

## The Effect of Circus Adventure Circuit Game on Cognitive Development and Gross Motor Development of 5-6 Year Old

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**ABSTRACT:** This study aims to determine the effect of adventure circuit games on (1) cognitive development and (2) gross motor development of children aged 5-6 years in TKIT Bina Insan Cendekia Pasuruan. This study was conducted using the pretest posttest design of Equivalent Group Design. The data obtained were collected using the method of observation and documentation then the data obtained was analyzed using statistical analysis with T test. The t test used is paired t-test sample which aims to know the average difference between two related or pairs sample (Paired Sample T - Test). Based on the results of data analysis, it can be concluded that the game adventure circuit cheerful effect on cognitive development and gross motor development of children aged 5-6 years with the average value and the significance of the resulting significance of 0.273 for cognitive development and 0.922 for gross motor development.

### 1. INTRODUCTION

Law No. 20 Year 2003 on National Education System Article 1 paragraph 14 in the Ministry of National Education (2010) states that Early Childhood Education (PAUD) is a coaching efforts aimed at children from birth to age six years through the provision of educational stimuli to foster physical and spiritual growth and development in order for the child to have readiness in entering further education. At the age of 4-5 years, the child enjoys doing all sorts of self-exploration, ranging from cognitive, motor, language, art and emotional social. According Sugianto (2001) children aged 4-5 years are at the stage of playing symbolic / Make Believe Play. Children have a tendency to ask and answer and have begun to be able to use various objects as the embodiment of other objects. For example using a broom

as a piggyback. The accuracy in choosing and using learning methods will affect the learning outcomes of children. Therefore, every teacher should be able to choose the appropriate learning method with child development and which is fun for the child and can stimulate children to be actively active in learning activities that are done in accordance with the stage of child development. Based on observations and interviews of teachers conducted in January 2017 at TKIT Bina Insan Cendekia Kota Pasuruan obtained data that in TKIT Bina Insan Cendekia Pasuruan City has never done games or activities outside the room used to stimulate cognitive development as well as the development of rough motor child. For activities that stimulate cognitive development, teachers often do questioning, guessing and also fill out worksheets. Based on observations made

by researchers in January 2017, the cognitive development of children in TKIT Bina Insan Cendekia Kota Pasuruan on ABCD-ABCD pattern recognition activities, matching the number of pictures with the appropriate number, as many as 89 children from 128 children, still difficult to do. And for the physical motor development, especially the rough motor physical development in walking with one foot, walking on the board and jumping over the obstacle, as many as 79 children from 128 children still have difficulty doing well. From some of these cognitive and physical motor activities, the child still needs a lot of help and guidance from the teacher.

One effort that can be done in order to stimulate the cognitive and physical development of motor of the aged child in TKIT Bina Insan Cendekia is by using the method of play. The types of self-playing in the game are mixed, but games that contain elements can stimulate cognitive and physical motor development simultaneously are circuit games. This circuit game can be used as a stimulus to improve the physical development of motoric early childhood. Can be proved from previous research conducted by Permatasari (2016). In his research it was found that playing by using circuit games can improve the physical development of motoric early childhood. For emotional social development, it can be proved in research conducted by Prawesti (2014). In research conducted, states that playing games menggunakan not only can improve aspects of physical motor development, but can improve the social aspects of emotional as well. As for cognitive development, can be proven from research conducted by Rahma (2014). In the research, it is proven that circuit play can improve the development of cognitive. In terms of several research studies, it can be concluded that, circuit games can develop all aspects of child

development in accordance with the purpose of the play and play process.

The objective of the research can be to examine the effect of a cheerful adventure circuit game on the child's cognitive development and to test a cheerful adventure circuit game on the child's gross motor development. In this research, the design used is pretest posttest Equivalent Group Design, that is experiment and control group before experiment will be done pretest, either to experiment class group and to control class group. In this study, cheerful adventure circuit play activities provide opportunities for children to move actively by playing as the main activity of the child. so that cognitive development can be optimally stimulated through the game. Vygotsky (in Yulianti 2010: 17) suggests that there is a strong relationship between cognitive development and the development of children's play. The game has a direct role in the child's cognitive development through symbols that are an important part of children's developmental thinking. Diana (2005: 2) also states that cognitive processes occur naturally when the child is playing. Children discover, test, and apply the concept of cognition naturally almost every day in various things that are done while playing. A cheerful adventure circuit game is a game that spurs the child to move regularly, all the muscles move, the body organ works well in accordance with its function. Basic motion skills performed by children on cheerful adventure circuit games such as, jumping, walking, running will be stimulated through this game. these basic movements are crucial to the daily activities of the child, making the child active and the child can interact with his friends as a stimulus of his emotional social development during the game.

## 2. METHOD

The type of research used is quantitative. In this research, the method used is experiment. Sukardi (2008: 190) states that experimental research has 3 important characteristics that always accompany it, namely the existence of planned manipulation, control of variables and observation of experiments. The research used is quantitative descriptive with the aim to see the influence of the game of petualngan ceria circuits on the cognitive and motor development of children aged 5-6 years in TKIT Bina Insan Cendekia Pasuruan.

The design used is pretest posttest Equivalent Group Design, ie experiment and control group before experiment will be done pretest, either to group of experiment class or to control group class. After the pretest then the experimental class is given treatment (treatment) that is by learning using the game medium of cheerful adventure circuit, while the control group is not treated the same as the experimental group or follow the standards that apply within the school. And after the treatment (treatment) to the experimental group and then re-examined the eyes pelajakegiatan ran that has been submitted during the experiment implementation period.

The data that have been obtained through measurements that have been done on pretest and postes are then processed using parametric inferential statistical techniques. Statistics inferential parametrik interpreted as a technique of data analysis by testing the research hypothesis proposed by researchers and built from the study theory and has certain requirements on the data to be analyzed that is the distribution of population data based on the normal distribution approach and the second homogeny population (Susetyo, 2010: 138).

Test the influence or effectiveness of cheerful adventure circuit game media on the cognitive and motor development of children aged 5-6 years by doing

comparison of the writing result between the control class and the experimental class. The technique used to analyze the research data is statistical description with t test. To be more accurate, then this data analysis using computer program that is SPSS. T-Test average test The average test theory of T-Test is a theory in statistics used to test whether a particular value (given as a comparison) differs significantly or not with the mean of a sample. To test the average difference with T-Test, the data used is quantitative data. The t test used is paired test of t-test sample which aims to know the difference of average of two related or pairs sample (Paired Sample T - Test).

## 3. RESULT AND DISCUSSION

Research activities begin with early observation of children's cognitive and motor abilities. Initial observations made in this study were observed both groups, namely the control group and the experimental group. The purpose of early observation is to know the level of cognitive abilities and gross motorcycles of children performed with the techniques of observation and documentation of the learning activities of children before treatment is given.

After the initial observations are completed, the next step is the implementation of the treatment to be administered. At this stage, only the experimental group treated by the researcher. The cheerful adventure circuit game is given 4 times per week for 2 weeks, so overall there are 8 treatments given to the experimental group in a cheerful adventure circuit game. Duration of game in 1 day is 2 hours for all experiment group. While the control group follow the usual learning activities regularly in accordance with the schedule set by the teacher.

The next step taken is the final observation. The process of conducting the final observation is carried out with the same activities as in the initial

observation, ie the observation activity of cognitive abilities and gross motor of children. This final observation was conducted on the control group and experimental group. The purpose of this final observation is to know the cognitive and motor abilities of the child after being given a treatment in the experimental group or control group. Then the results of preliminary observations and final observational results were compared with the objective of knowing whether or not there were differences in observations from untreated control groups and experimental groups treated. Based on the data obtained from the initial and final observations, the researchers compared the two observation to test the hypothesis.

The results of the application of cheerful adventure circuit games can be seen through the comparison table of the group average on cognitive development variables at the beginning and end observation. The average comparison of the control and experimental groups in this study is as follows:

**Table Comparison of initial observational star acquisition and final observation in the control group and cognitive development experiments**

Class/ Group	Observation Beginning	Final Observation	Increase
Experiment Group	8.53	18.13	9.6
Control group	8.67	13.30	4.63

Based on the above table, it can be concluded that the average value of cognitive development experimental group at the time of initial observation

Based on the data that has been presented, the average increase of the group on the preliminary observation and experimental group observation is greater than the control group, ie  $9.6 > 4.63$ . This is because the experimental group received treatment in the form of a cheerful adventure circuit game designed

to stimulate the child's cognitive development.

In this study, cheerful adventure circuit play activities provide opportunities for children to move actively by playing as the main activity of the child. So that cognitive development can be optimally stimulated through the game. Vygotsky (in Yulianti 2010: 17) finds that there is a strong connection between cognitive development and the development of children's play. The game has a direct role in cognitive development of children through symbols that are an important part in the development of child thinking. Diana (2005: 2) also states that cognitive processes occur naturally when the child is playing. Children discover, test, and apply the concept of cognition naturally almost every day in various things that are done while playing.

The result of the application of a cheerful adventure circuit game can be seen through the table of comparison of group averages on rough motor development variables at the beginning and end observation. The average comparison of the control and experimental groups in this study is as follows:

**Table Comparison of initial observation of star observation and final observation in control group and rough motor development experiment**

Class/ Group	Observation Beginning	Final Observation	Increase
Experiment Group	9.43	18.97	9.54
Control group	9.40	14.00	4.6

Based on the above table, it can be concluded that the average value of the experimental group of gross motor development during the initial observation of 9.43 and the average final observation of 18.97. In the experimental group, the average increase in the initial observation to the end was 9.54.

The mean value of the gross motor development control group during the initial observation was 9.40 and the mean final observation was 14.00. In the control group, the average increase in the initial observation to the end was 4.6.

Based on the data that has been presented, the average increase of the group on the preliminary observation and experimental group observation is greater than the control group, which is  $9.54 > 4.6$ . This is because the experimental group received treatment in the form of a cheerful adventure circuit game designed to stimulate children's gross motor development.

The importance of making the program planned and structured in the development of motor skills rambunctious children can be applied in game activities circuitry adventure cheerful form of jumping in with both feet, walking on one foot, walk balanced on the plank to carry the burden of running zig-zag and move the board with both hand. It can be used in stimuli to develop children's abusive motor abilities. it is in accordance with Payne & Issac's statement (2002), stated by Payne & Issac (2002) which states that "children do not acquire these skills as a result of the maturation process, but rather through instructions and practice".

#### 4. CONCLUSION

Based on the discussion of research results in accordance with the formulation of the problem and the expected objectives in the study, it can be concluded that: A. The use of cheerful adventure circuit games significantly influences the child's cognitive development. This is indicated by the significant difference of cognitive development between the control group and the experimental group, ie the cognitive development in the experimental group is better than the control group of the mean value and the resulting significance level is  $0.273$  ( $\text{sig} >$

$0.05$ ). B. The use of cheerful adventure circuit games significantly influences the child's gross motor development. This is indicated by the significant differences in motor gross development between the control group and the experimental group, ie gross motor development in the experimental group is better than the control group, from the mean and the significance level is  $0.922$  ( $\text{sig} > 0,05$ ) .

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