

The Influence of The Android-Based Numtrack Kids Application on Numeration Literacy in Children Aged 4-6 Years in Ra Akbar Kemayoran, Central Jakarta

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ABSTRACT

This research aims to determine the effect of using the Android-based NumTrack Kids application on numeracy literacy skills in children aged 4-6 years at RA Akbar Kemayoran, Central Jakarta. This research method is quantitative with an experimental approach (pre-experimental design) which includes treatment. The data obtained from this research are the results of abilities before and after carrying out the Android-based learning process using the "Numtrack kids" application. The pretest carried out in this research was carried out without using the "Numtrackkids" application. Meanwhile, the final posttest results were obtained from children's numeracy literacy skills using the "Numtrack kids" application. The research population was 43 with a research sample of 21 children. The t test results obtained a sig value = 0.002, which is smaller than $\alpha = 0.05$. Thus, this means that there is an influence of the Android-based Numtrack Kids application on the Numeracy Literacy abilities of children aged 4-6 years at RA Akbar Kemayoran, Central Jakarta.

Keywords: *Numtrack Kids Application, Numeracy Literacy*

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INTRODUCTION

Early Childhood Education (ECE) is an important stage in child development. At this stage, children's brains experience rapid development, making it the right time to provide optimal stimulation and education. ECE plays an important role in supporting children's development in various aspects, especially in cognitive, language, social and emotional aspects.

Numeracy literacy is a person's ability to understand and use the concepts of numbers, data and mathematical symbols in various daily life situations. This is not just about memorizing numbers and arithmetic operations, but more broadly includes the ability to manage numerical information, solve problems and think critically.

Early childhood is at the informal numeracy stage, so children should be able to number sequentially and recognize the nature of objects. Counting is an activity in counting the number of objects or identifying the number of objects. Early childhood children need to have the ability to understand and write number symbols in order to read information in the form of numerical writing.

This numeracy literacy ability is very necessary in mathematics, because it is not only always related to formulas, but also requires students' reasoning power or critical thinking patterns in answering every problem presented.

The development of information and communication technology (ICT) has brought major changes to various aspects of life, including the world of education. ICT offers various new opportunities to improve the quality of learning, including numeracy literacy learning.

Based on the results of observations and interviews with teachers at RA Akbar Kemayoran, Central Jakarta, challenges were found in increasing students' numeracy literacy, such as a lack of interest in learning numeracy among children. Learning methods still use conservative methods using books, worksheets and teaching aids. In practice, children appear less interested and quickly feel bored in learning activities in class, children's concentration is quickly diverted when children are less interested in paying attention to the activities being carried out, limited learning media are available, lack of teacher competence in using digital learning media, lack of parental support at home and the ratio of teachers and students is not ideal, causing numeracy literacy learning to not be carried out optimally.

RA Akbar Kemayoran has an application called "Numtrack Kids" which is an Android-based educational application designed to help young children learn numeracy in a fun, interactive and effective way in helping children develop various numeracy skills.

Numtrack Kids is an Android-based educational application designed to help young children learn numeracy in a fun and interactive way. This application provides various games and activities that can help children develop various numeracy skills, such as recognizing numbers and numbers, counting and basic arithmetic operations, solving simple math problems, thinking logically and critically.

Numtrack Kids uses interesting animations and cute characters to make learning to count more fun for children. Children will be entertained and motivated to learn with cute and interactive characters, NumTrack Kids offers a variety of educational games designed to help children learn to count in various contexts, NumTrack Kids uses clear and fun sounds to help children learn to count.

Based on the findings above, researchers conducted research at RA Akbar Kemayoran to determine the effect of using the "Numtrack Kids" application in teaching and learning activities on the numeracy literacy of children aged 4-6 years.

METHODOLOGY

This research is a quantitative research with an experimental approach (pre-experimental design) in which there is a treatment. This experimental research can be interpreted as a research method used to find the effect of treatment on others in

controlled conditions (Sugiyono, 2010). The design used is one-group pre-test post-test design. Where students are given a pre-test to determine children's listening skills followed by treatment in the form of group guidance, which ends with a post-test to determine whether the treatment used is effective or not. The use of this technique is to find out how much influence it has on improving children's listening skills.

Population is all subjects of research. It is a generalization area consisting of objects or subjects that have certain qualities and characteristics applied by researchers to be studied before drawing conclusions. In this study there were 43 students at RA Akbar Kemayoran Central Jakarta. The purpose of the purposive sampling technique in this study is to simplify the process of collecting and processing data. This sampling technique uses several special considerations to select research samples so that the data collected is ultimately more accurate. The experimental sample is Group B (Al Barru) taken 21 students as a sample.

FINDING AND DISCUSSION

RESULT

The data obtained from this study are the results of the Numeracy Literacy abilities of Children Aged 4-6 years before and after carrying out an android-based learning process using the "Numtrack kids" application. The pretest conducted in this study was carried out without using the "Numtrackids" application. While the final results of the posttest were obtained from children's numeracy literacy abilities using the "Numtrack kids" application. Students who participated in this study were group B consisting of 21 students aged 5 to 6 years. It is an experimental class that received treatment using the "Numtrack kids" application. These students followed the android-based learning process until the end and have completed the posttest given.

List of Summary of Numeracy Literacy Ability Test Results

No.	Code	PreTest	PostTest
1	S01	24	53
2	S02	25	53
3	S02	35	56
4	S04	21	76
5	S05	36	67
6	S06	24	78
7	S07	37	80
8	S08	29	57
9	S09	30	80
10	S10	34	58
11	S11	23	58
12	S12	29	58
13	S13	20	66
14	S14	25	62
15	S15	24	59
16	S16	25	40
17	S17	28	73
18	S18	34	72
19	S19	36	71
20	S20	35	71
21	S21	23	69

the above data can also be calculated the average of numeracy literacy skills to find out the category (minimum, maximum and mean). The average that has been calculated using SPSS 24.0 for windows is as follows:

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
PreTest	21	20.00	37.00	28.4286	5.56391
PostTest	21	40.00	80.00	64.6190	10.47128
Valid N (listwise)	21				

From the table it can be seen that the average value (mean) of the posttest is greater than the pretest, which is 64.6190 for the posttest and 28.4286 for the pretest. When viewed from the standard deviation, the posttest is greater than the pretest, which is 5.56391 for the pretest and 10.47128 for the posttest.

Hypothesis Testing

The data analysis used in this study is a difference test using (Paired Sample T-test). The Paired Sample T-test is used to make a decision whether the research hypothesis is accepted or rejected, the hypotheses tested are:

H₀ = There is no difference in the average between the pretest and posttest results or there is no effect

H_a = There is a difference in the average between the pretest and posttest results or there is an effect

The testing criteria are as follows:

If the sig. (2-tailed) value > 0.05 then H₀ is accepted and H_a is rejected

If the sig. (2-tailed) value < 0.05 then H₀ is rejected and H_a is accepted

PAIRED SAMPLES STATISTICS

		Mean	N	Std. Deviation	Std. Error Mean
PAIR 1	PreTest	28.4286	21	5.56391	1.21415
	PostTest	64.6190	21	10.47128	2.28502

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	PreTest & PostTest	21	.229	.319

Paired Samples Test

		Paired Differences			t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		
					Lower	Upper	
Pair 1	PreTest -	-	10.675	2.329	-	-	.000
	PostTest	36.19048	29	54	41.04981	31.33114	0.002

Based on the results of the Paired Sample T-test, it can be seen that the sig. (2-tailed)

value is 0.002 indicating that $0.002 < 0.05$, then H₀ is rejected. There is a difference in the average between the pretest and posttest results or there is an effect of using the Android-based "Numtrack kids" application on numeracy literacy skills. Furthermore, from the "Paired sample test" output table, there is a mean paired difference of -36.19048. This value is the difference between the average pretest and posttest results or $28.4286 - 64.6190 = -36.19048$ and the difference in these differences is between -41.04981 to -31.33114 (95% Confidence Interval of the Difference Lower and Upper)

DISCUSSION

The research conducted by the researcher is an experimental research conducted three times treatment and one pretest and posttest. Based on the results of the research at the Pretest stage conducted to determine children's numeracy literacy skills in using android-based applications, it shows that the numeracy literacy skills of children aged Group B RA Akbar Kemayoran have not yet developed optimally. This can be seen from children who do not give full attention to the teacher when learning with conservative methods with books, pictures and teaching aids. Children are seen only focusing for a moment and after that their focus shifts to other things. After a few minutes of the material being delivered, the children start to look bored. From the conditions above, it can be concluded that most children still do not have good numeracy literacy skills and a small number only focus on listening for a moment and then get distracted.

The android-based application learning method before being carried out for experiments requires some preparation before being implemented in learning. Several stages in the learning method of using android-based applications that need to be prepared are preparing the android-based numtrack kids application that will be used in delivering learning materials in class. After all the preparations are complete, the next step taken is to implement the use of the Android-based Numtrack kids application by using the Numtrack kids application to children. The last stage in practice is to evaluate children's numeracy literacy skills. When using the Numtrack kids application, several preparations are required, including preparing supporting tools such as laptops, speakers, cables, HDMI to connect the application on the cellphone with the Infocus.

In the posttest results or final results, there was a significant increase after being given treatment. There was a significant difference between the pretest and posttest results. These results can be seen with children who pay full attention to the teacher who delivers the material, can count numbers, the number of objects, do addition, subtraction exemplified by the teacher, answer teacher questions, are able to do activities in the application and are enthusiastic about doing interactive exercises in the application in the activity. The results of the analysis of children's learning data increased by 36.19 from the average pretest score of 28.42 to 64.62 on the average posttest score. The results of this study are expected to provide clearer insight into the impact of using the Android-based Numtrack kids application on numeracy literacy skills. It is also hoped that this study can provide benefits for educators and education practitioners in developing more creative, interactive and innovative learning approaches to improve the ability to understand and write number symbols in order to read information in the form of numerical writing. By investigating the influence of the learning method of using the Numtrack Kids application based on Android on literacy skills, this study can provide a positive contribution to the development of a more effective curriculum and learning strategies for early childhood education. In addition, it is hoped that this study can also provide a reference for educators to be able to better follow the development of the era 5.0 and can also attract children's interest in being able to learn while playing not only at school but anywhere and anytime,

because this application can be installed on parents' cellphones. Researchers hope that this application can function as a sustainable learning tool.

CONCLUSION

There is an influence of the Android-based Numtrack Kids application on the Numeracy Literacy skills of children aged 4-6 years at RA Akbar Kemayoran, Central Jakarta. From the calculation results using SPSS assistance based on the t-test result table, the sig value = 0.002 is obtained, which is smaller than $\alpha = 0.05$. Thus, H_0 is rejected and H_1 is accepted, which means that there is an influence of the Android-based Numtrack Kids application on the Numeracy Literacy skills of children aged 4-6 years at RA Akbar Kemayoran, Central Jakarta.

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