Fun Number Recognition Cards as a Learning Media to Count for 4-5 Years Old Children

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	ABSTRACT
	Mathematics education is a very important education. Early childhood is a golden age, namely the age of 0-6 years in Indonesia and abroad, namely at the age of 0-8 years. According to Jean Piaget, this has been the main reference for the kindergarten curriculum and even education in general. The first step is to design a fun number learning media with the latest literature. The design is tested by experts and validated according to the needs of students. The result of the author's initial observation in the field is that Amira kindergarten students aged 4-5 years do not globally understand the lack of development in the cognitive aspect of knowing numbers and symbolic thinking for effective results. %. Based on the discussion above, it can be concluded that playing while learning using cards recognizes cool numbers in improving six aspects of development in children aged 4-5 years at Amira Plered Purwakarta Kindergarten. **Keywords**: *Children, Learning Media*

INTRODUCTION

Mathematics education is a very important education. Early childhood is a golden age, namely the age of 0-6 years in Indonesia and abroad, namely at the age of 0-8 years (Vial, 2019). According to Jean Piaget (Golden & Gajendran, 2019), it has become the main reference for the kindergarten curriculum and even education in general (Bai dkk., 2021). Piaget assumes that at the age of under 7 years children have not reached the concrete operational phase (He dkk., 2019). The phase where children are considered to be able to think structurally. While learning to read, write and count (calistung) itself is

defined as an activity that requires structured thinking (Albrecht & Chin, 2020), so it is not suitable to be taught to early childhood (Song dkk., 2020). Piaget was concerned that children's brains would be overloaded if calistung lessons were taught to children under 7 years old.

Learning to read, write, count and even science is no longer considered foreign in early childhood education.

To learn them so that children consider learning activities not like playing and even in the form of a game. Because the child's world is play, including feelings of pleasure (Hassan dkk., 2021), active, not forced, democratic, active and also independent.Learning is arranged to be fun, not forced, and make children interested in participating.Making children comfortable in the early childhood learning process is the main key.As an educator, of course we also want our children to learn fun learning while playing.Then it is important for parents and educators to start introducing learning to count from an early age (S. Wang dkk., 2019). To teach introducing numbers can also be done through the form of games that they like (Penconek dkk., 2021). Therefore educational game tools (APE) are needed as a learning medium that will help play while learning (Vial, 2019). Educational game tools children will do activities that can improve cognitive development and develop fine motoric (Pfattheicher dkk., 2022). This active and fun activity will also increase brain cell activity which can increase memory which will further develop the learning process.

However, currently the availability of educational game tools that can at the same time help deliver number recognition material is still quite rare.

help deliver number recognition material is still quite rare (Caniëls dkk., 2019). For this reason (Gao dkk., 2021), the author innovated to develop an educational game tool product that can help early childhood learn to recognize numbers, which the author named "Cards Knowing Asik Numbers" (Peng dkk., 2020) . With "Cards Knowing Asik Numbers" it is hoped that children when learning to recognize numbers will no longer be a boring time (Zhang & Jin, 2020). But it becomes a fun time, because it is delivered by playing while learning.

LITERATURE REVIEW

Cards Knowing Asik Numbers is an educational game tool, as a medium for learning to recognize numbers and making it easier for children to recognize numbers for counting at the next stage for early childhood levels, because the author has not found research with this title and type of Ape (Jiang dkk., 2019), to make it easier for children to learn to recognize hijaiyah numbers and to make it easier to count at the next stage.

Cognitive development is very important for the success of students at school.

The steps for making media Cards Knowing Fun Numbers are

1. Prepare tools and materials first.

2. Cut the cardboard in the shape of a rectangle,

3. Cut a rectangular piece of color folding paper in the size of a card

4. Glue the card size cardboard pieces.

5. Stick color folding paper on cardboard that has been glued and shaped cards.

After making cards like the method above, the application / use of the media 'Cards Knowing Asik Numbers" used for early childhood is distributed by the teacher to students (Salminen dkk., 2020). Orders to children to line up according to the numbers obtained by each learner from the smallest number to the largest number (Zhang & Jin, 2020), such activities are activities that provide the development of religious and moral values by moving to get physical motoric, namely moving and social emotional adjusting the line according to the card obtained (Hu dkk., 2019), as well as gaining knowledge and honing cognitive development, and by introducing numbers from cool learning cards children can recognize number numbers as well as being able to develop artistic development (Vial, 2019), as well as in terms of language development because by adjusting the line of learners becomes developed.

RESEARCH METHODOLOGY

The first step is to create a cool numbers learning media design with the latest literature (F. Wang dkk., 2019). The design is tested by experts and validated according to the needs of students (Arora dkk., 2019). The design that has been tested enters the stage of making and testing the feasibility of use (Van Doren dkk., 2019). The trial was conducted at Amira Kindergarten to determine the increase in understanding of numbers with fun number learning media. The trial used an experimental design with a one short pre-test and post-test design.

RESULT AND DISCUSSION

The results of the author's initial observations in the field were that Amira kindergarten students aged 4-5 years did not globally understand the lack of development in the cognitive aspect of knowing numbers and symbolic thinking for effective results (Low dkk., 2019). Researchers conducted research by conducting games using "media cards recognize numbers asik" and research 3 children only (Yang dkk., 2019). Researchers conducted observations, observations and explained that how to play the media "Cards recognize cool numbers" (Chen dkk., 2019). The initial condition of using the media was that the students were still confused and did not understand (Arora dkk., 2019). Researchers found that these 3 children had not developed their knowledge of knowing numbers.
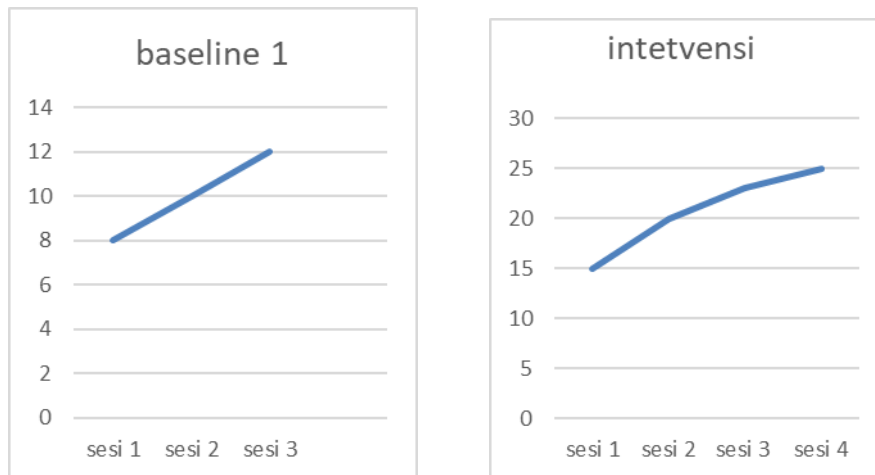
Baseline 1 Acquisition Score (Session 1-3)

	Test Achievement Session to %		
Name	1	2	3
AL	13,3%	16,6%	20%

Intervention Acquisition Score (session 1-4)

	Test Achievement Session to %			
Name	1	2	3	4
AL	25%	33,3%	38,3%	41,6%

AL Subject Calculation

Child's Name: AL

Mean Level Baseline 1 (A) = (number of scores)/(number of Sessions)

$$= (8+10+12)/3$$
$$= 30/3$$
$$= 10$$

Percentage = 10/60x100%

$$= 16,6\%$$

Mean Intervention Level (B) = (Number of Scores)/(Number of Sessions)

$$=(15+20+23+25)/4$$
$$=83/4$$
$$=20,75$$

Percentage =20.75/60x100%

$$=34,58\%$$

Mean Level Baseline 2(A) = (Total Score)/(Number of Sessions)

$$= (30+34+35)/3$$
$$=99/3$$
$$=33$$

Percentage =33/60x100%

=55%

Baseline 1 (A) Stability Trend Analysis

Stability Range = High Score X Range (0.15)

= 12x0,15

= 1,8

Percentage = 1.8/60x100%

= 3%

Mean Baseline 1 (A) = (Number of Scores)/(Number of Sessions)

= (8+10+12)/3

=30/3

= 10

Percentage = 10/60x100%

= 16,66%

Upper limit = Mean Level + (0.5 x Range)

= 16,66 + (0,5x 3)

= 16,66 + 1,5

= 18,16%

Lower Limit = Mean Level - (0.5 x Range)

= 16,66 - (0,5 x 3)

= 16,66 - 1,5

= 15,16%

Stability Trend = (Data in the range)/(Many Sessions)x 100%

=1/3x100%

= 33%

Intervention Stability Trend Analysis (B)

Stability Range = High Score X Range (0.15)

= 25 x 0,15

= 3,75

Percentage = 3.75/60x100%

= 6,25%

Mean Intervention level (B) = (number of Scores)/(Number of Sessions)

= (15+20+23+25)/4

= 83/4

= 20,75

Percentage = 20.75/60x100%

=34,58

Upper Limit = Mean level + (0.5 x Range)

= 34,58 + (0,5 x 6,25)

= 34,58 + 3,125

= 37,705%

Lower Limit = Mean level - (0.5 x Range)
> = 34,58 - (0,5 x 6,25)
> = 34,58 - 3,125
> = 31,455%

Stability Trend = (Data in the range)/(Many Sessions)x100%
> = 2/4x100%
> = 50%

Baseline 2 Stability Trend Analysis (B)

Stability Range = High Score x Range (0.15)
> = 35 x 0,15
> = 5,25

Percentage = 5.25/60x100%
> = 8,75%

Mean Level Baseline 2 (A) = (number of Scores)/(Number of Sessions)
> = (30+34+35)/3
> = 99/3
> = 33

Percentage = 33/60x100%
> = 55%

Upper Limit = Mean Level + (0.5 x Range)
> = 55 + (0,5 x 8,75)
> = 55 + 4,375
> = 59,375

Lower Limit = Mean Level - (0.5x Range)
> = 55 - (0,5 x 8,75)
> = 55 - 4,375
> = 50,625

Stability Trend =3/3x100%
> =100%

Baseline 1 Acquisition Score (Session 1-3)
Session Test Achievement %
Name 1 2 3
ZE 14.28% 17.14% 20%

Intervention Acquisition Score (Session 1-4)
Session Test Achievement %
Name 1 2 3 4
ZE 28.57% 31.42% 35.71% 42.85%

3 Baseline 2 Acquisition Score (Session 1-3)

Test Achievement Session to %
Name 1 2 3
ZE 52.85% 57.14% 64.28%

ZE Subject Calculation
Child's name: ZE
Mean Baseline 1 (A) = (number of scores)/(number of sessions)
   = (10+12+14)/3
   = 36/3
   = 12
Percentage = 12/70 x 100%
   = 17,14%
Mean Intervention Level (B) = (number of scores)/(number of sessions)
         =(20+22+25+30)/4
         = 97/4
         = 24,25
Percentage = 24.25/70 x100%
         = 34,64%
Mean Level Baseline 2 (A) = (number of Scores)/(Number of Sessions)
         =(37+40+45)/3
          = 122/3
       = 40,66
Percentage =40.66/3 x100%
         = 58,085%

Baseline 1 (A) Stability trend analysis
Stability Range = High Score X Range (0.15)
         = 14X0,15
      = 2,1
      =2,1/70 x100%
         = 3%

Mean Level Baseline 1 (A) = (number of Scores)/(Number of Sessions)

   = (10+12+14)/3
   = 36/3
   =12
Percentage = 12/3 x100%
   = 17,14%

Upper limit = Mean Level + (0.5 x Range)
   = 17,14 + (0,5X3)

= 17,14 + 1,5

  = 18,64%

Lower limit = Mean level - (0.5X Range)

  = 17,14 - (0,5x3)

  = 17,14 - 1,5

  = 15,64%

Stability tendency = (data in the range)/(Many Sessions) x100%

  = 1/3 x100%

  = 33%

Intervention Stability Trend Analysis (B)

Stability Range = High Score x Range (0.15)

                    = 30 X 0,15

                    = 4,5

      Percentage = 4.5/70 x100%

    = 6,43%

Mean Intervention Level (B) = (number of Scores)/(Number of Sessions)

        = (20+22+25+30)/4

        = 97/4

        = 24,25

Percentage = 24.25/70 x100%

        = 34,64%

Upper limit = Mean Level + (0.5 X Range)

        = 34,64 + (0,5 X6,43)

        = 34,64 + 3,215

        = 37,855%

Lower limit = Mean Level - (0.5 X Range)

        = 34,64 - (0,5 X 6,43)

        = 34,64 - 3,215

        = 31,425%

Stability Tendency = (data in the range)/(Many Sessions) x100%

        = 2/4 x100%

        = 50%

Analysis of Baseline 2 (B) Stability tendency

Stability Range = High Score X Range (0.15)

        = 45X0,15

        = 6,75

Percentage = 6.75/70 x100%

        = 9,64%

Mean Baseline 2 (A) = (number of Scores)/(Number of Sessions)

        =(37+40+45)/3

        = 122/3

        = 40,66

Percentage =40.66/70 x100%

        = 58,085%

Upper limit = Mean Level + (0.5 X Range)

        = 58,085 + (0,5 X 9,64)

        = 58,085 + 4,82

        = 62,905%

Lower limit = Mean Level - (0.5 X Range)

        = 58,085 - (0,5 X 9,64)

        = 58,085 - 4,82

        = 53, 265%

Stability Trend =3/3 x100%

        =100%
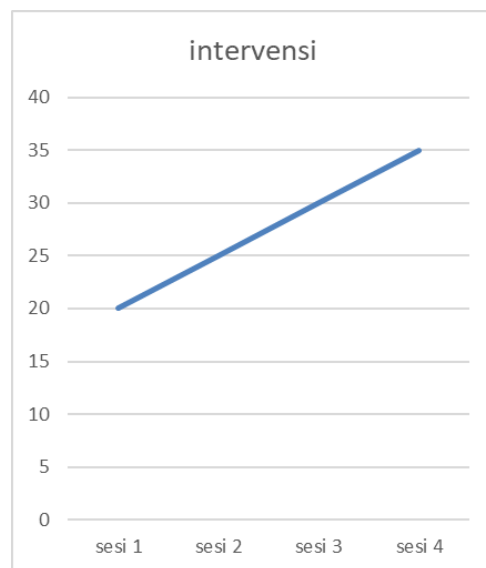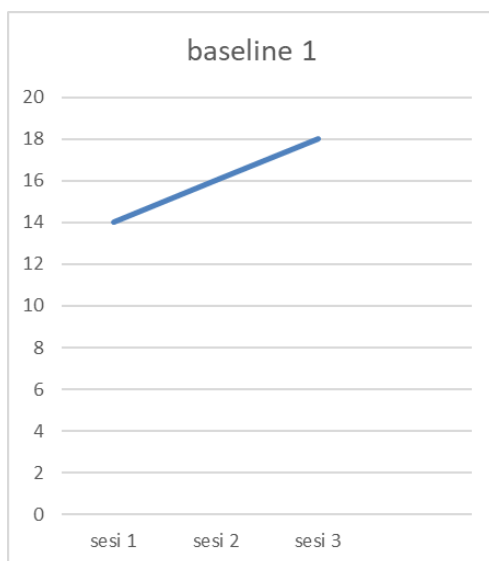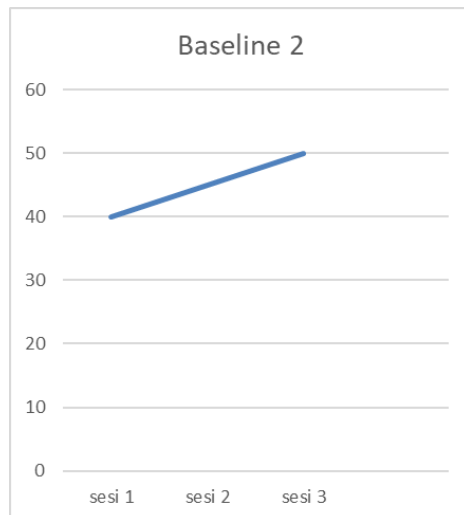
Based on research conducted at Amiraselama Kindergarten for 10 observations conducted three times in baseline conditions before being given intervention (A1), four times in intervention (B), and three times in baseline conditions (A2) the first to third meetings of children tend to be simple with a value of 13.3% - 20%. While in the intervention condition (B) the results began to make a lot of progress 25% - until day 7 35.71%. The tenth day the child has been able to solve problems, think symbolically and recognize numbers, seen from the value range of 43.75%. The activity of playing while learning using "cards to recognize fun numbers" has an effect because it sees the results of the research. In baseline A2, 3 studies were conducted, in the first study the ability to solve problems and think symbolically, namely 50%, 52, 85%, 50%, in the first observation of the second to third the ability of these 3 children continued to increase with a percentage of 56.6%, 58.3%57.14%, 64.28%56.25%, 62.5%. Measurement of this variable is by percentage.

Based on the data analysis that has been presented above, it can be proven that the learning activities of the card media recognize cool numbers in increasing children's recognition of numbers, problem solving and symbolic thinking, social emotional, art and nam at Amira Kindergarten for children aged 4-5 years. And with this cooking class activity, there are many benefits, children will be more explored to play in groups that are fun and recognize numbers.

CONCLUSION

The results of the study indicate that learning using the media "cards recognize asik numbers" with play while learning activities can improve problem solving skills, and symbolic thinking, social emotional, art, language, cognition, physical motor skills in children of Amira Kindergarten Group A students aged 4-5 years, school year 2022/2023. In this case it can be seen that the increase in the percentage of children's learning outcomes in Baseline 1A, Intervention, Baseline 2A is developing well as expected. With observations of the 1st and 2nd subjects 13.3%, 14.28% and the 3rd subject 17.5%. After using the cool number recognition card machine, children are able to arrange numbers from smallest to largest in rows, count 1-10, and recognize

numbers, number shapes. According to the research, the value increased to 58.3% 64.28%, 62.5%. Based on the discussion above, it can be concluded that playing while learning using cards recognizes fun numbers in improving six aspects of development in children aged 4-5 years at Amira Plered Purwakarta Kindergarten.

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