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Development of Simulation Flashcard Media for Ngoko and Krama Vocabulary at SDN Sukorejo Tugu

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ABSTRACT

This research is based on the existence of problems in Javanese language learning in grade IV. Students consider the Javanese uploading material to be difficult material. Educators use the lecture method more, without the help of learning media so that students are bored. Therefore, the researcher developed a flashcard media for ngoko and krama vocabulary through a simulation method with the aim of helping students understand the differences and use of ngoko and krama vocabulary. This research uses the type (R&D) with the ADDIE model consisting of Analysis, Design, Development, Implementation, and Evaluation. The results of the study showed that (1) The development of flashcard media obtained 80% (valid) results from material expert validators, 97.3% (very valid) media expert validators, 96% (very valid) results from question validators. The results of the teacher trial were 100% (very good), the results of the small group trial were 86.7% (very good) and the results of the large group trial were 90.83% (very good). (2) The feasibility of flashcard media can be seen from the results of increasing pre-test to post-test scores. The average result of the pre-test score was 50.00 to 87.50 in the post-test results, so there was an increase of 37.50 points. This proves that the flashcard media of ngoko and krama vocabulary through the simulation method is declared suitable for use as a learning medium in Javanese language subjects in grade IV elementary school.

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1. INTRODUCTION

The development of education in this modern era requires an educator to have innovation in the learning process, so that students can learn more effectively, interestingly, and gain meaningful experiences. However, the reality is that there are still many educators who use conventional methods and are centered on educators, so that students become passive and have difficulty understanding the learning material. One alternative to overcome this problem is by developing creative learning media according to the needs of students. Piaget argues that children at the elementary level are at the stage of concrete operational development [1]. This stage is a stage where students can understand something abstract through the help of real objects or objects that can be seen directly (visually) [2]. Without the help of real objects or only explained orally, students will find it difficult to understand abstract things.

The development of visual media that is widely carried out at the elementary school level is the development of flashcard media. Flashcards are media in the form of rectangular learning cards that have two sides with one side containing images and the other side in the form of definitions or text that help students remember the subject matter.[3] Muhammad Rijalul also argued that flashcards are cards or learning that are used to remember material, in the form of a rectangle in which there is writing or images on it. [4] In addition, this flashcard media is able to train the right brain's ability to remember images and words, so that children's vocabulary and vocabulary skills can be trained and improved. The development of flashcard media is a creative idea that can be applied to the learning process, as well as applied to learning the Javanese language.

Javanese is a language that can create a person's character and politeness value because it has upload-ungguh, which is a level in the language that is adjusted between the speaker and his speaking partner, so that there is a difference in language when talking to parents and friends of his age. Sry Satriya Tjatur Wisnu Sasangka argues that the Javanese language can be eminically divided into two, namely the form of ngoko (variety of ngoko) and krama (variety of krama). [5] Law No. 20 of 2003, article 37 paragraph 1 explains that one of the primary and secondary education curricula must contain local content. Javanese language subjects are one of the local content determined by educational units in East Java. [6] The goal is to teach and apply the Javanese language from an early age, so that it can also be used as a means to preserve Javanese cultural values. Based on the results of the researcher's initial observation at SDN Sukorejo Tugu Trenggalek, during the learning process, students still use the ngoko language when talking to their teachers, they do not know the krama equivalent of the ngoko language they speak and they feel that this Javanese uploading material is difficult to understand. This is because the learning still uses the lecture method without any media assistance. Therefore, there is a need for the development of learning media to help overcome these problems.

The learning media that will be developed by the researcher to overcome the difficulties of students in understanding ngoko and krama vocabulary in Javanese language learning is a flashcard learning media that is collaborated with a simulation method. Hasbullah in the book Sri Rahayu argues that the simulation method is a method that invites students to play in several behaviors that are considered in accordance with the learning objectives. [7] Oktapyanto in Claudia's book also argues that the simulation method is a method that asks students to think of themselves as others whose purpose is to learn how others act and feel. [8] In line with the opinion of Uswatun Hasanah who stated that learning is no longer about transferring knowledge, but learning is a process for constructing knowledge. [9]. Therefore, this simulation method is considered relevant to be applied because it is able to actively involve students in the learning process, and help them build an understanding of the use of ngoko and krama vocabulary in accordance with the Javanese language through direct experience.

Research conducted by Restu and Maryam stated that the flashcard media developed is valid, practical and effective, and can be used as one of the media options for learning the Javanese language, especially Javanese language upload materials in elementary schools. [10] Then the research conducted by Putri and Wahyu also stated that the development of flashcard media has valid, practical, and effective quality so that it is suitable for use by educators in learning Javanese language in Javanese language upload materials. [11] The novelty of this research lies in the integration between the development of flashcard media and the application of simulation methods in Javanese language learning, so that it not only produces decent media, but also provides a more active and meaningful learning experience for students. In contrast to previous research which generally only focused on media development or only on the use of simulation methods without media development. Meanwhile, this study combines the two systematically. Recent studies published in The Elementary Journal also support the development of varied learning media for elementary school students. Latifah and Hasanah (2026) developed an ADDIE-based busy book and reported that its interactive activities supported student engagement in IPAS learning [31]. Dewi (2026) likewise examined the development of Hole Adventure learning media to support short-story writing skills [32]. Setyowati and Hasanah (2026) found that a concrete-pictorial-abstract approach significantly influenced elementary students' conceptual understanding [33], while Zahro' (2026) reported that 3D augmented-reality picture storybooks were feasible and effective in increasing third-grade students' reading motivation [34]. These studies indicate that learning media can be designed around students' characteristics and learning objectives; however, the present study specifically combines visual flashcards with simulation activities to help students practice ngoko and krama vocabulary in appropriate social contexts.

Based on the background of the above problem, the researcher needs to develop a flashcard learning media that contains various ngoko and krama vocabulary. This media is combined with the simulation method, so that it can be a means for students to imagine and play characters using the Javanese language according to the upload-ungguh rules. The researcher is interested in designing a research with the title "Development of Simulation Flashcard Media for Ngoko and Krama Vocabulary at SDN Sukorejo Tugu Trenggalek". The formulation of the problems contained in this study is: (1) What is the design of the development of simulation flashcard media for ngoko and krama vocabulary at SDN Sukorejo Tugu Trenggalek? and (2) What is the feasibility of simulated flashcard media for ngoko and krama vocabulary at SDN Sukorejo Tugu Trenggalek? The objectives of this research are to: (1) Know and explain the development of simulation flashcard learning media for ngoko and krama vocabulary at SDN Sukorejo Tugu Trenggalek and (2) Know and explain the feasibility of simulation flashcard media for ngoko and krama vocabulary at SDN Sukorejo Tugu Trenggalek.

2. METHODS

a. Type of Research

The type of research and development used by researchers is the type of research and development (R&D). Research and Development is a research method used to produce products, and test the effectiveness of the product. [12] The choice of the type of R&D in this study is to overcome problems in learning by producing a learning product that is feasible, interesting, and in accordance with the needs of students so as to create a fun learning atmosphere and provide a meaningful experience.

b. Development Model

The development model used in this study is the ADDIE development model. The ADDIE model has five stages, namely Analysis, Design, Development, Implementation and Evaluation. [13] The researcher chose this ADDIE model because it provides systematic, clear, easy-to-understand and structured stage guidelines in designing products or learning that are feasible and in accordance with the needs of students.

c. Data Collection and Instruments

1) Data Collection Techniques

The data collection techniques used by the researcher are interviews, observations, questionnaires and tests.

2) Data Collection Instruments

The data collection instruments used by the researcher are observation instruments, interviews of classroom teachers and students, questionnaires for material experts, media experts, question experts, instruments for teacher and student responses

d. Data Analysis Technique

This research focuses more on media development through qualitative data analysis techniques, so that it does not use sampling techniques and does not test its validity or reliability. This qualitative data is in the form of descriptions obtained from the results of interviews, questionnaire results, input, and suggestions given by media experts, material experts, question experts, and grade IV teachers. However, this research it also uses quantitative data analysis techniques but is limited only to analyzing the results product development questionnaires assessed by material experts, media experts, pre-test-post-test scores, and the results of teacher and student responses.

1) Expert Validation Data Analysis

The formula used for the analysis of validation data of media experts, material experts and question experts are:

$$P = \frac{\sum x}{\sum xi} \times 100\%$$

Description:
P : Validity presentation
∑x : Total number of evaluator's answer scores (real score)
∑xi: The highest number of answer scores (expected scores)

The criteria for the assessment results are in the following table:
Table.1 Expert Validation Criteria

Percentage (%)	Qualifications
81-100	Highly Valid
61-80	Valid
41-60	Quite Valid
21-40	Less Valid
0-20	Very Invalid

2) Analysis of Teacher and Student Responses

The analysis of the responses of teachers and students uses the guttman scale. On this guttman scale, if students and teachers answer "Yes", it means a value of (1) and if the answer is "No", it is worth (0). The formula used to see the response from the questionnaire of class teachers and students is:

$$Pr = \frac{A}{N} x100\%$$

Description:
Pr = Percentage of students/teachers who answered "Yes"
A = Overall score of students/teachers who answered "Yes"
N = Maximum value

3) Analysis of Pre-Test and Post-Test Result

Pre-test and post-test score data are used as supporting data to see changes in students' understanding after using flashcard media as one of the indicators of the feasibility of learning media. The results of the pre-test and post-test were analysed by calculating the average score (mean) of students using the following formula:

$$\bar{X} = \frac{\sum X}{N}$$

Description:

$\bar{X}$: average student score

ΣX : the sum of all the grades obtained by the students

N : number of students

Furthermore, the results of student scores are classified into several categories to make it easier for researchers to interpret the level of understanding of students. The value categories used are as follows:

Table 2. Student Value Category

Score Range	Category
80-100	Height
50-70	Medium
20-40	Low
0-20	Very Low

3. RESULT AND DISCUSSION

a. Result

1) The Development Process of Simulation Flashcard Media for Ngoko and Krama Vocabulary at SDN Sukorejo Tugu

a) Analysis

This stage of analysis was carried out by researchers through observations in grade IV and interviews with classroom teachers and two students. The goal is to find out the methods, media, classroom conditions and obstacles that arise during classroom learning.

The results of the observation show that the learner of Javanese language uses the lecture method, learning resources are limited to LKS books and package books and there is no learning media used. The classroom conditions were initially conducive, then at the end of the learning the classroom situation was not conducive, several students went around the class to their friends' desks. This condition occurs because students start to get bored, feel tired, and lack of variety in learning.

The results of the above observation are in line with the results of the researcher's interview with Mrs. Rika Dwi Wulandari, S.Pd. as the homeroom teacher of grade IV. Mrs. Rika said that: "The learning method I use is the lecture method, the learning source is a package book and a LKS book. The obstacle during learning is in the language uploading material. Students find it difficult to understand the equivalent of the krama language from the ngoko language because they are used to using the ngoko language in their daily lives. I have never used learning media, so I hope that there will be visual media that will help overcome the obstacles that occur". The researcher then conveyed the idea of developing visual media in the form of flashcards, and the classroom teacher gave a positive response if the researcher developed flashcard media to understand the vocabulary of ngoko and krama.

The above statement is supported by the results of interviews with Cahaya and Davi, they said that: "During learning, the teacher always explains on the board, Sis. Then the learning is through package books and LKS books and the learning media do not yet exist. The difficult material is Javanese script, ngoko and krama. I'm confused about understanding the language, Sis. So, if the learning is media, it must be more fun and easier to understand difficult material".

Based on the results of the observations and interviews above, it can be concluded that Javanese language learning in grade IV is still dominated by lecture methods, learning resources are limited to package books and worksheets and there is no learning media. This condition causes students to experience difficulties in understanding ngoko and krama vocabulary materials, so visual learning media, such as ngoko and krama vocabulary flashcard media through simulation methods to help students understand the material that is considered difficult.

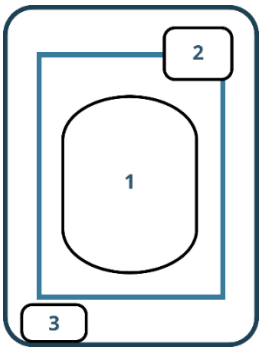
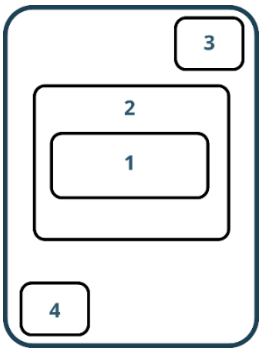
b) Design

The design stage in the development of ngoko and krama vocabulary flashcard media products has several stages, including:

(1) Creating a Flashcard Design in the Canva App

The first step is to determine the size of the paper. The size of the paper used is 9 x 12 cm. The next step is to design a flashcard display that contains page frames, photo frames, images and graphic decorations. The colours used in the media are blue, both light blue and dark blue. Here is a picture of the flashcard media plan:

Table. 3 Flashcard Media Design Ngoko dan Krama Vocabulary

Front	**Back**
	
Description: 1. Pictures of children and parents 2. Picture of batik mega mendung 3. Graphic decoration	Description: 1. A dictionary of languages or languages 2. Shadow image of batik mega mendung 3. Picture of batik mega mendung 4. Graphic decoration

(2) Determining the Flashcard Media Material

Flashcard media is made of 210 gsm art paper. Art paper is a type of paper that has the characteristics of a smooth, slippery, and glossy surface on both sides. The researcher used art paper, because this paper has a long durability, is not easily damaged, does not absorb water easily, and the print results look brighter.

(3) Determining the Number of Ngoko dan Krama Vocabulary

The number of ngoko vocabulary consists of 12 vocabularies, and the number of krama vocabulary is 12 vocabularies. The vocabulary used in this media is taken from LKS books and package books and several verbs that are often used in daily life.

Table. 4 Ngoko Vocabulary

No.	**Ngoko Vocabulary**	**Information**
1.	Maca	Picture of a child reading a book, and grandpa sitting next to him
2.	Numpak	Picture of a child riding a bicycle, and grandmother standing nearby
3.	Mangan	Picture of a child eating meatballs, and grandpa sitting next to him
4.	Ngombe	Picture of a child drinking milk, and grandfather sitting next to him
5.	Nulis	Picture of a child writing a parikan, and a grandfather sitting next to it
6.	Turu	Picture of a child sleeping, and mother standing beside him
7.	Adus	Picture of the child about to take a shower, and the mother standing beside him
8.	Tuku	Picture of the child buying a snack, and the mother standing beside him

No.	Krama Vocabulary	Information
1.	Maos	Picture of grandfather reading newspaper, and child sitting next to him
2.	Nitih	Picture of grandmother riding a rickshaw, and child standing nearby
3.	Dhahar	Picture of grandfather eating satay, and child sitting behind him
4.	Ngunjuk	Picture of grandfather drinking tea, and son sitting next to him
5.	Nyerat	Picture of grandfather writing a geguritan, and a child standing near him
6.	Sare	Picture of a mother sleeping, and a child standing nearby
7.	Siram	Picture of mother about to take a bath, and child standing beside her
8.	Mundhut	Picture of mother buying eggs, and child standing beside her
9.	Ngasta	Picture of the teacher carrying a book, and the child standing beside it
10.	Nanem	Picture of grandmother growing vegetables, and child standing beside her
11.	Mriksani	Picture of grandmother watching a movie show on TV, and child standing behind her
12.	Mbucal	Picture of grandmother throwing garbage in the trash, and child standing beside her

Table.5 Krama Vocabulary

c) Development

The development of this product was carried out using two applications, namely Canva and Google Gemini. The Canva application is used to design flashcard media, while the Google Gemini application is made to create an image that will later be placed in the flashcard.

(1) Stages of Image Creation in the Google Gemini App

At the stage of creating images of children and parents in this application, researchers must first create a prompt or command as detailed as possible so that this Google Gemini application can produce images that suit the researcher's wishes. For example: "Make a picture of a girl with her grandmother. The child and grandmother wore blue Javanese traditional clothes and black flip-flops. Then the grandmother was riding a pedicab while carrying a basket filled with vegetables, the pedicab was driven by a man wearing a black shirt and wearing a hat. Meanwhile, the girl was next to the pedicab while waving to her grandmother". The result of the image from the prompt is:

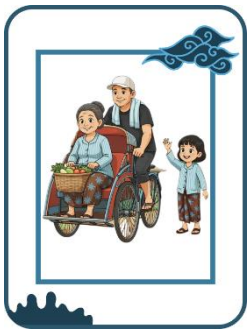


Figure.1 Design Result on Google Gemini

(2) Media Creation Stage in Canva App

After the child and parent images have been successfully created in the previous application, the image is then copied and entered in the Canva application in the front card design section. The researcher also removed the background of the image to make it appear clearer. The front and back flashcards will look like this:

Table.6 Flashcard Media Display

Front	Back
	

In the image above, the researcher uses a batik mega mendung element that symbolizes tranquility. This means that humans must be good at controlling emotions and remain calm in all situations, such as a calm cloudy cloud even though it brings rain. If it is associated with the material of uploading ngoko and krama, then this batik philosophy reflects the attitude that a person must have in language, namely being able to place and control themselves so that they can speak politely and use the level of speech that suits the interlocutor. Then on the back of the researcher writes ngoko or krama vocabulary using a type of font that is relaxed and cheerful, not rigid or formal, because the target is children. The font used by the researcher is the More Sugar font.

After the design is completed, the researcher then prints the flashcard media on 210 gsm art paper. Furthermore, it is laminated so that it is durable and not easily damaged and resistant to creases, and water splashes when used repeatedly by students.





Figure.2 Ngoko and Krama Vocabulary Flashcard Media

d) Implementation

(1) Material Expert Validation Result

Validation by subject matter experts aims to assess the content of the material in flashcard media, using a questionnaire containing 15 questions in the form of a Likert scale. The validation process was carried out by Mrs. Irma Fauziah, M.Pd. as a lecturer at PGMI UIN Sayyid Ali Rahmatullah Tulungagung. The results of the validation of the material experts are as follows:

Table.7 Material Expert Validation Result

No.	Aspects	Score
1.	Material Suitability	28
2.	Language	20
3.	Benefits	12
	Total Score	**60**
	Maximum Score	**75**
	Percentage	**80%**

Based on the table above, the results of validation by material experts get a percentage of 80% which is included in the valid category**.** As for the advice given by the material expert, the researcher should make a guide sheet regarding the use of flashcard media in learning.

(2) Media Expert Validation Results

Validation by subject matter experts aims to assess flashcard media, using a questionnaire containing 15 questions in the form of a scale. The validation process was carried out by Mrs. Dr. Septinaningrum, M. Pd. as a lecturer at PGMI UIN Sayyid Ali Rahmatullah Tulungagung. The results of the validation of media experts are as follows:

Table.8 Media Expert Validation Result

No.	Aspects	Score
1.	Design Display	23
2.	Media Quality	20
3.	Interactivity	15
4.	Presentation	15
	Total Score	**73**
	Maximum Score	**75**
	Percentage	**97,3%**

Based on the table above, the validation results by media experts got a percentage of 97.3% which is included in the **very valid category.** As for the advice given by media experts, researchers should increase the font size and complement some images so that they are easy to understand.

(3) Question Expert Validation Results

Validation by subject matter experts aims to assess flashcard media, using a questionnaire containing 10 questions in the form of a Likert scale. The validation process was carried out by Mrs. Rika Dwi Wulandari, S.Pd. as a grade IV teacher of SDN Sukorejo Tugu Trenggalek. The results of the expert validation of the questions are as follows:

No.	Aspects	Score
1.	Material Suitability	19

2.	Clarity of Questions	15
3.	Language	14
Total Score		**48**
Maximum Score		**50**
Percentage		**96%**

Table.9 Question Expert Validation Result

Based on the table above, the validation results by experts got a percentage of 96% which is included in the very valid category**.** Despite obtaining these categories, the researcher still needs to make improvements according to the suggestions and comments provided by the validator.

(4) Results of the Teacher Trial

The test for teachers aimed to determine the response of grade IV teachers to the flashcard media developed by the researcher. The results of the teacher's response received a percentage of 100% which was included in the **very good category**.

(5) Small Group Trial Result

This small group trial involved 6 students. The results of the flashcard media trial for small groups, get a percentage of 86.7% is included in the **very good category.**

(6) Results of Large Group Trials

The trial for this large group involved all 12 students in grade IV. The results of the flashcard media trial for large groups, get a percentage of of 90.83% is included in the **very good category**.

e) Evaluation

The evaluation stage in the R&D development model serves to ensure that the product developed is truly valid and feasible, according to the needs of the students. Without this evaluation stage, the media development process cannot produce a viable product, and cannot be called complete development research. At this evaluation stage, the researcher can find out the advantages and disadvantages of the product based on the data of expert validation results, trials and teacher responses so that the researcher can make appropriate revisions.

The flashcard media developed obtained a valid category from material experts with a percentage of 80%. The suggestion given is the addition of a user guide sheet so that educators and students can more easily understand the flow of media use, as well as the addition of vocabulary. The researcher then compiled a guide for use in Javanese according to the characteristics of ngoko and krama materials.

Furthermore, the results of the evaluation from media experts obtained a very valid category with a percentage of 97.3%. The suggestions given are to increase the font size to make it clearer and complete the images in the flashcards so that they are easier for students to understand.

The results of the trial showed that the category was very good, the percentage results were 100% obtained from teachers, 86.7% were obtained from small groups, and 90.83% were obtained from large groups. The students looked enthusiastic, even though there were two students who needed special assistance because they did not come from a Javanese language background. Overall, the flashcard media of ngoko and krama vocabulary was declared very feasible and received a positive response as a learning medium.

2) Feasibility of Simulation Flashcard Media for Ngoko and Krama Vocabulary at SDN Sukorejo Tugu

The feasibility of flashcard media for ngoko and krama vocabulary can be seen from the results of students' pre-test and post-test scores which show an increase in understanding after the use of flashcard media in the learning process. If the average post-test score is higher than the average pre-test score, it shows that the developed media is suitable for use in the learning process.

The trial of students using pre-test and post-test questions was carried out through a large group trial involving 12 students. Based on the data obtained, the results of the students' pre-test and post-test scores have various scores. The researcher then grouped these values into three categories, namely low, medium and high categories. The results are as follows:

Grade Categories	Range	Student Name	Pre-test Score	Post-test Score

		Ahmad Faizal Z.	30	100
		Ayuna Azahra R.	30	100
Low	20-40	Cahaya Fitri R.	30	70
		Davi Putra H.	20	70
		Khenza Putra P.	20	70
		Tristan Altaras S.	30	70
Quantity			**160**	**480**
Average			**26,67**	**80,00**
		Jeryko Agustino S.	60	90
Medium	50-70	Muhammad Ihsan G.	50	90
		Silvya Agustin R.	70	100
		Ayu Aprilia D.	60	90
Quantity			**240**	**370**
Average			**60,00**	**92,50**
Height	80-100	Rania Wanda R.	100	100
		Rifda 'Ainun M.	100	100
Quantity			**200**	**200**
Average			**100,00**	**100,00**
Total Amount			**600**	**1050**
Overall Average			**50,0**	**87,5**

Table. 10 Pre-Test and Post-Test Results

Based on the calculation above, it can be seen that there is an increase in students' understanding after using flashcard media. This can be seen from the comparison of the average pre-test and post-test scores which showed an increase of 37.50 points, from the average pre-test score of 50.00 to 87.50 in the post-test results.

The results of the above calculation show that in the low category, as many as 6 students managed to increase their average score from 26.67 to 80.00, which means that they have moved from the low category to the high category. In the medium category, as many as 4 students experienced an increase in average scores from 60.00 to 92.50, which indicates that all students in this category have reached the high category. Meanwhile, in the high category, as many as 2 students maintained a perfect score with an average of 100.00 in both stages of measurement. The results of the score in this post-test show that no student has a score in the low category.

Based on the above statement, it can be concluded that the flashcard media developed by the researcher is able to help students in understanding the differences and use of ngoko and krama vocabulary, so that the flashcard media of ngoko and krama vocabulary is declared suitable for use as a learning medium in Javanese language subjects in grade IV elementary school.

b. Discussion

1) The Development Process of Simulation Flashcard Media for Ngoko and Krama Vocabulary at SDN Sukorejo Tugu

a) Analysis

The findings of the researcher during the analysis showed that the condition of class IV at the time of learning Javanese was less conducive. This is due to the lack of variety in learning, and the learning method used, namely the lecture method, so that students feel bored, not focused and end up going around the class to their friends' desks. This is in line with the opinion of Wiryawan and Noorhadi who stated that the use of the lecture method can cause boredom if used for a long period of time.[14]

These less varied learning conditions also have an impact on the emergence of obstacles in understanding the material. The researcher's findings related to the obstacles experienced in learning the Javanese language, namely in the language uploading material, students find it difficult to understand the equivalent of the krama language from the ngoko language because they are used to using the ngoko language in their daily lives. This is in agreement with Shindy Auliya et al. who stated that the factor causing difficulties in learning Javanese is environmental factors, because students are used to using Javanese ngoko compared to Javanese krama when they are in the home environment and community. [15]

The next finding is that during Javanese language learning, educators have never used learning media. Educators only use package books and LKS books and explain and write more material on the board. If viewed from the theory put forward by Septinaningrum that learning media has a very important role in helping educators create interesting learning activities to stimulate curiosity and increase students' motivation in learning. [16]. Therefore, the researcher chose to develop a flashcard media of ngoko and krama vocabulary through a simulation method, as an effort to help students to understand the difference in use between ngoko and krama vocabulary, so that they can understand how to speak good and polite words.

b) Design

The media flashcard of ngoko and krama vocabulary developed by the researcher is 9x12 cm in size. The reason for choosing this size is to be easy for students to carry, the writing and images displayed are clear and efficient when printed. In line with Tejo Nursito's opinion that flashcard media is easy to carry anywhere, practical to use, able to help students remember the material, and create a fun learning atmosphere. [17]

The flashcard media consists of two sides, the front side displays images of children and parents who are doing activities, then on the back side there is the writing of ngoko or krama vocabulary. This aims so that with the combination of text, students can understand and remember the vocabulary of ngoko and krama. This is in line with Mayer's cognitive theory which emphasizes that the combination of text (writing) and visual (pictures) can improve students' understanding and memory of learning materials. [18]

Then the researcher chose the colour of the flashcard, namely blue, both dark blue and light blue. Blue is a calm colour that children love. In line with Alkhatiri and Sari's opinion, colour has a significant impact on productivity and mood in the educational environment, for example, blue can increase concentration and provide a sense of calm for students. [19] Meanwhile, the material used in the media is art paper. M. Fikri and Maula explained that art paper paper is not easily damaged, even when in contact with water, art paper tends to be able to withstand it so that it is not easily absorbed. [20]

Next, the researcher determines the vocabulary of ngoko and krama to be used in flashcard media, namely in the form of verbs. The vocabulary selection was taken from package books and class IV LKS books for Javanese subjects as well as several verbs that are often used in daily life. Asmara Yumarnid et al. emphasized that if students realize that the material they learn has a direct relationship with daily life, they will usually tend to be more enthusiastic about participating in learning. [21]

c) Development

The development of this product was carried out using two applications, namely Canva and Google Gemini. The Google Gemini application was created to create an image that will later be placed in flashcard media. Nora Agustina et al. emphasized that the Gemini application is a tool to implement the learning process so that it becomes more interactive and efficient. [22] Meanwhile, the Canva application is used to design flashcard media. This is in accordance with the opinion of Feryana et al. who argue that the Canva application makes it very easy for educators to design learning media. [23]

When the researcher developed this media, the researcher added graphic decoration in the form of mega cloudy batik in the corner of the page. Jessica and Edy explained that the batik mega mendung motif symbolizes calmness which means that humans must be good at controlling emotions and remain calm in all situations, such as a calm cloudy cloud even though it brings rain. [24] Meanwhile, the font chosen by the researcher is the More Sugar font, because it has an eye-catching shape. As stated by Fahmy, the More Sugar font has an attractive and friendly appearance, has a playful and easy-to-read font style, so that it can create a meaningful experience for users and can create learning. [25] After the design is completed, the researcher then prints the media on 210 gsm art paper and laminates it so that it is durable and not easily damaged

d) Implementation

The flashcard media of ngoko and krama vocabulary that has been developed by the researcher is then validated to material experts and media experts. Then for the pre-test and post-test questions, they are also validated to question experts. The flashcard media of ngoko and krama vocabulary that was developed received a score from the validator of the material expert of 80% (valid) so that it shows that the material used is appropriate. The results from the media validator obtained 97.3% (very valid), thus showing that the appearance and quality of the media are good. Meanwhile, the results of the question validation got 96% (very good) so that it shows that the questions are appropriate.

After being validated, the media is tested. The results of the teacher's trial obtained 100% (very good), the results of the small group trial obtained 86.7% (very good) and the results of the large group trial obtained 90.83% (very good). This shows that flashcard media is in accordance with the needs of students, interesting and can increase student involvement in the learning process. This is also in line with the results of a previous study conducted by Alma Maulida et al, who also stated that flashcard media was declared feasible and very good to be used in the learning process for 4th grade elementary school students. [26]

e) Evaluation

At this evaluation stage, the researcher can find out the advantages and disadvantages of the product based on the data of expert validation results, trials and teacher responses so that the researcher can make appropriate revisions. The results of the evaluation carried out by the material expert are to provide suggestions for researchers to make a guideline for the use of flashcard media so that educators and students can easily understand the steps or flows in the use of flashcard media.

Furthermore, the results of the evaluation by media experts, namely the researcher, should increase the font size to make it clearer and easier to read by students. The font size that was previously 50 pt was later changed to 56 pt and complemented some images to make them easy to understand. In line with the opinion of Ni Made Lidiya et al. who explained that the use of writing and image elements in infographics must be clear in order to help simplify complex concepts so that students can more easily grasp the core of the material. [27]

Flashcard media that has been validated by experts, and has been corrected according to the experts' suggestions, then researchers can conduct tests on teachers, small group trials and large group trials. The findings of this research during the trial of small groups and large groups, namely students, were very enthusiastic and enthusiastic about participating in learning through this flashcard media. Therefore, flashcard media has been proven to make learning Javanese more interesting and increase student involvement in learning. This is in agreement with Siti Viona, et al. who emphasized that interactive, flexible, and easy-to-use learning media can be one of the effective ways to increase student involvement in learning. [28] This finding is consistent with other studies in The Elementary Journal showing the potential of varied, student-oriented media and visual approaches to support engagement and understanding in elementary learning [31]–[34].

2) Feasibility of Simulation Flashcard Media for Ngoko and Krama Vocabulary at SDN Sukorejo Tugu

The feasibility of flashcard media for ngoko and krama vocabulary can be seen from the results of the students' pre-test and post-test scores. If the average post-test score is higher than the average pre-test score, then it shows that the developed media is suitable for use in the Javanese language learning process. The findings of the researcher during the pre-test were that some students still had difficulty in distinguishing the use of ngoko and krama vocabulary. Then students do not understand the context of conversation in Javanese as well as the use of appropriate vocabulary for older subjects. Then the researcher carried out a post-test to measure the level of improvement in students' understanding after being given treatment using flashcard media of ngoko and krama vocabulary in learning Javanese. During the post-test, some students have experienced an increase in understanding of the use of ngoko and krama vocabulary.

Based on the calculation of the average score of the pre-test and post-test, it can be seen that there is an increase in students' understanding after using flashcard media. This can be seen from the comparison of the average score of the pre-test and post-test of 105 which showed an increase of 37.50 points, from the average pre-test score of 50.00 to 87.50 in the post-test results. These results show that there is an increase between before and after the use of flashcard learning media for ngoko and krama vocabulary. This increase proves that flashcard media is suitable for use as a learning medium in Javanese language subjects in grade IV elementary school.

The above increase occurred because the flashcard media of ngoko and krama vocabulary developed by the researcher was in accordance with the Javanese subject matter, the material was simple, the material could also support the learning of simulation methods. Then this flashcard media also has an attractive design with a harmonious color combination, images and writing are easy to understand, media is safe to use, and the size of the media is also suitable for students at the elementary

level. In addition, the use of flashcard media in learning can also create a fun learning atmosphere, increase student involvement, and increase enthusiasm in participating in Javanese language learning. In line with the results of the previous study conducted by Khofifah and Ulhaq, it was also stated that flashcard media was declared valid, practical, and effective as an alternative media in the vocabulary mastery learning process. [29] In addition, previous research conducted by Niha also stated that flashcard learning media is very practical and feasible to use in classroom learning. [30]

4. CONCLUSION

The development of ngoko and krama vocabulary flashcard media carried out by the researcher used the ADDIE development model which consisted of five stages, namely conducting a needs analysis, designing products, developing products according to design, implementing products to students, and evaluating products. The developed ngoko and krama vocabulary flashcard media obtained a score from the material expert validator of 80% (valid), then the results of the media validator obtained 97.3% (very valid), then the results of the teacher's trial obtained 100% (very good), the results of the small group trial obtained 86.7% (very good) and the results of the large group trial obtained 90.83% (very good). The feasibility of flashcard media for ngoko and krama vocabulary can be seen from the results of pre-test and post-test scores from all grade IV students totaling 12 students. The average result of the pre-test score was 50.00 to 87.50 in the post-test results, so there was an increase of 37.50 points. This improvement proves that the flashcard media developed by the researcher is able to help students understand the differences and use of the vocabulary of 108 ngoko and krama, so that the flashcard media of ngoko and krama vocabulary is declared suitable for use as a learning medium in Javanese language subjects in grade IV elementary school. Based on this, the researcher hopes that educational institutions will provide support and facilities to educators in order to develop more interesting and interactive learning media, so that the Javanese language learning process becomes more fun and in accordance with the needs of students. In addition, educators are expected to be able to utilize and use flashcard media developed as a means of innovation in creating more creative and effective learning. The researcher also hopes that the next researcher will develop a more interesting flashcard media with a more varied vocabulary in order to further improve students' understanding optimally.

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