


DEVELOPMENT OF DOMINO CARD MEDIA ON COUNTING MATERIALS FOR EARLY AGE CHILDREN AT THE EAST METRO PRIVATE KINDERGARTEN

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Article Info	Abstract
<p>Article History: Received: Februari 2024 Revised: April 2024 Accepted: Mei 2024 Published: Juni 2024</p> <p>Key Word : Cognitive Development, Numeracy Ability, Domino Card Learning Media.</p>	<p>The development of domino card media at the Pembina Metro East Kindergarten was carried out because several students were not able to say the numbers 1-10 in sequence. This problem is seen when children shout out numbers together, but have difficulty when asked to name the numbers one by one. Apart from that, some children also have low numeracy skills. Teachers usually start by writing numbers without introducing symbols. This research aims to produce domino card-based learning media, testing its feasibility and effectiveness in improving the numeracy skills of young children. Using the Research and Development (R&D) method with the ADDIE model, this research went through the stages of Analysis, Design, Development, Implementation and Evaluation. The validation results show that the domino card media is very feasible. Validation by media and material experts provided a high percentage, while trials with teachers and students also produced positive results. Thus, it can be concluded that this domino card media is effective in helping develop the numeracy skills of young children.</p> <p>Copyright © 2024, Edo Dwi Cahyo et al This is an open access article under the CC-BY-SA license</p> 

Abstrak

Pengembangan media kartu domino di TK Negeri Pembina Metro Timur dilakukan karena beberapa peserta didik belum mampu menyebutkan bilangan 1-10 secara berurutan. Masalah ini terlihat saat anak-anak berteriak menyebutkan angka secara bersama-sama, tetapi kesulitan ketika diminta menyebutkan bilangan satu per satu. Selain itu, beberapa anak juga memiliki kemampuan berhitung yang rendah. Guru-guru biasanya memulai dengan menuliskan bilangan tanpa mengenalkan simbol-simbol. Penelitian ini bertujuan untuk menghasilkan media pembelajaran berbasis kartu domino, menguji kelayakan dan efektivitasnya dalam meningkatkan kemampuan berhitung anak usia dini. Menggunakan metode Research and Development (R&D) dengan model ADDIE, penelitian ini melalui tahapan Analisis, Desain, Pengembangan, Implementasi, dan Evaluasi. Hasil validasi menunjukkan bahwa media kartu domino tersebut sangat layak. Validasi oleh ahli media dan materi memberikan persentase tinggi, sementara uji coba dengan guru dan peserta didik juga menghasilkan hasil yang positif. Dengan demikian, dapat disimpulkan bahwa media kartu domino ini efektif dalam membantu pengembangan kemampuan berhitung anak usia dini.

Kata Kunci : Perkembangan Kognitif, Kemampuan Berhitung, Media Pembelajaran Kartu Domino.

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Introduction

Early childhood education has a very important role and determines a child's further development because it is the basis of a child's personality. Children who receive appropriate and effective guidance from an early age will be able to improve their health, physical and mental health. Early childhood (AUD) is a group of children aged 0-6 years who are in a unique growth and development process, in the sense of having a pattern of growth and development (fine and gross motor coordination), intelligence (thinking power, creativity, emotional intelligence, and spiritual intelligence), social emotional (behavioral and religious attitudes), language and communication specifically according to the child's level of growth and development. Education is a human need as long as humans live, without education then in living this life humans will not be able to develop and will even be retarded. Education must be truly directed at producing quality human beings who are able to compete, have noble character and good morals. The essence of early childhood education displays the concept of playing while learning.

Early childhood learning is the interaction of children in play so that there is a learning process while playing and playing while learning. Therefore, learning must be oriented towards children's development, to provide opportunities to learn in the right way. Playing must be done on the child's initiative and on the child's own decision. Playing must be done with enjoyment, so that all fun playing activities will result in a good learning process for children. Therefore, teaching staff need tools such as media, so with media children will focus on the learning provided. Berdasarkan hasil penelitian di TK Negeri Pembina Metro Timur di kelompok A masih terdapat peserta didik yang tidak mampu menyebutkan bilangan 1-10. Hal tersebut dibuktikan dalam pembelajaran berlangsung di Kelompok A yang peserta didiknya bahwa terlihat ketika anak menyebutkan angka 1-10 bersama-sama anak berteriak kencang dalam menyebutkan bilangan tersebut akan tetapi apabila ditunjuk satu per satu anak tidak bisa mengucapkan bilangan 1-10 secara berurutan.

Another problem was found in research carried out on group A children, there were several children's numeracy skills that were low in the sense that they were unsatisfactory and in learning how to deliver lessons the teacher wrote numbers first without introducing symbols. There were several problems that researchers found in class which stated that some children could only say the numbers 1-10, but the children had difficulty when the children were asked to match the number symbols with the numbers. The only media used were blackboards and children's magazines. This is what causes children to become bored and bored when taught to count so that learning to count becomes less enjoyable, resulting in less development of children's numeracy skills because the media used is not appropriate and less creative.

Through the application of domino cards, it can create a learning process that is interesting, fun and able to improve children's counting skills, recognizing colors, saying number symbols, symbols and being able to solve simple problems. Of course, domino card media specifically designed for children is tailored to the child's needs. Domino cards can improve the numeracy skills of young children. By implementing this domino card media, it is hoped that children will be enthusiastic and motivated to follow counting without any coercion from us. Teachers can create a fun learning process by using updated learning media so that students can be active and easily understand the lesson material individually and in groups. Learning media is an important component in completing the teaching process to achieve learning goals at Pembina Metro Timur State Kindergarten. One type of learning media that can be developed in the learning process is domino card learning media. Children's success in learning depends on the way learning material is presented, learning media and teaching methods used by teachers in the teaching and learning process.

The domino card product specifications that the researcher created are as follows. Firstly, the domino card product is a game medium that is used as a learning medium. Second, this product is designed using stickers to make it look attractive. Third, the domino card media is made from light and durable wood with dimensions of 30 x 30 cm. Fourth, the domino card media is designed to be as attractive as possible with several colors, numbers 1 to 10 and a circle shape so that children are interested. Sixth, game media is created according to children's characteristics and to improve the cognitive abilities of young children.

So researchers developed learning media for counting using media. The learning media developed is our media. Teachers can create a fun learning process by using updated learning media so that students can be active and easily understand the lesson material individually and in groups. Learning media is an important component in completing the teaching process to achieve learning goals at Pembina Metro Timur State Kindergarten. One type of learning media that can be developed in the learning process is domino card learning media. Children's success in learning depends on the way learning material is presented, learning media and teaching methods used by teachers in the teaching and learning process. The domino card product specifications that the researcher created are as follows. Firstly, the domino card product is a game medium that is used as a learning medium. Second, this product is designed using stickers to make it look attractive. Third, the domino card media is made from light and durable wood with dimensions of 30 x 30 cm. Fourth, the domino card media is designed to be as attractive as possible with several colors, numbers 1 to 10 and a circle shape so that children are interested. Sixth, game media is created according to children's characteristics and to improve the cognitive abilities of young children.

Domino card-based learning media can stimulate students to be more active in learning, this media can be applied to games so that students do not get bored

easily in learning. Domino card-based learning media is easy to use in learning and practical to carry everywhere because of its relatively small size. Domino card-based learning made by researchers has a different shape, ordinary domino cards, which differ from ordinary domino cards, namely that the domino cards made by researchers contain domino cards in the shape of a circle, and have several different sizes. Inside the circle there are pictures in the form of numbers, symbols and colors. The principle of playing dominoes is that Sulis is asked to count how many dots there are and the child matches them with the numbers, namely 1-10. Based on the principles of how to play dominoes, children usually count and match the appropriate numbers. Generally, students like learning while playing because it makes the learning atmosphere more fun, not boring and students can be more active in learning, students will also interact with other students.

The aim of using domino cards is one of the educational games that serves to introduce the concept of numbers, especially the concept of recognizing numbers and counting objects, recognizing groups of objects with the same or unequal number of objects, fewer and more. By using domino cards, it is hoped that it can help children to make the concept of numbers easier in a simpler way. From the background description above, it is clear that the numeracy process of students at the Pembina Metro East Kindergarten in the observations carried out by researchers obtained several identifications of the students' numeracy abilities. For students at Pembina Metro Timur State Kindergarten, students have problems in counting numbers 1-10, there is a need for educational and creative learning media to support students' learning to count. So the researchers conducted research on "Development of Domino Card Media in Early Childhood Numeracy Materials in the Pembina Metro East State Kindergarten"

Method

This research uses research and development (R&D) methods with the ADDIE model approach which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. The analysis stage was carried out to understand the learning curriculum, learning objectives, and students' learning needs through interviews with teachers and questionnaires to students at the Pembina Metro East State Kindergarten. Next, the design stage produces a picture of a domino card learning media product that allows social interaction between students and presents learning material with the concepts of geometry, color, numbers, counting and teamwork. The development process involves assessment from validators to improve the product, while the implementation stage involves testing with teachers and students, both individually and in small groups. Evaluation is carried out to measure the suitability of the product and improve its quality by taking into account input from various experts and trials on small groups of students.

Result and Discussion

A. Hasil Analisis Kebutuhan

The development of domino card learning media for early childhood begins with collecting information about problems that arise during the learning process. This initial data gives researchers ideas for learning media that will be developed further. Early childhood numeracy skills can be improved through stimulation provided by parents and educators, including through the use of learning media such as domino cards. This learning media was prepared based on an analysis of needs at the Pembina Metro East State Kindergarten to improve the numeracy skills of early childhood, especially children aged 4-5 years. The process of developing domino card learning media for young children goes through several stages.

1. Analysis Stage

involving researchers in analyzing the learning curriculum, learning objectives, and learning needs of students at Pembina Metro Timur State Kindergarten through interviews with teachers and questionnaires to students. Based on the results of the analysis, researchers are interested in developing domino card learning media as a solution to improve learning in group A children.

2. Design Stage

includes an overview of domino card media products with designed components, such as 30x30cm cards that can be played by 1-3 or more people, with a focus on the concepts of geometry, color, numbers, counting and teamwork. Next, the development stage involves realizing the product design that has been designed, involving validator assessments to provide suggestions and input.

3. Implementation Stage

carried out after the product has been revised and declared feasible by the validator, by testing it on teachers and students, both in small and large groups.

4. Evaluation

carried out through suggestions and assessments from media, material and practitioner experts, as well as trials on small groups of students to measure feasibility and improve overall product quality.

B. Product Trial Results

After validation by media experts and material experts, the next stage is the product testing stage. This stage is carried out after the domino card media is declared feasible by media and material experts. The product was tested on homeroom teachers and students in Group A totaling 15 children. This stage aims to determine the response of teachers and students as media users and analyze the effectiveness of using domino card media.

1. Teacher Response Results

Teacher Validation Trial Results

No	Rated Aspect	Skore			
		1	2	3	4

1	Display of domino card learning media on numeracy material at the Pembina Metro East Kindergarten	<input type="checkbox"/>
2	The images on domino cards are attractive to children	<input type="checkbox"/>
3	The color display on the domino card media is attractive	<input type="checkbox"/>
4	How to use domino card media is easy for children to use	<input type="checkbox"/>
5	Domino card media can be used in groups or individually	<input type="checkbox"/>
6	Practice the ability to add numbers 1-10	<input type="checkbox"/>
7	Suitability of domino card media material to the child's developmental age level (4-5 years)	<input type="checkbox"/>
9	Able to encourage children's curiosity about domino card media	<input type="checkbox"/>
10	Media trains children's ability to recognize colors	<input type="checkbox"/>

$$10 \times 4 = 40$$

$$\begin{aligned} NP &= \frac{R}{SM} \times 100\% \\ &= \frac{36}{40} \times 100\% \\ &= 90,00\% \end{aligned}$$

Based on the calculation results above in table 4.4, it can be seen that the total score obtained is 36, so the presentation gets a score of 90.00% and is included in the "very feasible" category without any revisions to the product being developed, so that the homeroom teacher agrees with the product being developed. and can be tested on students.

2. Results of Research Instrument Trials

Products that have passed the expert validation testing stage have been declared feasible, then tested on group A homeroom teachers at Pembina Metro Timur State Kindergarten and have been declared feasible. After that, the trial continued with Group A students, totaling 15 students.

a. Results Instrument Stage 1

With the research instrument sheet that has been created by the researcher, see the table below:

No	Nama	Jumlah Skor	Skor Ideal
1	Abidah	26	36
2	Afdilan	25	36
3	Aira	21	36
4	Alyka	26	36
5	Annisa	21	36
6	Asheqa	21	36
7	Danish	21	36

No	Nama	Jumlah Skor	Skor Ideal
8	Devtan	25	36
9	Hafiz	21	36
10	Hendika	21	36
11	Husnul	25	36
12	Kenzo	21	36
13	Kevan	21	36
14	Kevin	21	36
15	Khayla	25	36
Total		341	525
Persentase Skor		81,19 %	

Keterangan:

$$\begin{aligned}
 NP &= \frac{\sum \text{Skor}}{\sum \text{Skor Ideal}} \times 100\% \\
 &= \frac{341}{525} \times 100\% \\
 &= 81,19\%
 \end{aligned}$$

Based on the calculation results above in table 4.5, it can be seen that the total score obtained is 341, so the percentage of children's scores in the development stage at stage 1 on Monday, January 8 2024 is 81.19%.

b. Hasil Results Instrument Stage 1

With the research instrument sheet that has been created by the researcher, see the table below:

Table 4.6
Results Instrument Stage 2

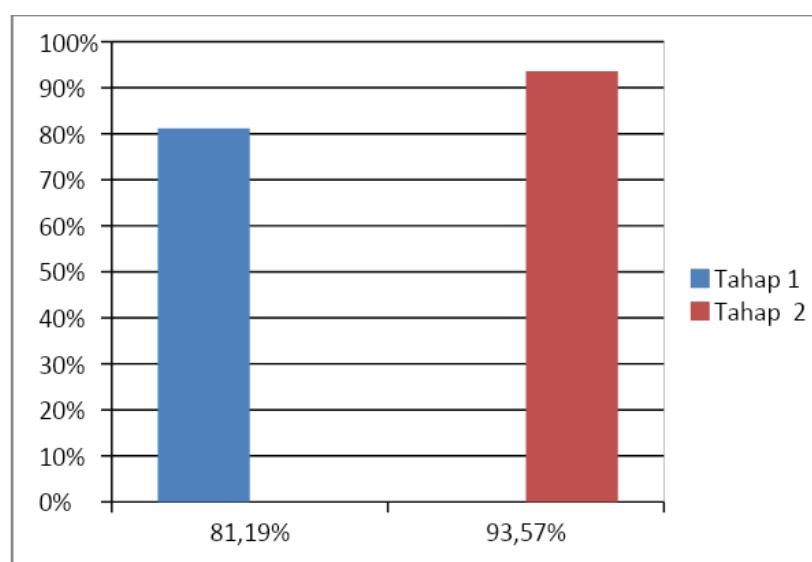
No	Nama	Jumlah Skor	Skor Ideal
1	Abidah	28	36
2	Afdilan	26	36
3	Aira	25	36
4	Alyka	28	36
5	Annisa	25	36
6	Asheqa	26	36
7	Danish	26	36
8	Devtan	26	36
9	Hafiz	26	36
10	Hendika	26	36
11	Husnul	28	36
12	Kenzo	26	36
13	Kevan	25	36
14	Kevin	26	36

No	Nama	Jumlah Skor	Skor Ideal
15	Khayla	26	36
Total		393	525
Presentase Skor		93,57%	

Keterangan:

$$\begin{aligned}
 NP &= \frac{26}{36} \times 100\% \\
 &= \frac{393}{525} \times 100\% \\
 &= 93,57\%
 \end{aligned}$$

Based on the calculation results above in table 4.6, it can be seen that the total score obtained is 393, so the percentage score of children in the development stage at stage 2 on Wednesday, January 10 2024 is 93.57%.



Conclusion

Based on the results of research that has been carried out on the development of domino card learning media to improve the cognitive abilities of young children, it is stated that the domino card media that researchers have developed can improve the numeracy skills of early childhood which was developed using the Research and Development (R&D) research method, the ADDIE development model. carried out in five systematic steps, namely analysis, design, development, implementation, evaluation. The validation results of media experts and material experts can be said to be that the domino card learning media for improving the numeracy skills of young children meets the elements of educational aspects, appearance aspects, is good and appropriate. The use of domino card game media in learning activities for students at Pembina Metro Timur State Kindergarten

can be categorized as effective. This can be seen from the students' positive response to the domino card game media which is applied in learning activities. This can be seen from the student learning outcomes from the first meeting of 81.19%, increasing at the second meeting of 93.57%.

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