

The Effect of Trapped Ball Games on Children's Basic Movement Abilities at TK Tunas Bangsa PGRI Kedaleman Kulon Kabupaten Kebumen

Meliana Dewi Suryaningsih^{1*}, R Agustinus Arum Eka Nugroho¹

¹Department of Early Childhood Education Department, Faculty of Education and Psychology, Universitas Negeri Semarang, Indonesia

*Correspondence to: melianadewis@students.unnes.ac.id

Abstract: The problem of this research is the lack of development of children's basic motor skills in TK Tunas Bangsa PGRI, Kedaleman Kulon, Kabupaten Kebumen. The aim of this research is to analyze the influence of the Trapped Ball game on children's basic movement abilities at TK Tunas Bangsa PGRI. This study uses a quantitative approach method with an experimental research design (one group pretest posttest design). Data collection through observation and documentation techniques. The data obtained in this study were obtained through primary data and secondary data. Primary data includes direct information with students, principals, class teachers, while secondary data includes supporting documents in the form of photo documentation, notes, video recordings, books, and journals or previous research. The data analysis technique uses a simple linear regression test. The results of the study showed that the trapped ball game had an effect on the basic motor skills of early childhood children. The difference between before and after being given treatment through the trapped ball game showed that the trapped ball game had an effect on the basic motor skills of children in TK Tunas Bangsa PGRI Kedaleman Kulon Kabupaten Kebumen.

Keywords: Trapped ball, Basic Movement, Motor Skill

INTRODUCTION

Education plays a very important role in human life. We can see that every human being has the right to receive education, as stated in the 1945 Constitution (amendment) Article 31 Paragraphs 1 and 2 which contain: (1) Every citizen has the right to receive education; (2) Every citizen is required to attend basic education and the government is required to finance it. Education for children from birth can be achieved through Early Childhood Education (PAUD). As in Law No. 2 of 2003 concerning the National Education System, it states that Early Childhood Education is a development effort carried out for children from birth to the age of six by providing educational stimulation in an effort to help the physical and spiritual growth and development of children so that they are ready to enter further education (Masruroh et al., 2019).

At the age of 4-6 years, children should have started preparing to get an education. Preschool institutions are used to develop all the potential that children have through the stimulation of fun learning activities for children. Institutions that can be taken by children of that age are PAUD (Pendidikan Anak Usia Dini) institutions, such as TK, KB, RA or other equivalent institutions, both formal and non-formal. So, through a fun learning process, children will receive stimulation in all aspects of development according to their age level.

We can see that every child must be stimulated comprehensively in every aspect of their development, because this has a big influence on the child's achievements at the next stage.

As expressed by Sujiono (2008) (in Sholehah, 2018), one of the abilities in early childhood that develops rapidly is physical ability and motor systems.

Every child definitely wants to move freely physically using their limbs (Rahayu & Khsanah,

2013). This is because early childhood movement activities are very dominant, children move in their learning process through games. The games played by children every day tend to involve basic movements. Basic movements are one of the initial stages for children to develop in their psychomotor aspects, therefore mastering basic movements in childhood is one of the most important things. The basic movements that must be possessed by an early childhood child consist of locomotor, non-locomotor and manipulative movements (Muslihin, 2018).

Basic movement skills according to Hadi, et al. (2017) are divided into three parts: first, locomotor movements which are interpreted as movements carried out by moving places (walking, running, jumping, hopping), second, non-locomotor movements, namely movements carried out at one point (bending, turning, swaying, and others), and third, manipulative movements, namely the ability to perform a movement more skillfully (catching, throwing, and kicking). The locomotor movement skills possessed by early childhood are essentially basic things that must be able to be done by early childhood according to their age development U. Y. Utari & Indahwati (2015) (in Widiarti et al., 2021). Locomotor movements can develop if children are skilled in coordinating their body parts, for example when walking, bending, paddling their legs and arms, running, jumping, or twisting to the right and left. Children who have good basic locomotor movement skills can help themselves in displaying good attitudes and skills in solving problems experienced by the child in carrying out daily life.

According to Sumantri (2005) (in Sumantri & Endrawati, 2013), manipulative movement is one of the activities that involves gross motor skills (hands, feet, legs, togog) in using an object and naturally these movements are already owned by every child such as throwing, catching, kicking, stopping objects, pushing, pulling, hitting and so on. Manipulative movement as a basis that must be mastered in physical motor stimulation of early childhood and it is easier to develop gross motor skills, than fine motor skills, because the use of gross muscles is more prominent than the coordination of fine muscles in early childhood.

Many studies have discussed the importance of stimulating basic movements in early childhood so that in the future, all muscle performance can develop well and optimally. To develop these aspects is certainly not easy. As adults (parents or teachers) must prepare anything that can support stimulation basic motor skills of children. Without any supporting preparation, then later the child's development will not be honed optimally. One of the most important things in developing this aspect is by using game media, because children definitely like playing while learning. The reality that often occurs is that many parents and teachers are less aware that through learning and playing activities that involve physical activity can improve children's motor skills.

Playing is the main activity carried out by early childhood every day. All forms of activities that children can do starting from waking up to going back to sleep is basically a play activity. Playing is a way for early childhood to learn to get to know the surrounding environment, both to grow and develop, gain experiences as a foundation for their future, and provide stimulation to all aspects of child development ranging from cognitive, language, physical motor, art, moral-spiritual and social emotional (Padilah et al., 2018). Children will be free to express their opinions, imagine, and choose what to play. Playing has a big influence on the development of early childhood. By playing, children can do various experiments and explore, to hone their abilities.

The researcher chose TK Tunas Bangsa PGRI as the research location because the researcher came from the same environment as the school environment. The researcher has conducted observations to find out the characteristics of students at the school.

Based on observations in the introduction of the study with class teachers of Kindergarten A and Kindergarten B at Tunas Bangsa PGRI Kedaleman Kulon Kindergarten, there are still many children who have not been able to coordinate their large muscles well when playing, especially in children's basic motor skills. This is due to the lack of physical activity in learning activities. Learning media to stimulate children's basic motor skills at Tunas Bangsa PGRI Kedaleman Kulon Kindergarten are still limited, especially with the limited land or yard for children to play.

Considering how important playing is for the development and instilling of character from an early age, researchers designed learning ideas in the form of a game medium in the form of a ball to improve the basic motor skills of early childhood children which were implemented at TK Tunas Bangsa PGRI, Kedaleman Kulon. The researcher called the media "Trapped Ball" because it is one of the developments of ball game media that is often played by children. This game media is played by two people, one as the ball roller, and the other as the ball catcher using a small goal that has been designed in such a way. The ball that is rolled, not thrown, is deliberately chosen by the researcher to be different from the others. So, the game that the researcher modified has novelty.

The research was conducted by modifying the Trapped Ball game, aiming to further improve children's basic motor skills, especially to stimulate children's large muscles, control body movements, and improve, develop and coordinate healthy, strong, skilled, and agile physical motor skills.



Figure 1. Trapped Ball Game

The following are the steps to play the trapped ball game.

1. This game is played by two people taking turns, one as the ball thrower and one as the ball catcher.
2. After making preparations, one child becomes the thrower and one child becomes a ball catcher using a small goal.
3. The game starts by jumping on a rope with a height of 10 cm, then the child takes the ball to throw towards the goal.
4. The position of the ball thrower can be seen in the picture below. The ball is thrown by rolling through the bottom, not by throwing it flying from above. The child can throw the ball three times.
5. The position of the ball catcher can be seen in the picture below. The catcher waits for the ball to arrive so that it goes straight into the goal.
6. If it is their turn, now the child changes position, that is, the child who previously threw the ball now becomes the ball catcher. Vice versa.
7. Then do the activities of throwing and trapping the ball as before.

The advantages of the trapped ball game media are, (1) designed to overcome children's movement problems by doing physical activities that involve children's basic movement abilities, (2) designed using materials that are safe for children, namely using plastic balls, cardboard, cardboard,

spinning wheels, and other supporting materials that are easy to find. So, it can be ensured that children will not be injured when doing this activity, and (3) designed as one of the fun activities for children from learning that is usually indoors. This Trapped Ball game is expected to be able to overcome children's basic movement problems at TK Tunas Bangsa PGRI Kedaleman Kulon. So, teachers can predict what to do in the future for children.

Based on research conducted by Nurito (2022) on the application of cooperative learning in improving basic movement skills in students aged 7-8 years, it shows that most children have not reached the maximum level of basic movement due to minimal opportunities for practice and decreased movement activities causing basic movements to be weak in special movements. This weakness can have a negative impact on children's daily life activities (Fotrousi et al., 2012).

Next, research conducted by Adelianti Derman and Dadan Suryana (Derman & Suryana, 2022) related to children's locomotor skills showed that there was a lack of activities or games that could stimulate children's locomotor skills. Where the activities carried out more develop cognitive aspects, such as writing numbers, connecting and counting pictures. Children are only required to sit in their respective chairs.

Based on the problems, the researcher is interested in conducting a study on the Effect of Trapped Ball Games on Children's Basic Motor Skills. Basic motor activities in schools are rarely carried out, so there are still many children whose basic motor skills are underdeveloped. Activities involving physical activity are usually only carried out on Saturdays, either in the form of gymnastics or just walking a short distance. Children certainly need new and fun things to do, especially in children's basic motor activities. From the preliminary observation activities that have been carried out, the researcher found an idea to create media that is appropriate for the needs, abilities, and characteristics of children. This study was used to determine whether there was an effect of trapped ball games on children's basic motor skills at TK Tunas Bangsa PGRI Kedaleman Kulon, Kebumen Regency

METHODS

This study uses a quantitative approach. The quantitative method approach is a study whose data is numerical or numeric. While the research design used in this study is experimental research. Sugiyono (2011:7) argues that experimental research is one of the studies used to find the effect of certain variables on other variables in strictly controlled conditions. Experimental research is a quantitative research method used to determine whether there is an effect of independent variables (treatment) on dependent variables (results).

A research location is a place where researchers conduct research to obtain information and data needed in the study. This research was conducted at TK Tunas Bangsa PGRI Kedaleman Kulon, Kedaleman Kulon Village RT 04 RW 01, Puring District, Kebumen Regency, Central Java 54383. This research was conducted from August 14 to September 23, 2023.

The data in this study are research instruments and the number of students. While the data sources in this study are two, namely primary data and secondary data. Primary data is data that is generated directly through its sources that are observed and recorded for the first time, namely students, principals, and teachers. While secondary data is data obtained and collected by the researcher himself, photo documentation, notes, video recordings, books, journals or previous research. Data collection techniques in this study are observation and documentation. Data collection

techniques are carried out with validity and reliability tests to determine whether the data is valid and can be used for research.

Validity Test Formula

$$r_{XY} = \frac{N \sum XY - \sum X \sum Y}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$$

Keterangan:

r_{XY} = Koefisiensi korelasi

X = Skor pertanyaan tiap nomor

Y = Jumlah skor total pertanyaan

N = Jumlah responden

Reliability Test Formula

$$r_i = \frac{k}{k-1} \left\{ 1 - \frac{\sum S_i^2}{S_t^2} \right\}$$

Keterangan:

K = mean kuadrat antara subyek

$\sum S_i^2$ = mean kuadrat kesalahan

S_t^2 = varian total

Rumus untuk varians total dan varians item:

$$S_t^2 = \frac{\sum X_i^2}{n} - \frac{(\sum X_i)^2}{n^2}$$

$$S_i^2 = \frac{JK_i}{n} - \frac{JK_s}{n^2}$$

The data analysis technique in this study uses the normality test and simple linear regression test. The normality test is a test conducted to determine whether the data used in the form of data is normally distributed or not. While the simple linear regression test is an approach method to determine the relationship between one dependent variable and an independent variable. The basis for decision making in a simple linear regression test can refer to two things, namely: Comparing the significance value with the probability value of 0.05.

RESULT AND DISCUSSION

The study entitled "The Effect of Trapped Ball Games on Children's Basic Motor Skills at Tunas Bangsa PGRI Kindergarten, Kedaleman Kulon, Kebumen Regency" aims to determine whether providing trapped ball games can improve children's basic motor skills. This game is inspired by the game of throwing and catching a ball. The game of throwing and catching a ball is a game played in pairs by throwing and catching the ball alternately (Arifin & Anita, 2017)

The study began by conducting a trial of the research instrument used to determine whether the research instrument was valid and reliable. Validity and reliability testing were carried out after the instrument data was tested at Dharma Wanita PGRI Kindergarten using the help of Microsoft Excel and IBM SPSS Statistics 26 applications. Of the 21 research instrument items, there were 17 valid and reliable instrument items. The following is a table of the results of the research instrument reliability test.

Table 1. Reliability Statistics

Cronbach's Alpha	N of Items
,732	21

Based on the results of the validity and reliability test calculations, the score obtained was declared reliable, namely >0.70 with a value of 0.732. So it can be said that the tested instrument is valid and reliable so it can be used to conduct research.

Descriptive Analysis Results

The data obtained shows that there are differences in children's basic motor skills before and after the trapped ball game treatment or treatment using descriptive analysis data.

Table 2. Results of descriptive analysis

Statistik	Kelas Eksperimen	
	Pretest	Posttest
Maksimum	47	60
Minimum	37	48
Range	10	12
Rata-Rata	43	55,2

It can be seen that the statistics of the pretest experimental group have an average value of 43, the maximum statistics are 47, the minimum statistics are 37, and the range is 10. While for the posttest, the average value is 55.20, the maximum statistics are 60, the minimum statistics are 48, and the range is 12.

Data analysis

When the child first received treatment, he was still less active, but over time there were changes in the child. Before starting the treatment activities, the researcher always explained what the child would do and what the benefits were for the child's growth and development. Over time, the child became more enthusiastic, because the treatment given to the child was a variety of fun games for the child. The researcher did many activities such as imitating the movement of objects, jumping according to the picture, playing in groups, and many more.

This study uses normality tests and simple linear regression tests to see whether the distribution is normal or not and to see whether there is an influence and how much influence the Trapped Ball Game has on Children's Basic Motor Skills at TK Tunas Bangsa PGRI.

The following are the results of the data normality test.

Table 3. Test of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	0,192	30	0,006	0,942	30	0,103
Posttest	0,209	30	0,002	0,950	30	0,164

The table above shows the pretest value of 0.942 and the posttest value is 0.950. So the results of the pretest and posttest data show that >0.05 , which means normal.

After conducting the data normality test, the next step is to conduct a simple linear regression test. The following is a table of the results of the simple linear regression test.

results of the simple linear regression test.

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,614 ^a	,377	,354	1,39800

a. Predictors: (Constant), Gerak Dasar Anak

The data of the Simple Linear Regression Test Summary Model results above explain the magnitude of the correlation/relationship value (R), which is 0.614. From the output, the determination value (R Square) is 0.377, which means that the influence of the independent variable (Trapped Ball Game) on the dependent variable (Children's Basic Motor Skills) is 37.7%.

Table 5. Anova^a

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	31,921	1	31,921	16,333	,000 ^b
	Residual	52,769	27	1,954		
	Total	84,690	28			

a. Dependent Variable: Permainan Trapped Ball

b. Predictors: (Constant), Gerak Dasar Anak

Meanwhile, in the simultaneous test results (F Test), it can be seen that the calculated F value = 16.333 with a significance level of $0.000 < 0.05$, then the regression model can be used to predict the participation variable or in other words there is an influence of the Trapped Ball Game variable (X) on the Children's Basic Motor Skills variable (Y). So, H_0 is rejected and H_a is accepted, meaning that there is significance in the level of children's basic motor skills at Tunas Bangsa PGRI Kindergarten after the researcher applied treatment for twelve meetings with children at school.

CONCLUSION

The results of the study showed that by conducting a simple linear regression test, the correlation/relationship value (R) was 0.614. From the output, the determination value (R Square) was 0.377, which means that the influence of the independent variable (Trapped Ball Game) on the dependent variable (Children's Basic Movement Ability) was 37.7%. While the results of the simultaneous test (F Test), it can be seen that the calculated F value = 16.333 with a significance level of $0.000 < 0.05$, so the regression model can be used to predict the participation variable or in other words there is an influence of the Trapped Ball Game variable (X) on the variable of Children's Basic Movement Ability (Y). So, H_0 is rejected and H_a is accepted, meaning that there is significance in the level of children's basic movement ability at Tunas Bangsa PGRI Kindergarten after the researcher applied treatment for twelve meetings with children at school.

As for the data obtained, it can be seen that there is a difference in children's basic motor skills before and after the treatment, or trapped ball game treatment is carried out using descriptive analysis data. It can be seen that the group statistics of the pretest experiment have an average value of 43, the maximum statistic is 47, the minimum statistic is 37, and the range is 10. While for the posttest, the average value is 55.20, the maximum statistic is 60, the minimum statistic is 48, and the range is 12. Thus, it can be concluded that children experience an increase in basic motor skills through the trapped ball game.

Treatment activities to develop children's basic motor skills at Tunas Bangsa Kindergarten are very influential and provide many experiences for children. Activities carried out by children with researchers allow children to move freely. Children become more enthusiastic before learning because they have played various movement games with researchers. Usually, children's activities in class rarely involve basic movements, many activities only use their hands.

REFERENCES

- Arifin, M. Z., & Anita, M. (2017). Pengaruh modifikasi permainan lempar tangkap bola terhadap koordinasi gerak manipulatif anak tunagrahita ringan siswa SMPLB-C Alpha Kumara Wardhana II Surabaya. *Jurnal Kesehatan Olahraga*, 7(3), 35–39.
- Derman, A., & Suryana, D. (2022). Pengaruh permainan pacu ban bekas terhadap kemampuan gerak lokomotor

- anak di taman kanak-kanak. *Jurnal Pendidikan Tambusai*, 6(2), 16827–16834.
- Masruroh, I. K., Adhani, D. N., & Mayangsari, D. (2019). Pengaruh permainan angka terhadap kemampuan berhitung permulaan kelompok B. *Jurnal PG-PAUD Trunojoyo: Jurnal Pendidikan dan Pembelajaran Anak Usia Dini*, 6(2), 84–90. <https://doi.org/10.21107/pgpaustrunojoyo.v6i2.6142>
- Muslihin, H. Y. (2018). Bagaimana mengajarkan gerak lokomotor pada anak usia dini? *Jurnal Paud Agapedia*, 2(1), 76–88. <https://doi.org/10.17509/jpa.v2i1.24390>
- Norito, T. B., Putri, S. A. R., Putra, D. D., & Fajar, M. (2022). Penerapan cooperative learning dalam meningkatkan keterampilan gerak dasar pada siswa usia 7-8 tahun. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 6(5), 3889–3900. <https://doi.org/10.31004/obsesi.v6i5.2507>
- Padilah, P., Utami, F., Sari Jaya, M. P., Sinaga, S. I., Novianti, R., & Noverina, R. (2018). Sosialisasi inovasi media pembelajaran permainan Tunas Integritas untuk perkembangan anak usia dini di PAUD Kasih Bunda Yuliani Kec. Ilir Barat I. *Wahana Dedikasi: Jurnal PkM Ilmu Kependidikan*, 1(2), 41–48. <https://doi.org/10.31851/dedikasi.v1i2.2278>
- Rahayu, D. F., & Khsanah, I. (2013). Upaya meningkatkan ketangkasan gerak lokomotor anak melalui permainan Ranjau Pintar pada kelompok A TK An Nur Kaliwungu Kendal tahun ajaran 2012/2013. *Paudia: Jurnal Penelitian dalam Bidang Pendidikan Anak Usia Dini*, 2(2), 73–83. <https://doi.org/10.26877/paudia.v2i2.1640>
- Sholehah, M., et al. (2018). Pengaruh permainan lempar dan tangkap bola terhadap motorik kasar AUD kelompok B di TK Al-Ihsan Karangrejo Sumbersari Kabupaten Jember. *JECIE (Journal of Early Childhood and Inclusive Education)*, 1(2), 100–107.
- Sumantri, M. S., & Endrawati, T. (2013). Kemampuan sosialisasi dan gerak manipulatif berbasis kelompok pada anak usia 4-5 tahun. *Jurnal Ilmiah*, 8(2), 104–110.
- Widiarti, Yetti, E., & Siregar, N. (2021). Peningkatan kemampuan gerak dasar lokomotor anak melalui modifikasi seni tradisional Burok. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 5(2), 1787–1798. <https://doi.org/10.31004/obsesi.v5i2.10>