Indonesian Endemic Animals Domino Card About Counting 1 to 10 for Grade 1 Elementary Student

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ABSTRACT

The use of low-level learning media is lack of variety, even though student's ages need a concrete figure of learning. One of them is using learning media that is more attractive to students to learn. Therefore, domino card as learning media is developed to support the introduction of Indonesian endemic animals with counting material for 1st grader of elementary school. Domino cards are developed based on the ADDIE model, consisting of Analyze, Design, Development, Implement, and Evaluate that includes validation tests and field tests. The validity test consists of testing the material, language, and media. The results of the validation of the material test got a mean score of 92.65% that was included in the category of eligible for use without revision, the results of the language validity test got a score of 91.42% that was categorized as fit for use without revision and the results of the media test got 89.68% which was included in the category worth using without any revisions. The average results of students' favoriteresponses to the media got a score of 96% for which was in the very feasible categories. Overall, based on the mean score obtained, the media is valid and can used.

Keywords: Domino card, Endemic animal, Counting, Elementary student.

1. INTRODUCTION

Learning media is an important component of learning in delivering material to abstract students to be more concrete. Although the use of media is very important in learning, the use of low-grade media in elementary schools is still lacking because most teachers teach with books [1]. The learning media applied in the lower classes are lack of variety [2], causing students to be less enthusiastic in learning.

Good learning media make it easier for students to understand learning material, increase learning motivation, and student activity. The learning media used in the classroom is currently low in the form of audio, visual, and audio-visual so that students discuss the learning material presented. Meanwhile, according to Piaget, children under seven years of age have the type of thinking and active learners from the experience of individual activities and the physical environment. Learning media will be easier for students to implement if applied to the principles of learning by doing.

One of the media that applies by doing the learning process is learning media in the form of card games. This is because it is more interesting, interactive, increases student motivation, and builds experiences [2,3]. Besides that, it will build strong cognitive abilities in students [4]. Types of card games that are easy to play and apply for students, for example, dominoes [5].

Domino card media can be integrated into various learning materials. Several studies have shown that domino cards are effective for low-grade students [6; 7]. Domino cards on fraction material are effectively

used by grade 1 students in improving learning outcomes.

Learning materials that can be applied with domino cards are numbers and animals in grade 1 elementary school. This learning material is very important and basic, so it requires appropriate and interesting media. Besides, domino cards are very suitable to be applied to lower classes because those who think concretely and pictorial cause their learning method to require learning media that supports a fun learning process.

Learning media are used in the learning process to facilitate the delivery of material. Learning media in the form of intermediaries from teachers to students to transfer material to make it more effective, efficient, relevant, and productive by learning objectives. Media functions as a learning resource, object manipulation, attract interest, motivates, and delivers a wide range of material [8].

Learning media is divided into several types: (a) graphic media is a visual representation of information in the form of Figures or signs, for example, such as diagrams, posters, illustrations, etc. [9]; (b) audio media, namely the sound which is recorded and conveyed through a device, for example, such as radio, podcast, telephone, etc .; (c) the still projection medium requires a projector for example such as slides, films, etc .; (d) play and simulation media such as games and role-playing methods [10].

Learning media is useful for (a) interpreting information non-verbally, for example, orally; (b) overcome the lack of access to time and space objects; (c) increase learning activity and motivation to use entertaining media; (d) Utilizing the environment and experiences close to students to help students understand learning.

2. METHOD

This development research uses the RND or Research and Development type of research. Research with the type of RND is research that produces a certain product to be tested for its effectiveness [11]. Based on this, the researcher developed a domino-shaped learning media using the ADDIE model which consisted of 5 development stages. These stages consist of the analysis stage (Analysis), the design stage (Design), the product development stage (Development), the trial stage (Implement), and the evaluation stage (Evaluation).

This stage of analysis includes data collection to obtain a theoretical basis to strengthen the product being developed. The analysis carried out is in the form of needs analysis, curriculum, and analysis of learning materials. At this design stage, it includes initial design or in the form of a domino product planning concept. The product development stage includes the development process of the product validation process. This product validation consists of the validation of media experts, linguists, and material experts. Furthermore, the implementation stage is the product trial stage for elementary school students to test their practicality. The research subject in this study is about the development of learning media for HEI domino cards on Numbers 1 to 10 for Elementary School 1 Grade Students on Themes1 Myself, Sub-Theme 1 Me and New Friends , Mathematics Subject. The basic competencies selected are: (1) Explaining the meaning of whole numbers up to 99 as the number of members of a set of objects, (2) Present whole numbers up to 99 as the number of members of an object set, (3) Explain numbers up to two digits and the place values of the number symbol using a collection of concrete objects and how to read them, dan (4) Compares two numbers to two numbers using a collection of concrete objects.

By using data collection techniques in the form of a media validation test questionnaire, material validation test, design validation test, and also product practicality test. After that, the test results will be analyzed using qualitative data analysis techniques and descriptive statistical tests.

3. RESULT AND DISCUSSION

The focus of the results and discussion is the development of domino card media on the material of numbers 1 to 10 in grade 1 elementary schools. Several studies have been carried out related to the development of domino cards, there are Domino Card KALI to improve the ability to multiply numbers[7], Training in Using Domino Cards for Mathematics Teachers [12]and Domino Cards to Improve German Vocabulary[13]. Previous research only presented numbers and letters, but in this study innovated by visualizing images of Indonesian endemic animals. Image designs are made with applications via smartphones and laptops.

This domino card development is designed through the IbidpaintX, Canva, and Corel Draw X8 applications then the card is printed on 260-gram

Construct type paper. This domino card has an interesting color and easy to play with Indonesian endemic animals. The results of the study used the ADDIE method.

3.1. Analysis Phase

The analysis stage was carried out by observing and interviewing teachers and students. Based on the results of observations, grade 1 elementary school students are difficult and slow to learn in mathematics on counting material 1 to 10 theme 1 sub-theme 1. The learning process of arithmetic material is still taught manually using fingers or objects around students. Teachers must be more creative in presenting learning following the characteristics of elementary school students.

Primary school children aged 6-12 years have the characteristics of concrete ways of thinking so they need to use concrete objects as a medium to explain learning. The use of media and teaching methods in

schools is less diverse, causing students to focus less on learning and difficult to understand the material presented. Also, students become lessenthusiastic and active in being involved in teaching and learning activities [14]. Based on this, there should be variations in teaching arithmetic material to students.

3.2. Design Stage

The use of card learning media is carried out directly and in groups, so that students can play the media easily, actively, creatively and happily[15,16]. The initial design stage is carried out by making a planning framework. The framework contains the determination of learning material, the design of Figure cards, and the rules of the game. The selected learning material is the basic material, namely counting from 1 to 10. In the card section, the selected images are 10 Figures of endemic Indonesian animals. This is aimed at introducing national culture from an early age to students.

Figure1. Indonesian endemic animal

Furthermore, designing animal drawings using the IbidpaintX application with re-drawing techniques so that they are similar to the original image. The front view card image consists of ten animals beside the

numbers 1 to 10 and the back card image is a red and white mega batik image. Batik drawings are designed using the Corel Draw X8 application with re-drawing techniques.

Figure. 2 Domino cards for Indonesianendemic animals

For the game rules section, it was written simply so that it was easy for students to understand in grade 1. There are several stages in the rules for playing dominoes. Game rules teach students to obedient and mindful to the agreements and rules.
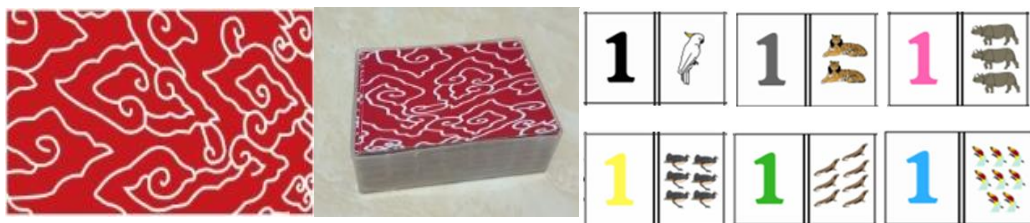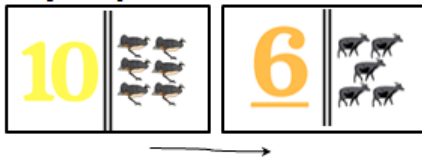
Steps to the Indonesian Endemic Animal Domino Card Game
1. The game can be played by 3-15 people.
2. Players sit in a circle.

3. The order of the players is determined by the oldest player continued to the right side.
4. Shuffle the dominoes then distribute
5. them to the players.
6. Each player gets 5 cards each.
7. Take one card from the top domino pile.
8. When laying down the cards, players must pay attention to the number and number of animals and say verbally the number or number of animals.
9. If the player is going to continue with the number side then use a Figure of the animal with the same number as the number.

10. If the player is going to continue the side of the animal then use a number that is the same as the group of animals.

11. If no numbers or the number of animals are the same, the player must draw one card from the pile.
12. The player who wins is the player who finishes the card first.
13. The game ends when all cards are finished.

3.3. Development Stage

After all the designs for the card part are finished, the animal Figures and numbers for the front view and the mega cloud batik for the back view are then printed at the printing shop on 260-gram Kontruk type paper. Domino card depicts 10 animals and consists of 100 cards. The application of domino cards by playing them per group of at least 5 people to a maximum of 20 people.

Figure 3. Print results of Indonesian endemic animal domino cards

The next stage is the validation of learning media with validators who are experts in their fields. Next, provide a questionnaire for student responses about the application of domino cards as a learning medium. Media validation by lecturers from UPGRI, Sriwijaya University, and Lampung University. The results of the validation data are as follows.

Table 1. Validation Results of Indonesian Endemic Animal Domino Cards

Aspect	Score obtained		Validity Criteria for each Aspect		Average of each Aspect
1	69	70	92%	93,3%	92,65
2	32	32	91,4%	91,4%	91,4
3	46	53	83%	96,36%	89,68

Information :
Aspect 1: material test
Aspect 2: language test
Aspect 3: media test

The average result of the material test score reached 92.65%, the category is very valid and suitable for use without revision. The material is following the objectives, targets, is effective and effective for students in the learning process

The presentation of the media test data reached an average score of 91.4%, the category was very valid and fit for use without revision. Domino cards are displayed in attractive, colorful, imaginative and communicative packaging. Display and visualization can foster an interest in learning and increase student understanding.

The language test reaches an average score of 89.68%, the category is very valid. Game rules are written in good and correct Indonesian rules. The language of delivery is simple and communicative in accordance with the objectives of grade 1 elementary school students and can encourage students to think critically.

Based on this discussion, the average validation of all aspects reached 91.2%. Valid criteria in the range of 85.1% -100% are very valid categories [17]. From this surprise, it can be concluded that the domino card learning media is feasible to use without revision.

3.4. Implementation Stage

At the implementation stage, researchers looked for students for learning media and gave domino cards in Timbangan Village, Indralaya Utara District, South Sumatra Province, Indonesia. The characteristics of the students to be selected were grade 1 elementary school, then ten students were selected as respondents.

Figure 4. Implementation stage documentation

At the initial stage, prepare a conducive place for students to focus. Domino cards for Indonesian endemic animals were arranged in the middle of the playground and respondents' questionnaires were prepared. After the preparation, the students were divided into two groups consisting of 5 students each.

Researchers introduce learning media for Indonesian endemic animal domino cards by explaining the number and meaning of animal images on the cards. After that, the game rules are explained in detail so that students can play coherently which leads to the goal of the game [18]. In the game process, students are enthusiastic and energetic to follow the game until the cards run out[19].

After the game, students are given a response questionnaire to answer the ten component questions. The results of the student response questionnaire data are presented in Fig. 5.

The presentation of the data divided into two parts of the question. Questions 1 to 5 contain favorable questions, with the acquisition of YES answers, namely 90-100% with an average score of 96%. The majority of students answered with this domino card, they became active, excited, and interested in learning because the delivery of the material was clearer and more enjoyable so it was easier to understand.

Meanwhile, questions 6 to 10 contain unfavorable questions with answers NOT reaching 60-100% with an average of 90%. According to students, this card is not difficult to understand, saturated, or less interesting.

In this discussion, the researcher tries to answer the saturation of students in learning using less diverse media and methods. This domino card, when played regularly, can hone basic skills of counting 1 to 10 more quickly.

No	Question Component	Score		Percentage	
		Yes	No	Yes	No
1	I am happy because using domino card media is fun	10	0	100%	0
2	I feel that the domino card learning medium clarifies arithmetic lessons	10	0	100%	0
3	I feel more enthusiastic about learning to count using domino card learning media	10	0	100%	0
4	I am interested in learning because of the attractive size and motif of the batik	9	1	90%	10%
5	I feel I am more active in learning with domino card learning media	9	1	90%	10%
6	It is more difficult for me to learn to count using this domino card	1	9	10%	90%
7	I find the rules of the game hard to understand	4	6	40%	60%
8	I feel the domino card media makes it difficult to study with friends	0	10	0%	100%
9	I feel bored studying because of this domino card medium	0	10	0%	100%
10	I don't like the colors, images and media form of dominoes	0	10	0%	100%
	Score	53	47	53%	47%

Figure 5. Student response questionnaire results

3.5. Evaluation Stage

In the evaluation stage, it is adjusted to the suggestions and criticisms of the validators based on learning objectives and student needs. The following data is presented in the table.

Table 2. Results of the validator's suggestions

	Suggestion and Critic	After Revision
Validators	Game instructions need to be made clearer by using language that is easy to understand, especially for grade 1	The steps or game instructions in the learning media are clear, the materials used for the learning media are appropriate, so that the media can

	elementary school students.	be used for quite a long time.
	It should be noted again the use of the material, you should use thick paper, not easily crunched, and not easily torn.	The paper material chosen is a thick construct 260 paper type, and is not easily torn and durable.
	Numbers 6 and 9 can confuse students, you should change the font for numbers 6 and 9 which are different.	The image is clear, numbers 6 and 9 already have differences in the font and are underlined to make it clear.
	Add a container for storing cards, as well as storing game hints.	The plastic storage container that fits the size of the card.

Also, at the implementation stage, students are initially somewhat confused by the rules of the game. Even when playing, students put numbers side by side with numbers when they should be with Figures of animals. Also, the numbers 6 and 9 have not been revised yet, there is no underscore to emphasize the numbers 6 or 9. After the revision, the language of the regulations and numbers also changes. For the card case, researchers have not found the right box size so it is necessary to survey several stores to get a plastic box suitable for domino card containers.

4. CONCLUSION

Based on the discussion above, it can be concluded that domino card media can be used as learning media for counting 1 to 10 elementary school class 1 theme 1 sub-theme 1.Media is developed using the ADDIE method, which is analyzed from student learning difficulties and lack of learning media, designed with simple design applications and developed in the form of a 260-gram card. The application of cards in elementary school children got an average result of student favorite responses to the media is 96% with

the validation results in the form of an average material test of 92.65%, media test 91.4%, media test getting a score of 89.68%. The average score of validity obtained is 91.2% which falls into the very valid category. The evaluation of this development is that there is a change in the media before validity and in the field test afterward.

ACKNOWLEDGMENTS

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