



## The Influence of Traditional Game *Engklek* on the Development of Numeracy Literacy in Batam Early Childhood Education Institutions

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### Abstract

This research was conducted to significantly compare the ability to recognize numeracy literacy in children, between the group that learned with the traditional *engklek* game and the group that did not use *engklek* game, in group B at RA Miftahul Jannah Batam City during the 2023-2024 school year. Research Methods this is quantitative with an experimental approach. The population of this study was all group B children at RA Miftahul Jannah, Batam City, totaling 26 students. The sample was determined using random sampling. The sample in this study was group B1 children, totaling 13 children as the experiment group whose learning used the traditional game of *engklek*, and group B2 children totaling 13 children as the Kontrol group with conventional learning. Data on children's abilities in numeracy literacy were collected using observation techniques. Data reduction, data presentation and conclusion drawing are carried out in data analysis. Based on the research results, it is revealed that there is a significant influence of the traditional *engklek* game on the development of numeracy literacy in group B children at RA Miftahul Jannah, Batam City, which can be seen from group B1 children who learn using the traditional *engklek* game more quickly grasping the development of numeracy literacy compared to group B1 children. B2 who do conventional learning

**Keywords:** Traditional Angklek Game, Numerical Literacy, Early Childhood



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### INTRODUCTION

Early childhood education is one of the frameworks for managing learning that focuses on the evolutionary aspects and progress of six dimensions: religion and morality, Pancasila values, physical motor skills, cognitive, language, and socio-emotional aspects. However, the uniqueness and developmental stages based on age groups in early childhood should be considered. Early childhood is an appropriate time for children to receive education because it is a period of tremendous growth and development. The education provided to young children nurtures their attitudes and behaviors as human beings and can influence the human resources of a nation. Accurate strategies provided to young children can elaborate on their intellectual skills

and creativity to become valuable adults. Development is a process that occurs in every human being. In childhood, human development is closely related to the stages of child maturity. The changes experienced will have progressive and systematic characteristics.

Play is one of the primary tools in evolutionary and progressive practice. When children engage in play, many aspects of advancement are directly involved and progress further. (Khotimah & Latiana, 2021). Traditional games are those passed down from generation to generation, while modern games are those created over time and with technology. (Murwani, 2022). Andriani states that traditional toys can build a child's personality, honesty, sportsmanship, perseverance, and cooperation. Through traditional games, values and character traits can be developed in children (Nugraeny & Mukminin, 2019).

Literacy is a more transversal skill that everyone must master to succeed in education (Borgonovi, Choi, & Paccagnella, 2021). A child's proficiency in numeracy is a numeracy literacy skill that is beneficial when solving mathematical problems in daily life. Hence, numeracy literacy is an essential skill acquired by children from an early age (Wahyuni, 2022). In determining a child's academic success in the future, literacy and numeracy are two skills that must be developed and stimulated from early childhood. Children should also demonstrate proficiency in basic skills such as critical thinking, creativity, and collaboration. In their learning, children can also recognize and see the relationships between patterns, data symbols that can be used in problem-solving in their daily lives. (Wardhani et al., 2021). Numeracy skills in early childhood are also related to their ability to face basic problems and apply mathematical concepts in daily life. This involves more than just counting but also includes understanding algebraic concepts, geometry, measurement, data analysis, and probability. This refers to the knowledge, skills, behaviors, and tendencies needed for someone to be able to use mathematics in various situations. Early numeracy refers to the basics of mathematical thinking acquired in early childhood. (Yuliantina, 2022).

## METHODOLOGY

The research method used is quantitative with an experimental approach. According to Sugiyono (Kholifah, Syafrida, & Nirmala, 2022), the experimental research method is a method used in research to investigate the influence of one action on another action in a controlled condition. Arikunto (Nofri, 2022) states that the experimental method is a way of finding the cause and effect relationship between two factors deliberately induced by the researcher with the elimination, reduction, and elimination of other interfering factors. This study aims to determine the influence of traditional game "*engklek*" on the development of numeracy literacy, resulting in a significant difference in numeracy literacy recognition ability in children between group B1 learning with traditional game "*engklek*" and learning without traditional game "*engklek*" in RA Miftahul Jannah Kota Batam for the academic year 2023-2024.

## RESULTS AND DISCUSSION

This research is conducted to determine the influence of the traditional game engklek on children's numeracy literacy skills, starting with conducting pretests on the experimental and control groups. The following will explain the data from this research. The data presented here are to understand the effectiveness of introducing

the traditional game "engklek" in aiding the development of children's numeracy literacy at RA Miftahul Jannah. In this study, children are divided into two classes, each containing 13 students: one experimental class where children are invited to play engklek and another class called the control class where children are not invited to play engklek.

The pretest conducted serves for the researcher to determine the initial level of students' numeracy literacy abilities. Assessment of children is categorized as Very Good Progress (VGP), Progress as Expected (PAE), Beginning to Progress (BP), Not Progressing Yet (NPY). Below are the results of the pretest given to children in the experimental and control classes.

**Tabel 1. Hasil Pretest Anak Kelas Kontrol**

No	Category	Value	Frequency	Presentation
1	55-45	Developing very well (BSB) 0 0%	0	0%
2	44-38	Developing as expected (BSH), 1 7%	1	7%
3	37-26	Starting to develop (MB), 9 70%	9	70%
4	25-10	Not yet developed (BB)	3	23%
		<b>JUMLAH</b>	<b>13</b>	<b>100%</b>

The table above shows the data results from the pretest given to the children in the Control class. It can be observed that there is one child categorized as progressing as expected, accounting for 7%, 9 children fall into the category of beginning to progress (70%), and 3 children are categorized as not progressing yet (23%).

No	Category	Value	Frequency	Presentation
1	55-45	Developing very well (BSB) 0 0%	0	0%
2	44-38	Developing as expected (BSH), 1 7%	0	0%

3	37-26	Starting to develop (MB), 9 70%	8	62%
4	25-10	Not yet developed (BB)	5	38%
		<b>JUMLAH</b>	<b>13</b>	<b>100%</b>

**Table 2. presents the results of the pretest given to the children in the Experimental group**

The table above shows the results of the pretest administered to the children in the experimental group. In the category of Beginning to Progress (MB), there are 8 children, accounting for 62%, while in the category of Not Progressing Yet (BB), there are 5 children, accounting for 38%.

After obtaining data from the pretest distributed to both the experimental and control classes, the researcher invited the children in the experimental class to engage in play-based learning with the "engklek" game. This game was provided to the experimental class children every day before classroom learning, whereas the control class children went directly into the classroom. This was done for a period of 2 weeks.

After 2 weeks, the researcher administered the post-test to the children and also distributed a questionnaire to the teachers in each class.

**Table 3 shows the results of the post-test in the Control class**

No	Category	Value	Frequency	Presentation
1	55-45	Developing very well (BSB) 0 0%	1	8%
2	44-38	Developing as expected (BSH), 1 7%	2	15%
3	37-26	Starting to develop (MB), 9 70%	8	62%
4	25-10	Not yet developed (BB)	2	15%
		<b>JUMLAH</b>	<b>13</b>	<b>100%</b>

It can be observed that there is progress in the categories: Very Good Progress (BSB) with one child accounting for 8%, Progress as Expected (BSH) with 2 children accounting for 15%, Beginning to Progress (MB) with 8 children accounting for 62%, and Not Progressing Yet (BB) with 2 children accounting for 15%.

**Table 4 shows the results of the post-test in the Experimental class**

No	Category	Value	Frequency	Presentation
1	55-45	Developing very well (BSB) 0 0%	5	0%
2	44-38	Developing as expected (BSH), 1 7%	6	0%
3	37-26	Starting to develop (MB), 9 70%	2	62%
4	25-10	Not yet developed (BB)	0	38%
		<b>JUMLAH</b>	<b>13</b>	<b>100%</b>

Progress can be observed in the categories: Very Good Progress (BSB) with 5 children accounting for 38%, Progress as Expected (BSH) with 6 children accounting for 47%, Beginning to Progress (MB) with 2 children accounting for 15%, and there are no children categorized as Not Progressing Yet (BB).

**Table 4 Provides A Comparison Between The Pretest And Post-Test Results In the Control Class**

No	Kategori	Pre Test Frequency	Post Test Frequency	Pre Test Frequency	Post Test Presentation	Improved Frequency (%)
1	Developing very well (BSB) 0 0%	0	1	0%	8%	1/8%
2	Developing as expected (BSH), 1 7%	1	2	7%	15%	1/8%
3	Starting to develop	9	8	70%	62%	-1/8%

	(MB), 9 70%					
4	Not yet developed (BB)	3	2	23%	15%	-1/8%
	<b>JUMLAH</b>	<b>13</b>	<b>13</b>	<b>100%</b>	<b>100%</b>	<b>8%</b>

Based on the table above, it can be seen that there is an increase from children who in the pretest in the BSB category did not exist to one child BSH from one to two, MB from 9 changed to 8 experiencing a reduction because the child showed development as well as BB which increased. In the end, the percentage increase in children's ability in numeracy literacy in the control class is 8%.

**Table 5 presents a comparison between the pretest and post-test results in the Experimental class**

No	Kategori	Pre Test Frequency	Post Test Frequency	Pre Test Frequency	Post Test Presentation	Improved Frequency (%)
1	Developing very well (BSB) 0 0%	0	5	0%	38%	5/38%
2	Developing as expected (BSH), 1 7%	0	6	0%	47%	6/47%
3	Starting to develop (MB), 9 70%	8	2	62%	15%	-6/-47%
4	Not yet developed (BB)	5	0	38%	0%	-5/-38%
	<b>JUMLAH</b>	<b>13</b>	<b>13</b>	<b>100%</b>	<b>100%</b>	<b>9%</b>

There is an increase from the pretest to the post-test in the categories: BSB from 0 to 5, BSH from 0 to 6, MB from 8 to 2, and BB from 5 to 0. Ultimately, there is a 9% increase in the children's numeracy literacy abilities in the Experimental class.

From the above data, it can be seen that the children in the Experimental class showed a greater improvement compared to those in the Control class. This could be because children can learn more effectively through play-based learning compared to traditional classroom learning methods. Children easily become bored and disengaged when asked to sit still and listen for extended periods. However, if children are provided with learning opportunities while they play, it is easier for them to retain information and remain engaged. These data also demonstrate that the game engklek can help children learn and stimulate their numeracy literacy. Moreover, engklek game has various other positive impacts on children.

## CONCLUSION

The numeracy literacy skills of children at RA Miftahul Jannah in the Control class increased by 8% in the post-test, while in the Experimental class, it increased by 9% from the pretest administered before the experimental group of children was invited to play "engklek" while learning numeracy literacy. Meanwhile, the Control class children were taught in a classroom setting. This indicates that there is an influence of "engklek" game in stimulating children's development in numeracy literacy.

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