

APPLICATION OF CHOOSING GAMES ON NUMERATION ABILITIES IN CHILDREN AGED 5-6 YEARS

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Abstract

The ability to count is a basic ability for children who study mathematics which involves subtraction, addition, multiplication and combinations of objects with other number concepts. This research aims to determine the effect of a game on numeracy skills in young children. This game is called the choosing game and is designed using the PowerPoint application which is adapted to aspects of children's numeracy development. This research was conducted in Kediri City. This research uses a quantitative approach with quasi-experimental methods and the effectiveness of which is used to test the choosing game using the Mann U Whitney test. The sample used in this research was 24 children for the control group at the Pembina State Kindergarten, Kediri City and 22 children for the experimental group at the UN PGRI Kediri Laboratorim School Kindergarten. Based on the calculation results, there are differences in the average values obtained in the control group and the experimental group. It is known that the results of the data distribution in the control class mean rank show 17.44, while in the experimental class the results show 30.11, from the day the results for the control class and experimental class show a difference of 12.67, meaning that with a fairly large difference, H_0 is stated rejected and H_1 declared accepted. From the results obtained it can be concluded that it has been proven that there are significant differences between the control class and the experimental class. Where the use of PowerPoint-based choosing game treatment in the experimental class has an influence on the results of the posttest scores, and the absence of treatment and treatment in the control class also greatly influences the results of the posttest scores.

Keywords: counting skills, early childhood, choosing game

INTRODUCTION

In the current era, the development of technology and communication is growing rapidly in human life. The development of technology and communications can have an influence in various fields such as health, security, trade, education and defense. One type of technological development is technological development in the world of games or the gaming world. Games are a type of technology that is intended for fun, but over time can be used as a learning tool to improve several children's learning skills and curriculum.

The use of technology as a tool in teaching activities has now become a trend. The role of technology in learning activities is quite important because it is one of the

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external factors that can influence children's learning outcomes. Technology-supported learning can be provided to all students with different characteristics and needs. Computer learning is one way for teachers to use innovative and varied learning media, so that children have no limits in their learning.

Cognitive ability is a child's ability to think more complexly to carry out reasoning and problem solving. Apart from that, cognitive is all mental activities that make individuals able to assess, consider an event and make connections. To encourage children's cognitive development, teachers as the person responsible for providing education must be able to determine the appropriate method of delivering material, choose the right media and learning resources, especially by using learning resources in the school environment.

One of the abilities that children develop at preschool age is the ability to count. Numeracy is a branch of mathematics that studies subtraction, addition, multiplication and combinations of objects with other number concepts. Children should learn to count from an early age, because at an early age children are at a certain stage of pre-operational development, at this stage children learn from real objects. Therefore, educators and parents can introduce children to the concept of numbers through objects around them to train children to count, recognize numbers and recognize number symbols.

Based on the facts that researchers found in several kindergartens in Kediri, researchers found several problems, one of which was that in implementing learning in schools, teachers had never used PowerPoint-based games. This is because the school has not used IT facilities optimally and the abilities of some children at the school are still below the expected class average. This can be seen from several problems, when the teacher asks students to come forward and count one by one, especially in counting numbers 1-20, some students still have the opposite way of calculating and some still say they are not sequential.

According to (Laksana, 2021) suggests that cognitive abilities are a set of mental activities related to understanding, reasoning, memory and information management that enable a person to obtain information, solve problems, plan the future or all processes related to the nature and way a person learns, paying attention, observing, imagining, assessing, and thinking about their living environment. Furthermore (Novitasari, 2018) is the child's ability to think more complexly to carry out thoughts and solve problems, cognitive development encourages children's general knowledge to be greater and wider so that children can be useful normally in their daily lives in the community environment.

Based on the description above, it can be concluded that cognitive is a thinking process that is closely related to intelligence and can be used quickly and accurately to connect, evaluate and consider a situation to solve problems.

According to (Tola, 2019) the ability to count is the first basic step for children in learning mathematics at school. Children need to understand number problems before they have other activities in mathematics. Apart from that, according to (Astuti, 2018) counting is part of mathematics that is needed in everyday life, especially the concept of numbers which is the basis for developing mathematical skills or readiness to attend basic education.

Based on the description above, it can be concluded that counting is a branch of mathematics that studies subtraction, addition, multiplication and combinations of objects with other number concepts.

According to the KBBI, a game is something that can be used to carry out playing activities, either in the form of goods or something that can be used for playing. Meanwhile, according to (Nurhayati & Zarkasih Putro, 2021) a game is a play activity that is controlled by mutually agreed rules which are able to provide a learning experience for the players.

From the description above it can be concluded that the game is a complex activity which in its implementation has rules, the game is a way to eliminate boredom by carrying out activities that are carried out using intelligent thinking and strategies that must be built to be able to interact with well-engineered systems and conflicts. deliberately to create excitement in playing.

According to (Muthoharoh, 2019) Microsoft PowerPoint is a presentation medium that is presented through multimedia stimuli including text, audio, images, video, animation and so on which is designed in such a way that it can fulfill its function as a medium. learning. Apart from that, according to (Poerwanti & Mahfud, 2018) Microsoft Power Point is a multimedia program specifically designed for delivering presentations. Microsoft Power Point is used as an interesting means of communication so that students do not easily get bored with the learning atmosphere because educators provide different learning atmospheres.

Based on the explanation above, it can be concluded that Power Point is an MS Office application which is part of a computer program that can be used as a media for learning arithmetic because it contains articles, images, graphs, objects, clipart, films. , audio or video can be combined to make learning more interesting, interactive and fun.

METHOD

This research uses quantitative methods with the type of experimental research or quasi experimental research. The population used in this research was the Pembina State Kindergarten in Kediri City as the control group and the Laboratorium School Kindergarten as the experiment. The sampling technique was carried out using a purposive sampling technique, namely a sampling technique based on the requirements and considerations of the researcher.

The research instrument used in this research used a test sheet. Test sheets are given to children to measure the child's numeracy skills after the child receives treatment. The data collection technique used in this research is by making direct observations at the institution that is the object of research. The data analysis technique used in this research is the Mann U Whitney Test. However, before that, the researchers first carried out a normality test and a homogeneity test. The normality test is a test that has the aim of assessing the distribution of data in groups of data or so-called variables. The normality test is useful for determining the distribution of data that has been carried out to be normally distributed. After the data tested is normally distributed, the researcher then carries out a homogeneity test with the aim of finding out whether several populations have similarities or not.

If the data that has been tested is found to be normally distributed and homogeneous, then data analysis will be carried out according to the analysis

technique that has been carried out. Namely by looking for comparisons using the Mann U Whitney Test.

FINDINGS AND DISCUSSION

Findings

The research took place for 6 (six) days in 2 (two) weeks starting from November 21 to December 3. The aim of this research is to determine the effect of PowerPoint-based games on the numeracy skills of children aged 5-6 years. Data on numeracy skills in the experimental and control groups were taken via posttest sheets.

To draw conclusions from the research results, a hypothesis test was carried out using the Mann U Whitney Test. Before carrying out the Mann U Whitney Test, a normality test and homogeneity test were first carried out on the research results. Based on the results of research on children's numeracy skills in the control group and experimental group, it was found that the results of numeracy skills in the experimental group (TK Laboratory School) were higher than those in the control group (Tk Negeri Pembina Kediri City).

Table 1. Normality Test Results
One-Sample Kolmogorov-Smirnov Test

		Kelas_Kontrol	Kelas_Eksp
N		24	22
Normal	Mean	55.58	57.91
Parameters ^a	Std. Deviation	1.863	2.022
Most	Absolute	.255	.213
Extreme	Positive	.203	.150
Differences	Negative	-.255	-.213
Kolmogorov-Smirnov Z		1.250	1.000
Asymp. Sig. (2-tailed)		.088	.270

a. Test distribution is Normal.

Based on the results of the normality data, the Sig value of the control class is 0.088 and the experimental class is 0.270. From the provisions, if $\text{sig} > 0.05$, then the data is normally distributed, and if $\text{sig} < 0.05$ then the data is not normally distributed. So it can be stated that $\text{sig} > 0.05$, then the research data is declared normal.

Table 2. Homogeneity Test Results
Test of Homogeneity of Variances

Posttest				
Levene Statistic		df1	df2	Sig.
1.266		1	44	.267

Apart from that, based on the results of the homogeneity test, the Sig. posttest results from the control and experimental classes showed $0.267 > 0.05$. Data is said to

be homogeneous if the Sig value. > 0.05 , and is said to be inhomogeneous if the Sig value. < 0.05 This can be concluded that the data shows the same or homogeneous.

Table 3. Hypothesis Test Results
Test Statistics^a

	Posttest
Mann-Whitney U	118.500
Wilcoxon W	418.500
Z	-3.254
Asymp. Sig. (2-tailed)	.001

a. Grouping Variable: Kelompok

Furthermore, the final research results show that learning media has a positive effect on children's numeracy skills. From the results of the hypothesis carried out using the Mann U Whitney Test. From the results of the hypothesis tests that have been carried out, the researchers obtained results of Sig. 0.001 which is in accordance with the conditions for success. Where from the results obtained, H_0 is declared rejected and H_1 is declared accepted, which means that the use of the choosing game has an influence on the numeracy skills of children aged 5-6 years.

Discussion

The research discussion aims to provide an overview and results obtained from research on the results of posttest distribution in the control group and experimental group. In carrying out the research carried out, the researcher had two ways of taking the posttest, where in taking the posttest in the control class there was no treatment before taking the scores, whereas in the experimental group before taking the posttest scores the researcher gave treatment with a Powerpoint-based choosing game which referred to the questions to be asked. given. The difference in treatment carried out by researchers aims to compare the numeracy skills between the control group which was not given treatment and the experimental group which was given treatment in the form of a Powerpoint-based educational game, and then tested in proving the hypothesis. Proving the hypothesis which states that there is a significant influence on the control class and experimental class and it is necessary to carry out the Mann U Whitney Test.

The Mann U Whitney Test is a non-parametric test used to determine the difference in medians of 2 (two) different groups, namely the experimental group and the control group. Through the Mann U Whitney Test, it can be seen that there are significant differences in the averages of two related sample groups. Based on the comparison of Sig. (2-tailed). So Sig. equal to $0.001 < 0.05$, then H_0 is rejected. Thus, H_0 states that there is no influence on the application

CONCLUSION

The following is the conclusion of the research which refers to the results that have been measured. This research uses a Posttest-Only Design With Nonequivalent Group design using 2 (two) kindergarten institutions in Kediri City, including the

Laboratory School Kindergarten as the experimental class and the Pembina State Kindergarten in Kediri City as control class. Based on the research results, it was found that the average score for the experimental group's numeracy ability at the posttest was 30.11, while in the control group the average numeracy ability at the posttest was 17.44, this shows that there is a quite sharp difference in scores. Through data analysis using SPSS 16.0 for Windows with the Mann U Whitney Test method, significant results were obtained at $0.000 < 0.01$. So H_0 is rejected and H_1 is accepted. Thus, it can be concluded that the PowerPoint-based choosing game has an effect on the numeracy skills of children aged 5-6 years.

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PENDAHULUAN Pada prinsipnya, dunia anak usia dini adalah bermain. Pembelajaran yang diberikan pada anak perlu bersifat.