

The Ability to Know the Concept of Numbering at Children Group A through Dakon's Game Modification

Nia Aminatus Sholihah*, Mustaji**, Miftakhul Jannah**

*Master Program of Basic Education, Post-graduate Program, Surabaya State University

**Promotor and Co-Promotor of Thesis, Post-graduate Program, Surabaya State University
Surabaya, Indonesia

DOI: 10.29322/IJSRP.10.01.2020.p9729

<http://dx.doi.org/10.29322/IJSRP.10.01.2020.p9729>

Abstract- Research has been conducted to describe the ability to know the concept of numbering at children group A through the Dakon's Game modification. The research method is to use quasi experimental research with non-equivalent pre-test post-test control group design. Population and samples are group A kindergartens in Sidoarjo. Data collection techniques using observation sheets. The results showed that there was an influence on the Dakon's game modification to the ability to know the concept of numbering at group A.

Keywords- *know the number concept, modification Dakon game, group A*

I. INTRODUCTION

The ability to know of numbering concepts is a cognitive ability that is one of the 6 aspects of child development [1]. Cognitive ability is a thought process, which is an individual's ability to connect an event or event [2]. Cognitive development is part of the development of mind. Thoughts are part of the brain's thought process. The mind can be used to solve or solve a problem quickly and appropriately. The mind can also be used to recognize, know, and understand [3].

Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 137 Year 2014 on national standards for early childhood education on cognitive development aspects reveals that children aged 4-5 years should have been able to cross the number one to ten and understand the concepts and emblems of the number ten and understand the concepts and emblems of

numbers [4]. Gessel and Amtruda in Susanto suggested that at the age of 4-5 years is a period of mathematics study. At this stage, the child begins to learn simple mathematics for example mentioning numbers and counting number sequences.

Early Childhood mathematics learning can be taught through playing media, as the age of 4-5 is a game age for children [5]. Play also opens up opportunities for the child to create, shape, discover, and build using existing media, such as playing clay or plasticine and playing beams [6].

The results of observation in TK showed that the ability of children in recognizing the concept of number less, allegedly because of the limitation of educational AIDS (APE) owned by the school so that the counting ability has not developed to the fullest.

One method of learning is thought to introduce the ability to count children is through a method of Congklak play [7]. Counting ability is an ability to use logical reasoning and numbers. According to Yulianty, it turns out that playing Congklak can also train good kids in counting. In addition, children who play Congklak must be clever in making a strategy to win the game. The game, called Dakon in Javanese, is usually played by two daughters [8]. The concept of playing in children should be in accordance with the development phase [9].

The method of play is a teaching method where the teacher gives the child the opportunity to play a particular game, such as the one in everyday life [10]. Play has several meanings, other elements of play are repetition

with repetition of the child gaining the opportunity to consolidate his skills [11]. A simple game can be a vehicle to become such a complex game, through playing a child can safely declare his needs [12]. So it can be said that all the games can express a sense of hate, fear, and emotional social.

This is in accordance with the research results of Wirdawati and Ismet (2018), there is an increase in the calculation of children through congklak’s media modification [13], the research results Pradanawati and Sartinah (2017), the ability to manufacturer children A Group to increase the maximum After being given treatment with a Dakon’s game modification [14], and the results of the research Mardiani and Maulidiyah (2019), there is the influence of Congklak’s game modification to the ability to know the symbol of the number of children [15].

The researchers hope, with the Dakon’s game modification is able to influence the ability to know the concept of numbering at children group A in better direction.

II. IDENTIFICATION, RESEARCH AND COLLECT IDEA

The research method is to use experimental quasi research with non-equivalent pre-test post-Test control group design [16]. The Data is retrieved using an observation sheet to know of numbering concepts. The indicators of the ability to know of numbering concepts as follows:

Table 1. Indicator ability know the number concept [17]

Num	Indicator
1	Crosses and mentions sequence number 1-10.
2	It crosses (recognizes the concept of numbers with objects 1-10).
3	Create a sequence of numbers 1-10 by using objects, connecting or pairing number symbols with objects 1-10

	(children are not instructed to write).
4	Distinguish or accumulate two objects of the same number, which are not equal, more or less.

Observation sheet is given for assessment on the learning process of number concept in children. Measurements use 1 to 4 stars [18], which describes the level of child's ability to know of numbering concepts. The grid of instruments assessment of the ability to know the concept of numbering as follows:

Table 2. The ability to know of numbering concepts

Num	Indicator	Instrument Item
1	Manufacturers of many objects 1 to 10.	1. Manufacturers of many grains, rocks on the Dakon’s game modification.
2	Knowing, mentioning and showing and distinguishing the form of symbol number 1-10 appropriately.	2. Know the number 1-10 with Dakon’s game modification. 3. Call number 1-10 with Dakon’s game modification. 4. Sorting numbers 1-10 with Dakon’s game modification. 5. Shows the number 1-10 with Dakon’s game modification. 6. Shows the sequence of numbers 1-10 with Dakon’s game modification. 7. Distinguishing numeric form 1-10 with Dakon’s game modification. 8. Know the number 1-10 with Dakon’s game modification.
3	Calculates the amount of	9. Counting number of grains with

Num	Indicator	Instrument Item
	grain, and the number of rocks quickly.	Dakon's game modification.
10.	Counting the number of fishes with Dakon's game modification.	
11.	Calculating the number of rocks with Dakon's game modification.	
12.	Comparing the number of seeds with numbers on Dakon's game modification.	
13.	Comparing the number of grains with the number of rocks with Dakon's game modification.	

	Preliminary Observation Result	Final Observation Result	Preliminary Observation Result	Final Observation Result
Average	9.39	12.91	4.69	9.13
Deviation Standar	7.47	1.13	7.38	4.92
Lowest Value	8.00	11.00	3.00	8.00
Highest Value	11.00	16.00	6.00	10.00
Percentage (%)	7.95		75.00	

The results of the control class observation followed by 32 children, especially the A1 class. The instrument of control class related to the ability to know the concept of number 13 indicators, where the indicator is divided into 3 levels of developmental achievement. The Division of the indicator in sequence, which is the manufacturer of many objects 1-10 includes 2 scoring indicators of the indicator number 1-2, then know the symbol of number 1-10 includes 6 indicators of assessment of the indicator number 3-8, and recognize the concept of Number includes 4 scoring indicators of the 9-12 indicator number.

III. RESULT OF FINDINGS

Observation conducted on group A in TK Sidoarjo, in the control group, teachers carry out the appropriate learning conducted daily without treatment, while in the experiment group, in the implementation of learning The teacher provides treatment using Dakon's game modification [19]. Assessment conducted in group A in TK at Sidoarjo, provided in accordance with the grid instrument of the ability to know the concept of numbers, among which is a number of objects that are told to the children 1-10 in order, crossing 1-10 in reverse, Know the symbol of numbers 1-10 and know the concept of numbers.

The result of the observation on the concept of numbers done, both in the control group and the group of experiments can be seen in the table below.

Table 3. Preliminary and final observation of the ability to recognize number concepts in the control group and Experiment Group

Description	Control Group	Experiment Group
-------------	---------------	------------------

The initial observation of the ability to recognize the number concept in the control group had an average of 26.68. The value of the standard deviation is 3.14 and from the recapitulation of the initial observation of the ability to recognize the number concept has the highest value 32.00 and the lowest value of 20.00. As for the final observation the ability to recognize the number concept of the control group has an average of 36.55. The default value of the final observation result is 2.61 and from the recapitulation of the final observation, the ability to know the concept of numbers has the highest value of 41.00 and the lowest value of 30.00.

In Table 3, the mean difference between the initial observation of the control group is 9.87. These results can be said that the control group has an increase of 20.56% in the ability to recognize the concept of numbers from the initial observation and final observation.

The initial observation of the ability to know the numbering concept in the experimental group has an average of 26.32. The value of the standard deviation is 3.00 and from the recapitulation of the initial observation

of the ability to recognize the number concept has the highest value 31.00 and the lowest value of 20.00. While the final observation of the ability to know the number concept in the experiment group has an average of 39.55. The default value of the final observation result is 2.74 and from the final observation data the ability to know the concept of numbers has the highest value of 42.00 and the lowest value is 33.00.

In Table 3, the mean value of the average difference between the initial observation and the final observation of the ability to know the numbering concept in the control group is 13.23. These results can be said that in the experimental group there was an increase of 27.56% in the ability to know the concept of numbers from the initial observation and final observation.

From the description above it can be shown that both groups, both the control and experiment groups experienced an increase in the final outcome, but the experimental group experienced a treatment improvement using Dakon's game modification. Have a higher percentage (27.56%) than the control group (20.56%) who do not get the treatment using Dakon's game modification. This means that the media is modified in the experimental group to influence the ability to know the number concepts in children.

Test the difference of acceptance to know the concept of numbers between before and after the use of Dakon's game modification in the research is done using paired sample t test. Decision making of the different test is as follows:

- a. If the value of the calculated t more bear than the value of t-table or significance value of < 0.05 then H_0 rejected, so there is a difference in the ability to know the concept of numbers before and after using a Dakon's game modification.
- b. If the value of the t-calculated is smaller than the table or significance value > 0.05 then H_0 is accepted, so not be able to.

Based on the results of the Independent sample t-test is known that the T-count value is 9.569 whereas the t-table value obtained from 22 respondents is 2.074. From these results can be known that the value t-count $>$ of the t-table, in addition to the significance value is $0.00 < 0.05$ so that it

<http://dx.doi.org/10.29322/IJSRP.10.01.2020.p9729>

can be deduced H_0 rejected, so there are significant differences in the ability to know the concept of numbers between before and after the use of Dakon's game modification.

This is in accordance with the National Education Department's developmental achievement level, where learning mathematics for children requires stages from concrete in the abstract direction, where such stages include: concrete (giving To the child the real material to be touched, seen and expressed through the child's verbal), visually (show the child on the number representing the concept), and the symbol (introduce the symbols that can represent the concept) then abstract (the child can Understand the concept of numbers) [20].

From the above exposure presented that the test results have also proved that with the use of Dakon's game modification of children can manufacturer many objects, mentioning from 1 to 10 (including know, appoint and mention) and use the number emblem to calculate (pinch or take the number of beads and count the number of beads, put the number of beads) the child can make a sequence of numbers 1-10 with objects, connect or pair the coat of arms numbers with objects 1-10 (children are not told to write). Thus, it can be stated that the modified game media is affecting the child's ability to know of numbering concepts.

IV. CONCLUSIONS

Based on the results of the research and discussion, it can be concluded that there is an influence on the game Dakon's game modification to the ability to know of numbering concept at children group A.

ACKNOWLEDGEMENTS

The author thanked:

1. Prof. Dr. Mustaji, M.Pd, as the promoter who has guided to complete this article.
2. Dr. Miftakhul Jannah, M.Pd. as the co-promoter who has guided to complete this article.
3. All friends in Master of Basic Education post-graduate Program, Surabaya State University that always provide support and passion.

REFERENCES

- [1] Suryana, D. (2016). *Pendidikan Anak Usia Dini: Stimulasi & Aspek Perkembangan Anak*. Prenada Media.
- [2] Ahmad Susanto, M. P. (2011). *Perkembangan Anak Usia Dini: pengantar dalam berbagai aspeknya*. Kencana.
- [3] Sujiono, Y. N., Zainal, O. R., Rosmala, R., & Tampiomas, E. L. (2014). Metode pengembangan kognitif.
- [4] Pendidikan, M. (2014). Peraturan Menteri Pendidikan dan Kebudayaan Republik Indonesia Nomor 137 Tahun 2014 Tentang Standar Nasional Pendidikan Anak Usia Dini. *Menteri Pendidikan dan Kebudayaan Republik Indonesia: Jakarta..*
- [5] Amir, A. (2014). Pembelajaran matematika SD dengan menggunakan media manipulatif. In *Forum Pedagogik Jurnal Pendidikan Agama Islam* (Vol. 6, No. 01).
- [6] Jawati, R. (2013). Peningkatan kemampuan kognitif anak melalui permainan ludo geometri di paud habibul ummi ii. *Spektrum: Jurnal Pendidikan Luar Sekolah (PLS)*, 1(1), 250-263.
- [7] Triyuda, D., & Ali, M. (2013). Mengenalkan kemampuan berhitung melalui permainan tradisional congklak pada anak usia 5-6 tahun. *Jurnal Pendidikan dan Pembelajaran*, 2(7).
- [8] Yulianty, R. (2011). *Permainan yang meningkatkan kecerdasan anak*. Laskar Aksara.
- [9] Fadlillah, M. (2019). *Buku ajar bermain & permainan anak usia dini*. Prenada Media.
- [10] Nasional, D. P. (2007). Pedoman pembelajaran permainan berhitung permulaan di taman kanak-kanak.
- [11] Wijayanti, R. (2016). Permainan Tradisional Sebagai Media Pengembangan Kemampuan Sosial Anak. *Jurnal CARE (Children Advisory Research and Education)*, 4(1), 69-79.
- [12] Na'im, N. B. (2015). Peningkatan Keterampilan Sosial Anak Usia 4-5 Tahun Melalui Permainan Tradisional Cublak-Cublak Suweng Di TK Aisyiah Bustanul Athfal 44 Kecamatan Banyumanik-Kota Semarang. *Bella: Early Childhood Education Papers*, 4(2).
- [13] Wirdawati, W., & Ismet, S. (2018). Peningkatan kemampuan berhitung melalui permainan congklak modifikasi. *JPGI (Jurnal Penelitian Guru Indonesia)*, 3(2), 110-113.
- [14] Suta Pradanawati, H. (2017). Pengaruh Penggunaan Permainan Dakon Modifikasi Terhadap Kemampuan Membilang Anak Kelompok A. *PAUD Teratai*, 6(1).
- [15] Mardiani, R., & Cahya Maulidiyah, E. K. A. (2019). Pengaruh Permainan Congklak Modifikasi Terhadap Kemampuan Mengenal Lambang Bilangan Anak. *PAUD Teratai*, 8(1).
- [16] Fraenkel, W., & Wallen, N. Hyun,(2012). How to design and evaluate research in education.
- [17] Nugraha, P., Kusnaeni, R., & Fitriani, H. *Buku Petunjuk Guru: Mari Bermain*. Grasindo.
- [18] Munawaroh, Z. A. (2018). *Pengaruh pemberian reward stiker bintang terhadap percaya diri anak kelompok B di TK Thoriqussalam Sidoarjo* (Doctoral dissertation, UIN Sunan Ampel Surabaya).
- [19] Sugiyono, 2008. *Metode Penelitian kuantitatif, kualitatif, dan R & D*. Bandung : Alfabeta.
- [20] Depdiknas. 2007. *Pedoman Pembelajaran Bidang Pengembangan Bahasa*. Jakarta: Depdiknas.

V. AUTHORS

Nia Aminatus Sholihah-Master Program of Basic Education, Post-graduate Program, Surabaya State University,
niasholihah16070855054@mhs.unesa.ac.id

Mustaji-Promotor of Thesis, Post-graduate Program, Surabaya State University, mustaji@unesa.ac.id

Miftakhul Jannah-co-Promotor of Thesis, Post-graduate Program, Surabaya State University,
miftakhuljannah@unesa.ac.id