong. The obtained score of the questionnaire was 650, from the total score of 800, so it attained an 81.25% score that can be classified as very good or very practical in helping students in learning animal classification based on their type of food. The results of the practicality of the "Megowan" media can also be seen in the response of the fifth-grade teacher at State Primary School Gedang 2 Porong. The questionnaire contained 16 questions with a 1—5 scale. From this questionnaire, we obtained a 68 score from the total score of 80 (85%), classified as excellent or very practical.

DISCUSSION

In the development of technology-based media in the world of education, it is necessary to involve the latest innovations to overcome current problems. This innovation can be observed in the increasing usage of technology over time, which can provide improvement in the world of education. As a result of the continuous technological progression, it is necessary to create recognizable or trendy media in order to arouse students' curiosity. Thus, we developed Android-based media to create effective

and innovative learning. Research on the learning media development on animals classification based on their type of food has also been carried out by (Auliyah, 2021), aiming to develop interactive learning media for elementary school students in the material of grouping animals based on their type of food. That study also aims to provide students' sense of enthusiasm for learning. The media constructed in this study is an application based on Google Sites that includes features, material, video, media, and evaluation. In the material feature, students can access the teaching materials, so they can read on their own. Besides, the material is summarized easily so that users feel interested in the material. The video feature provides videos explaining material classifying animals based on their type of food sourced from YouTube. The media feature provides media or crossword games, while the evaluation feature offers a Google form and animal grouping questions based on their type of food.

Different from the previous studies, this research develops an improved version of media following students' needs. Thus, our developed media is trendy and capable of increasing students' interest in learning. Media "Megowan" is constructed based on Android and equipped with features that present simple and easy-to-understand material and pictures. In the game feature, there are two games, namely catching and also collecting animals according to commands games, then in the evaluation feature, students will work on questions.

At the development stage of "Megowan" media, we carried out material and media validation to evaluate the media rationally involving the experts. At this stage, we also carried out media validation involving media experts and material validation involving material experts. Media validation was carried out by multimedia lecturers from the Department of Education Information Technology, Faculty of Psychology and Education Sciences, Muhammadiyah University Sidoarjo. This validity test was carried out on February 1, 2023. The result of media validation was 60 from a total of 70 scores (85.71%), categorized as excellent. The validation of material was carried out by involving the fifth-grade teacher from State Primary School Gedang 2 Porong on February 1, 2023. The result showed 48 scores from a total of 60 scores (80%), suggesting that "Megowan" can be included in the outstanding category. Based on the results of media and material validity on "Megowan" media, the "Megowan" media has secured very good results. So the media "Megowan" can be used to assist teachers in the process of teaching and learning activities. Besides, the "Megowan" can be used as an alternative media in animal classification based on their type of food material.

To find out the practicality of the developed media, it is necessary to conduct a survey using questionnaires to students and also teachers. In this stage, we involved ten sixth-grade students. We distributed a questionnaire sheet containing 16 questions with a 1—5 scale. Meanwhile, for the teachers, we gave a questionnaire consisting of 12 questions with a 1-5 scale. Questionnaire sheets were distributed to students after product trials. The obtained results showed an 81.25% score which was included in the very decent category or very good category. Therefore, the "Megowan" media can help students understand the classification of animals based on their type of food material. Meanwhile, from the teacher questionnaire, we obtained 85% results which were included in the very practical or outstanding category. Therefore, the "Megowan" media is efficient for being used by teachers in the process of teaching and learning activities.

To measure the effectiveness of a media, a pretest, and posttest are also required. Therefore, in this study, a pretest and posttest were given to fifth-grade students of State Primary School Gedang 2 Porong. The pretest aims 0 to find out student learning outcomes on 0 material for classifying animals based on the type of food before using the "Megowan" media. The pretest questions were given to 12 fifth-grade students of State Primary School Gedang 2 Porong, resulting in an average result of 076.66. Besides we also conducted a posttest. The posttest aims to identify student learning outcomes in the animal classification material based on their type of food after using "Megowan" media. The average result obtained in the posttest was 95.83.

The calculation results of the average pretest and posttest using the N-Gain showed a 0.90 score, included in the great category representing a high increase in students understanding of the material. Thus, the Megowan media is very effective for being used in the process of teaching and learning activities because students experience increased results after using "Megowan" the media. This finding is linear with (Citra & Brillian, 2020) reporting that the success rate of media can be observed from student learning outcomes. The increase in learning outcomes without a decrease showed that the media can be said to be effective. In contrast, the decrease in learning outcomes demonstrated that the media is ineffective.

CONCLUSION

Our analysis results suggested that the "Megowan" (Knowing Animals) media based on Android for fifth-grade students of elementary school was constructed using the ADDIE model. This model contains five stages, namely analysis, design, development, implementation, and evaluation. The android-based "Megowan" (Knowing Animals) media for fifth-grade elementary school students attained very decent or excellent results from the media validation score of 85.71% and the material validation score of 80%. The results of the survey involving sixth-grade elementary school students attained 81.25%, categorized as very well, while the survey involving the teachers showed of 85% score, classified as very well. Also, the learning media "Megowan" (Knowing Animals) based on Android has proven to be effective, as the pretest and posttest data showed average

scores pf of 76.66 and 95.83. The final result of the N-Gain calculation showed a 0.90 score which is included in the great improvement category.

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