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The Effect of Gobak Sodor and Engklek Games on Rude Motor Development and Cognitive Improvement in Class 4 Children SDN Pojok 1 Kediri

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ABSTRACT

During childhood development of gross motor skills and cognitive runs optimally, it requires education that can provide stimulation and service to aspects of these developments, one of which is by stimulating traditional games of Sodor and Krlek carts. The purpose of this study was to determine the effect of sodor and crankshaft games on gross motor development and cognitive improvement in 4th grade children at SDN 1 Corner 1 Kediri. The research design uses True Experimental Design. The population of this study were all 4th grade students at SDN Pojok 1 Kota Kediri as many as 38 students. With a sample of 24 students with simple random sampling. The independent variable is sodor and crankshaft and gross and cognitive motor dependent variable. The instrument uses the Test of Gross Motor Development (TGMD), analyzed using Anova test. Research result. The results of the study by testing the kruskal wall obtained sig. 0,000 which means that there is a significant increase between independent and dependent variables and from the results of Mann Whitney test results obtained are 0.001 in the Sodor and Krlek group, while the Sodor cart provides the highest motor increase. Giving counseling to parents about the importance of stimulation in childhood can improve the child's development process optimally.

Keywords: Gobak sodor, engklek, rugged motoric, cognitive

INTRODUCTION

In the current era of globalization, the sophistication of technological results seems to be the main solution for parents in facilitating children to fill children's activities. Parents give more opportunities to play at home with various results facilities such as playstation technology, computers, television, etc. With the existing technological facilities, children will love to sit and enjoy the facilities without caring for others. This will cause children's activities to decrease, thus causing gross motoric development to slow down (Riyanto, 2017).

In childhood, gross motor skills develop in line with the development of children's cognitive abilities. Coarse motorism is physical movement that requires balance and coordination between limbs using large muscles, part or all of the body (Novianti, 2015). Gross motor development is influenced by basic motion stimulation factors from parents, environment and physical condition of the child (Rahyubi, 2012).

Cognitive development occurs through a process called adaptation. Cognitive factors have an important role for the success of children's learning, because most activities in learning are always associated with problems remembering thinking. Both of these are activities that need to be developed (Desvarosa, 2015).

From this information, to stimulate gross motor and cognitive abilities in children can be by giving traditional games. The game is a form of activity that has a standard and free regulation, both regarding the rules of the game, the tools used and the duration of the game (Lubaba, 2013). One of the traditional games is sodor and krlek carts.

The game of Sodor Sodor is a traditional game in which there are many activities that can develop gross motor skills of children (Lubaba, 2013). The regular sodor game is played by elementary school

children (Prana, 2010). This traditional game of sodor is quite attractive for kids but very fun. Traditional games of Sodor Sodor have advantages and disadvantages. As for the advantages of gobak sodor games, the costs required are light because the equipment used is traditional. This sodor game can also develop a child's gross motor skills, because in this game many basic movements are carried out by children such as running and jumping. Even traditional gobak sodor games can also develop social intelligence. While the drawback is that this game requires extensive land, it must find a place outside that allows for the game to play the sodor (Erdiana, 2016).

Another traditional game is the crank game. Engklek is one game that can help develop children's cognitive. From the preliminary research data, it has been observed that there are some students from 4th grade students who have less gross motor skills. It is known from the lack of agility in the activity, the ability to balance the body is not balanced. Even though daily activities require activity, agility, a good balance, especially in the growth of children.

Looking at the background of the problem, the problems that will be examined are the Effect of Sodor and Englick Game on Rough Motoric Enhancement and Cognitive Ability of Children in Grade 4 Elementary School Students.

METHOD

The research design uses True Experimental Design. The population of this study were all 4th grade students at SDN Pojok 1 Kota Kediri as many as 38 students. With a sample of 24 students with simple random sampling. The independent variable is sodor and crankshaft and gross and cognitive motor dependent variable. The instrument uses the Test of Gross Motor Development (TGMD), analyzed using Anova test.

RESULTS

a. **Descriptive Analysis**

Table 1: Average Of Rude And Cognitive Motor Development In Gobak Sodor

Gobak Sodor	Rough motoric	Cognitive
Pre	8,63	71,25
Post	11,88	83,75
Peningkatan	3,25	12,50

From the table can show in the sodor group, the mean gross motoric score was 8.63 and pre cognitive 71.25. After getting the evaluation, the results of 11.88 and cognitive were 83.75. From the data obtained it was obtained at 3.25 gross motoric and cognitive at 12.50.

Table 2: Average Of Rude And Cognitive Motor Development In Engineering

Gobak Sodor	Rough motoric	Cognitive
Pre	8,25	75,00
Post	10,13	80,63
Peningkatan	1,88	5,63

From the table can show in the crank group, the average gross pre motorbike score was 8.25 and pre cognitive 75.00. After getting the treatment, the results of 10.13 and cognitive were 80.63. From these data, it was found that there was an increase in gross motor skills of 1.88 and cognitive as much as 5.63.

Table 3: Average Of Rude And Cognitive Motor Development In Control Groups

Gobak Sodor	Motorik Kasar	Kognitif
Pre	8,88	73,13
Post	9,13	74,13
Peningkatan	0,25	1,00

From the table can show in the control group, it was found that the average pre motoric score was 8.88 and pre cognitive 73.13. After getting the treatment, the results of 9.13 and cognitive were 74.13.

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From these data, it was found that there was an increase in gross motor skills of 0.25 and cognitive by 1.00..

Table 4: Normality test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Rude Motor In Gobak Sodor						
Pre Rude Motor	,281	8	,062	,809	8	,036
Post Rude Motor	,250	8	,150	,849	8	,093
Cognitive On Gobak Sodor						
Pre cognitive	,301	8	,031	,782	8	,018
Post cognitive	,224	8	,200*	,884	8	,204
Rude Motor In Engklek						
Pre Rude Motor	,301	8	,031	,782	8	,018
Post Rude Motor	,391	8	,001	,641	8	,000
Cognitive On Engklek						
Pre cognitive	,250	8	,150	,849	8	,093
Post cognitive	,319	8	,016	,766	8	,012

From the table can show the results of the normality test provide information that the significant value generated is greater than sig value 0.05.

Table 5: Test Wilcoxon

	Gobak Sodor	
Group	uji statistik	Significance Value (Sig)
cognitive	Uji Wilcoxon	0,01
Rude Motor	Uji Wilcoxon	0,01
	Engklek	
Rude Motor	Uji Wilcoxon	0,01
cognitive	Uji Wilcoxon	0,01
	Control	
Rude Motor	Uji wilcoxon	0,086
cognitive	Uji wilcoxon	0,17

From the table can show significance value of 0.01. This value is smaller than 0.05 so the conclusion that can be taken is that there is a significant influence on the type of game on gross and cognitive motor skills.

Table 6: Test Of Kruskal Rude And Cognitive Motor Wall Between Groups

	Motor Increase	Cognitive Enhancement
Kruskal-Wallis H	19,975	18,700
Df	2	2
Asymp. Sig.	,000	,000

From the table can show significance values for gross motor improvement and cognitive improvement were respectively 0,000. This value is smaller than 0.005 so that the conclusions that can be taken are that there are significant differences in gross motor improvement and cognitive enhancement between groups. To find out where the differences are, the statistical tests are continued to the Mann Whitney test both for gross motoric and for cognitive

Table 7: Test Of Inter Group Group Mann Whitney Motorcycle

Group	Gobaksodor	Engklek	control
Gobaksodor	-	0,001	0,000
Engklek	0,001	-	0,001
control	0,000	0,001	-

From the table can show the results of the Mann Whitney motoric test provide information that the significance value in all groups is smaller than 0.005. In the comparison between the group of sodor and crankshaft, a significant value of 0.001 was obtained. This value gives the meaning that there is a significant difference between the increase in gross motor skills given by playing the game with the given crank game. And the gobak sodor game is a game that provides the highest motor improvement compared to other groups.

Table 7: Test Mann Whitney Cognitive Between Groups

Group	Gobaksodor	Engklek	control
Gobaksodor	-	0,001	0,001
Engklek	0,001	-	0,004
control	0,000	0,004	-

From the table can show the results of the cognitive whitey test provide information that the significant values in all groups are smaller than 0.05. In the comparison between the sodor and the crankshaft groups, significant values were 0.001. This value implies that there is a significant difference between the cognitive enhancement of children given the game of playing with the given crank play. And the gobak sodor game is a game that provides the greatest cognitive enhancement compared to other groups.

DISCUSSION

a. **Effect of Gobak Sodor's Game on Rough Motoric**

The results of the research conducted to determine the effect of playing the sodor game on gross motor development by using the Wilcoxon test showed a significance value of $p = 0.01$ ($p < 0.05$), meaning that the game of gobak sodor had an influence on gross motor development.

This study got the results of $p = 0.01$, which means that there is an effect of giving the sobor between the treatment before and after treatment because the value of $p < 0.05$ means that the influence of gross motor development on 4th grade elementary school students after giving sobor games.

These results are supported by Prastiwi's (2016) research which proves that the game of gobak sodor can improve gross motor development. The population of this study were TKIT Salsabila 5 Purworejo students, totaling 32 students.

Another supportive study is Lubaba (2016). This study uses Research and Development design. This type of research uses one group pretest-posttest design. The subjects used for the limited trials were conducted at Al Hikma Jugo Kindergarten with 20 children and a wider trial in this study were group B children, amounting to 23 children in Muslimat Rahayu Miru Kindergarten and 16 children in Muslimat Bunga Harapan Kindergarten. The technique of collecting data uses observation, interviews and documentation. Based on the results of data analysis on gross motor skills before and after treatment using modified modest sodor games obtained the average value of the results before treatment 11.3 and the average results after treatment 16.2. The results of calculations with the level test are obtained t count <t table (0 <30). So Ha is accepted and Ho is rejected. The conclusions of this study indicate that the sodo gobak game is effective in improving the gross motor skills of group B age children in kindergarten.

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Another study was Iswantiningtyas (2015), which in its research used the application of the game sodor to improve gross motor skills. In this study it was concluded that the application of playing games in learning can improve the gross motor skills of early childhood.
The results of the research carried out on 4th grade students at SDN Pojok I were the giving of gobak sodor games which had an influence on gross motoric development. In theory the game of gobak sodor can develop gross motoric because in this game many basic movements are carried out by the child such as running and jumping using the large muscles of the limbs. Besides that, the gobak sodor game provides benefits such as training in agility, exercising accuracy, developing basic motion skills, running, increasing agility and agility.

b. **The Influence of the Engkek Game on Rough Motoric Development**

The results of the research conducted to determine the effect of crank play on gross motor development by using the Wilcoxon test obtained a significance value of $p = 0.01$ ($p < 0.05$), meaning that giving crank games had an influence on gross motor development.
This study got the results of $p = 0.01$, which means that there was an influence of cranking between before treatment and after treatment because the value of $p < 0.05$, which means that the influence of gross motoric development on 4th grade elementary school students after giving a crank game.
These results support Prastiwi's (2016) research which proves that there is a significant increase in the gross motoric abilities of students before and after taking traditional learning from the traditional kris game. The research conducted was experimental research.
Another study is Perwitasari (2016) research which says that one of the media that can stimulate gross motoric development is traditional crank game. In his research using a different effect test with the Mann Whitney test obtained p-value 0,000. The conclusion is that there is the influence of traditional crank games on the gross motor development of children.
According to Oedjo (2016) that traditional kris games are effective in improving gross motor skills of early childhood. The data collection technique in this study uses observations and tests.
While the research conducted obtained results that there was an effect of gross motor development on 4th grade elementary school students after giving crank games. Crunch games can improve gross motoric because the elements of movement in the crank game are able to train the body's balance through standing on one leg, training agility and training eye and hand coordination through throwing objects. Where all these elements are components that are present in gross motor.

c. Effect of Gobak Sodor's Game on Cognitive Enhancement

Test results obtained a significance value of $p = 0.01$ ($p < 0.05$), meaning that the gift of the game sodor has an on cognitive influence development.
This is the result of $p = 0.01$, which means that there is an effect of giving the treatment before and after treatment because the value of $p < 0.05$, which means that the cognitive development on 4th grade students after giving the sodor game.
Based on theory, cognitive development occurs through adaptation by analyzing, comparing, sorting and evaluating. In the multipart component, what happens is analyzing, comparing, sorting and evaluating. This is always done, a child's cognitive abilities will develop.
This research was supported by Research of Judges (2017), which was significant (p) < 0.05 then H0 was rejected. This means that the gobag sodor game effectively improves outcomes of fourth grade social studies learning students. This is increased by 11.63. From the use of traditional gobag sodor games in social studies learning in understanding the understanding of the material being studied.
Another study that supports people is Erdiana (2016) who says that traditional gobod sodor games can also develop intelligence. Cognitive is part of children's intelligence. So the gobod sodor game also has an influence on increasing cognitive abilities in children.
Gustiana (2011) research states that the value of empirical validity shows that the modified learning model has a significant influence on gross and cognitive motor skills in early childhood. Thus, learning with modified games can be considered an alternative learning for children.

d. Englek Game Against Cognitive Enhancement

The results of the research conducted to determine the effect of crank play on cognitive development by using the Wilcoxon test obtained a significance value of p = 0.01 (p <0.05), meaning that giving crank games had an influence on cognitive development.

This study got the results of p = 0.01, which means that there is an influence of giving cranial permissions between before treatment and after treatment because the value of p <0.05, which means that the influence of cognitive development on 4th grade students after elementary school games.

These results support the Desvarosa (2016) study which proves that crunch games can increase the ability to be cognitive.

Another study that supports this research is the study of Tari (2018). The results of the study indicate an increase seen from the observation sheet and graph. Conclusions This research and development is that the development of traditional kris games can improve cognitive abilities in the group children playing Raudlatul Ulum Watrsumpak, Trowulan.

Another study that examined this was Sugiarti (2017) The population of this study were children aged 4-5 years at TK Tunas Harapan Plandaan Jombang with a sample of 22 children in group A. The technique of collecting data used observation and performance tests. The data analysis technique of this study uses the Wilcoxon Matched Pairs Test with the Thitung formula <Ttabel. If thitung is smaller than T table, then Ho is rejected and Ha is accepted. Based on the results of data analysis, it was obtained Thitung = 0 and T table for N = 22 with a significance level of 5% of 66, then (0 <66). The data shows Ho rejected and Ha accepted. So it can be concluded that the modified crank game influences cognitive ability to recognize the symbol of group A number TK Tunas Harapan Plandaan Jombang.

In the study conducted in 4th grade elementary school students at SDN Pojok I Kediri that there is an influence of cognitive development on 4th grade elementary school students after giving the crank game. Clinging is one game that can help in developing children's cognitive. In the crank game, players must think about the concept or strategy to be able to pass each stage of the crunch game. Among them is throwing the jam in accordance with the appropriate stages. In throwing gacuk it must use concentration, think and proceed by jumping over each box in the crank game. If this is done then it will hone the mind's power of the child, with the thought power there will be cognitive development in the child.

e. Differences in the Effect of Gobak Sodor and Engk on Rough Motor Development and Cognitive Enhancement

The results of the study were conducted to determine the differences in the effect of sodor and crankshaft games on gross motor development and cognitive cognitive abilities using the Mann Whitney test which found a significance value of p = 0.001 (p <0.05), meaning that the game of sodor and cranks played a difference towards gross motor development and cognitive abilities.

This study obtained results p = 0.001, which means there is a difference in the effect of giving sodor games with cranks because the value of p <0.05 means that there are differences in the influence of gross and cognitive motor development on 4th grade students after giving sodor games with cranks.

The research that supports this is Prastiwi's (2016) study, in his study conducted at TKIT Salsabila 5 Purworejo children a significance value (2-tailed) of 0.405. Sig> α (0.405> 0.05), it can be concluded that there is no difference in the significant increase between those treated with cranks and those treated by the sodor, but based on the results of the pre-test and post-test, the increase in gross motor skills of the sodor group higher than the crankshaft group's gross motor skills.

Another supportive study is according to Hakim (2017) where in his study it was concluded that gobak sodor shows better results than the other experimental groups in the use of traditional games as understanding cognitive abilities.

Another research that supports this is according to Iswatiningsih dan Wijaya (2015) who stated that the application of gobak sodor games provides a better influence on learning that can improve gross

motor skills early childhood. The gross motoric development of children has benefits for the development of other children.

The results of the research carried out on 4th grade students in SDN Corner I were found to have a higher score on sodor playing games on gross motor skills and cognitive abilities compared to cranks. This is because in the game the whole body gesture that involves a large body muscles. Besides that, in the game gobak sodor gives more benefits to sharpen the ability to find the right strategy, train the accuracy of the child in solving a problem and train a sportsmanship in a team that if realized then there will be an increase in children's cognitive abilities.

CONCLUSION

Based on the results of research and discussion, it can be concluded as follows:

a. There is gross motor development before and after being given a game of sodor in grade 4 elementary school students.
b. There is gross motor development before and after being given a crank game to 4th grade students.
c. There were cognitive developments before and after being given the game of playing with sodor to 4th grade students.
d. There was cognitive development before and after the crank game was given to 4th grade students.
e. In the control group for gross motor development and cognitive ability in 4th grade children.
f. There is the influence of playing the sodor on gross motor development in 4th grade children where $p = 0.01$ ($p < 0.05$).
g. There is the influence of crank play on gross motor development in 4th grade elementary school children where $p = 0.01$ ($p < 0.05$).
h. There is the influence of the sodor game on cognitive enhancement of 4th grade students where $p = 0.01$ ($p < 0.05$).
i. There is the influence of crank play on cognitive enhancement of 4th grade elementary school children where $p = 0.01$ ($p < 0.05$).
j. There is a difference in the influence of Sodor and Krlek wagons on gross motor development and cognitive enhancement.

SUGGEST

a. For Research Sites

The agency is expected to use interesting and diverse media in the learning process to improve gross and cognitive motor skills, for example using the game of sodor and crankshaft. As well as giving freedom and the opportunity to make changes to the learning activities during these changes still have a positive impact on gross and cognitive motor development.

a. For Educational Institutions

This research is expected to add to the research treasury, especially in the STIKes Surya Mitra Husada Kediri. As well as being a reference for researchers, the next is about gross and cognitive motor development in children.

b. For further researchers

It is expected to be able to carry out further research related to the influence of sodor and crankshaft games on gross motor development and improvement in children's cognitive abilities. Besides that, his research will not only focus on gross and cognitive motoric, but also conduct research on fine motor improvement and social emotional improvement by giving sodor and crankshaft games.

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