

# Differences in Effectiveness of Clogs and Captive Path Games to Improve Gross Motor Skills in Children 4-5 Years

Ruth Eka Mudji Setiawaty<sup>1\*</sup>, Eko Darminto<sup>1</sup>, Miftakhul Jannah<sup>1</sup>

<sup>1</sup>Postgraduate of State University of Surabaya, Surabaya, Indonesia

ruth.17070855085@mhs.unesa.ac.id

\*Corresponding Author

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*Clogs game;*

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## ABSTRACT

This study aims to determine (1) Effective Clogs game to improve gross motor skills of children aged 4-5 years. (2) Captive Path game is effective in increasing the gross motor skills of children aged 4-5 years (3) There is a difference in the effectiveness of the game of Clogs and Captive Path increases the gross motor abilities of children aged 4-5 years. This research uses a quantitative research design. The analysis of the results of the study was carried out using the parametric statistical approach, which required a normality test, a homogeneity test, and to determine differences in the hypothesis, a T-test was performed on the N-gain score. The results showed that: (1) based on the normality test, the values for pre-test and post-test were greater than 0.05, so the clogs had normal distribution data. Homogeneity test results in pre-test and post-test values greater than 0.05, so clogs have homogeneous data. (2) based on the normality test, the values for the pre-test and post-test are greater than 0.05, then the captive path game has normally distributed data. (3) Based on the T-test on the N-gain Score, the sig value <0.05 for clogs games concluded that clogs games effectively improve the gross motor skills of children aged 4-5 years while for captive path game produces sig values > 0.05 concluded that the game of captivity ineffective in increasing gross motor skills of children aged 4-5 years.

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## 1. INTRODUCTION

Early childhood learning is oriented to laying fundamentals or bases towards the growth and development of physical, language, cognitive, social-emotional, artistic, moral values and all other intelligences (plural intelligences). Children aged 4-6 years are categorized as early childhood and are also referred to as preschool children. Institutions that organize early childhood education must be able to accommodate all aspects of child development in a pleasant atmosphere so as to generate interest and the child is interested in doing the learning by itself. The learning process that takes place is interesting, involves students and is carried out vigorously will have a significant influence on children's learning efforts. Educators must design and implement learning activities as effectively and efficiently as possible in order to bring maximum results. For children, play is their world and has a very important role. Some psychologists write their

opinions that play activities can be a means to optimize early childhood development. According to Pica (2011: 58) space outside the classroom must be used for play activities that enhance physical motor skills and other abilities as well as children's emotional, creativity, and cognitive abilities. Games as a method of learning can be done so that children are trained in motor skills. Likewise cognitive and social abilities will also develop in tandem. Opportunity to play and learn outdoors is important for the development of a healthy child as a whole (Frost, 2017: 82). In short, a pleasant game will affect the physical growth and development of the soul later.

Early childhood educators play an important role in providing opportunities for children to do activities outside the classroom as part of daily learning (Wirth, 2012: 43). Broad knowledge is needed for educators to continue to explore their abilities in choosing games that are creative, innovative, right on target, full of meaning

and must remain enjoyable. This is a big problem for educators.

Gross motor development is very important for early childhood. The presumption that gross motor skills will develop automatically with increasing age is false. Gross motor development in early childhood requires help from educators. How gross physical motor activities that please children, the types of games that are appropriate to the level of their age development, and how the games are done that can motivate children is something that should be prepared by an educator.

Each learning activity should have a positive impact on children's development so that the weaknesses that arise can be anticipated. Learning given in a game should be conducive to the formation of attitudes, positive and creative ways of thinking in order to shape the soul of leadership and social skills. These skills are the ability to overcome all problems that arise as a result of interactions with the social environment and the ability to present themselves in accordance with applicable rules and norms. In this case the educator must be able to choose a game that has the ability to stimulate a child's motor development.

Mutiah (2010: 91) believes that play is a very important activity for children's growth and development. The experience of playing and studying outdoors in urban areas is not prioritized by adults, causing disruption to the optimal locomotor ability of children (Sisson, 2017: 8). The method of learning with clogs and captive path game is an activity with physical activity that is fun, grouped, and has an enormous impact on early childhood growth and development. The level of difficulty that exists in the game is very possible to do observation and evaluation activities on children's motor skills. From the description above, a study with the title "Differences in Effectiveness of Clogs and Captive Path Games to Improve the Gross Motor Ability of Children 4-5 Years".

Starting from the background of the above problems, a number of problems can be formulated as follows: (1) Are clogging games effective in increasing the gross motor skills of children aged 4-5 years? (2) Are prisoner paths game effective in increasing the gross motor skills of children aged 4-5 years? (3) Are there differences in the effectiveness of clogs and prisoner paths game to improve the gross motor skills of children aged 4-5 years?.

## 2. METHODS

This research is quantitative research. by using the experimental method in the control and experimental groups. This study provides treatment for subjects or a group of subjects whose aim is to find out whether there is a difference in effectiveness of the treatment that has been given to the variable. This research is the independent variable clogs game (X1) and captive path game (X2), while the dependent variable is gross motor

ability (Y). The population in this study were all children aged 4-5 years at TK Lintang and Taman Sari, Surabaya. The sample to be taken was divided into two classes, namely the experimental class and the control class, which amounted to 42 children

The instruments used in this study were the grating of the development instrument, the development rubric, and the observation guidelines. The starting point of the preparation of the instrument lattice is to determine the indicators taken from the Standard of Child Development Achievement Levels listed in the 2013 curriculum. observations that will be used for data collection in this study.

The research data were analyzed using the parametric statistical approach, the T-test. To calculate numerical data using parametric statistics, it is necessary to test the assumptions first as requirements for normality and homogeneity. Next to find out the difference in effectiveness, an N-gain test is performed.

## 3. RESULTS AND DISCUSSION

The normality test results using the Kolmogorov Smirnov formula of clogs on the initial observation of the experimental group 0.094, the final observation of 0.073. The initial observation of the control group was 0.200, the final observation was 0.176. All of these values are greater than 0.05 so it can be concluded that clogs have normal distribution data. While the results of the normality test use the Kolmogorov Smirnov formula of captive path game at the initial observation of the experimental group 0.200, the final observation of 0.200. The initial observation of the control group was 0.200 and the final observation was 0.200. All of these values are greater than 0.05 so it can be concluded that the game of captivity has normally distributed data.

		Pre Clog Control	Post Clog Control	Pre Clog Experiment	Post Clog Experiment
N		21	21	21	21
Normal Parameters <sup>a,b</sup>	Mean	17.8571	18.5714	18.1905	24.8095
	Std. Deviation	2.47560	2.15804	2.08852	1.74983
Most Extreme Differences	Absolute	.159	.155	.175	.180
	Positive	.159	.148	.139	.135
	Negative	-.140	-.155	-.175	-.180
Test Statistic		.159	.155	.175	.180
Asymp. Sig. (2-tailed)		.176 <sup>c</sup>	.200 <sup>c,d</sup>	.094 <sup>c</sup>	.073 <sup>c</sup>
a. Test distribution is Normal.					
b. Calculated from data.					
c. Lilliefors Significance Correction.					
d. This is a lower bound of the true significance.					

		Pre Captive Path Control	Post Captive Path Control	Pre Captive Path Experiment	Post Captive Path Experiment
N		21	21	21	21
Normal Parameters <sup>a,b</sup>	Mean	17.7619	18.2381	17.8095	19.5238
	Std. Deviation	2.54764	2.71854	2.46209	2.61952
Most Extreme Differences	Absolute	.143	.121	.105	.118
	Positive	.136	.121	.105	.118
	Negative	-.143	-.107	-.099	-.113
Test Statistic		.143	.121	.105	.118
Asymp. Sig. (2-tailed)		.200 <sup>c,d</sup>	.200 <sup>c,d</sup>	.200 <sup>c,d</sup>	.200 <sup>c,d</sup>
a. Test distribution is Normal.					
b. Calculated from data.					
c. Lilliefors Significance Correction.					
d. This is a lower bound of the true significance.					

Homogeneity test on the game of clogs for pre-test resulted in a value of 0.316 and post-test of 0.227. Based on the established criteria, the value is greater than the 0.05 significance so that the data from clogs in this study are homogeneous. Whereas the homogeneity test results in the captive path game for pre-test amounted to 0.697 and post-test amounted to 0.930. Based on predetermined criteria, the value is greater than the significance of 0.05 so that the game of captive path in this study is homogeneous.

		Levene Statistic	df1	df2	Sig.
pre Clog game	Based on Mean	1.030	1	40	.316
	Based on Median	.572	1	40	.454
	Based on Median and with adjusted df	.572	1	39.408	.454
	Based on trimmed mean	1.029	1	40	.316
post Clog game	Based on Mean	1.458	1	40	.234
	Based on Median	1.210	1	40	.278
	Based on Median and with adjusted df	1.210	1	37.820	.278
	Based on trimmed mean	1.506	1	40	.227

		Levene Statistic	df1	df2	Sig.
pre captive path game	Based on Mean	.177	1	40	.676
	Based on Median	.118	1	40	.733
	Based on Median and with adjusted df	.118	1	39.911	.733
	Based on trimmed mean	.153	1	40	.697
Post captive path game	Based on Mean	.007	1	40	.932
	Based on Median	.011	1	40	.916
	Based on Median and with adjusted df	.011	1	39.963	.916
	Based on trimmed mean	.008	1	40	.930

**Group Statistics**

	group	N	Mean	Std. Deviation	Std. Error Mean
N-Gain persen	Clog game	21	69.2179	11.76065	2.56638
	Captive Path game	21	18.1071	8.12323	1.77263

**N-gain effectiveness category according to Arikunto (2010)**

Percentage (%)	Interpretation
< 40	Ineffective
40 – 55	Less Effective
56 – 75	Effective Enough
> 76	Effective

The first hypothesis test obtained by the T-test results known sig (2-tailed) value of 0,000 <0.05, then as a basis for decision making in the T-test it was concluded that H0 is rejected and accept Ha which means that clogs are effective for increasing the gross motor skills of children 4-5 years. The second hypothesis test obtained sig (2-tailed) value of 0.126 > 0.05, then as a basis for decision making in the t test it was concluded that Ha is rejected and accepts H0 which means that captive path game is ineffective in improving the gross motor skills of children aged 4-5 years . This N-gain test is performed to calculate the categorization of the effectiveness of clogs and captive path game to improve the gross motor skills of children aged 4-5 years. The calculation result of the average N-gain score of clogs shows a value of 69.2179% which is included in the category of quite effective (56-76%) according to the interpretation of the effectiveness of the gain index according to Arikunto so that it can be said that clogs are effective enough to improve children's gross motor skills age 4-5 years. As for the results of the calculation of the average N-gain score of captive road games showed a value of 18,1071% which is included in the ineffective category (<40%) according to the interpretation of the effectiveness of the gain index according to Arikunto so that it can be said that captive path game is not effective to improve the ability gross motor skills of children aged 4-5 years.

**4. CONCLUSION**

It was found the effectiveness of clogs in improving gross motor skills of children aged 4-5 years in Tegalsari sub-district, Surabaya. Clogs have a high enough effectiveness based on data that has been carried out according to research procedures. T-test results of captive path game showed no effectiveness in improving the gross motor skills of children aged 4-5 years in Tegalsari

sub-district, Surabaya. There is a difference in effectiveness between clogs and captive path game in improving gross motor skills of children aged 4-5 years in Tegalsari sub-district of Surabaya, where clogs are more effective than captive path game.

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