Kinestetik : Jurnal Ilmiah Pendidikan Jasmani 6 (2) (2022)
Kinestetik : Jurnal Ilmiah Pendidikan Jasmani
https://ejournal.unib.ac.id/index.php/kinesthetic/index
DOI : 10.33369/jk.v6i2.21632

The Effect of Locomotor Games on Gross Motor Ability of Elementary School Students

Indah Verawati*[1], Rahma Dewi[2], Bessy Sitorus Pane[3], Nurkadri[4]
[1] Sports Science, Faculty of Sports Science, Universitas Negeri Medan, Medan, Indonesia.
[234]Sports Coaching Education, Faculty of Sports Science, Universitas Negeri Medan, Medan, Indonesia.

Article Info

Article History :

Received : May 2022

Revised : June 2022

Accepted : June 2022

Keywords:

Elementary School Students, Gross Motoric, Locomotor Games

Abstract

This study aims to examine the effect of locomotor games on gross motor skills of elementary school students. The design of this study used a quantitative pre-experimental design type one-group pretest-posttest. The sample in this study amounted to 20 people with. purposive sampling technique The instrument used in this study used the TGMD-2 Test of Gross Motor Development-2. The research methodology used in this study was data analysis using paired t-test statistical techniques. In the paired t-test analysis, the pretest and posttest p value = 0.000 (p <0.05). From these results it can be concluded that there is a significant positive effect of locomotor games on the gross motor of elementary school students.

*Corresponding email : indahverawati@unimed.ac.id

ISSN 2685-6514 (Online)
ISSN 2477-331X (Print)

INTRODUCTION

Education is the most important thing for the sustainability of human life, all Indonesian citizens have the right to education. Education for humans is an absolute need that must be met throughout life (Yusmawardi et al., 2017). Education for the Indonesian people is a necessity that must be developed gradually in line with the times (Dewi & Verawati, 2022). The Indonesian nation is currently trying to educate the nation's children in optimal education which is carried out in stages. Education is a conscious and planned effort to mature humans both physically and spiritually and to create a learning atmosphere and learning process so that students can actively develop their potential so that they have spiritual, religious, emotional, self-control, personality, intelligence, noble character and skills. needed by himself and society (Akhmad et al., 2022).

Locomotor ability is a person's ability to perform basic movements. The basic locomotor abilities possessed by children are essentially basic things that children must be able to do in accordance with their age development (Widiarti et al., 2021). In the life cycle, every human being must experience a process of development, this can be seen from the changes in terms of physical and psychological. This development process starts from an early age, namely the age of 0-6 years, this age is called the golden age, which is the golden age, because it is at this age throughout human life that children experience the best and amazing period of development. Therefore, at this early age, children must get optimal stimulation to develop all aspects of child development.

However, some children still find it difficult to perform basic locomotor movements (Puspitosari, 2020). These difficulties can cause the child's development to be hampered so that the child's movement will be minimal. Basic locomotor movements can be said to develop if the child is skilled in using the coordination of his limbs such as walking, running, bending, swinging his legs and arms, jumping, walking, swerving to the right and left. In this case the child will be more alert and flexible in socializing with friends around him. In addition, children who have good basic locomotor skills will be able to help themselves display a good attitude and are skilled at solving problems experienced by these children in everyday life.

According to (Nugraha, 2017), locomotor skills are a very important movement for human transportation, these skills are identified as skills that move individuals from one space or place to another. The development of locomotor skills is generally the result of a certain level of maturity. (Surahni, 2017) explains that locomotor activities are the main basis for moving a person's position to move from one place to another. This locomotor activity is divided into 3, namely movement with the feet, movement with a pedestal, and movement depending on time. Without locomotor activity, a person will not be able to explore the surrounding environment optimally. Locomotor motion or often called traveling is defined as moving from place to place, such as walking, running, and jumping. These three skills are considered the most basic locomotor skills because they are skills that develop with development and are more functional in nature. So it can be synthesized that locomotor motion is a movement consisting of walking, running, jumping, sliding and so on (Supriadi et al., 2022).

Aspects of child development that need to get the maximum stimulus are

aspects of language development, physical motoric, religious morals, social emotional, cognitive, and artistic (Simahate & Munip, 2020). One of the most important aspects of the six aspects of child development is the aspect of physical motor development.

Children's motor skills are related to the process of growth and development of children's movements and will be seen through various movements and games that can be done. Early childhood has a great ability to accept stimuli from outside the child. One of the stimuli from outside the child is when the child is at school. In this case, the role of early childhood educators in optimizing gross motor skills is very important. If the efforts made are not appropriate then the negative impact will carry over into adulthood.

Directly developing the physical aspects of the child's motor will determine the child's ability to move through movement or perform movements. As for indirectly the development and growth of physical motoric influence on the way children understand themselves and others. Physical motor development can affect a child's behavior in daily life. In addition to the need to get the maximum stimulus, aspects of physical motor development are also easy to see and recognize because it is related to physical activity. However, in reality there are several cases of problems in the process of children's motor development.

Children's gross motor development is related to the ability to use whole body movements to express ideas and feelings as well as the skills to use hands to create or change things. Gross motor development includes specific physical abilities such as coordination, balance, skills, strength, flexibility, speed and strength to receive stimuli, touch, and texture. Children who are intelligent in gross motor movements stand out in physical abilities more than children their age. They tend to like to move or do not like to sit still for long periods of time, like to imitate movements and enjoy activities that rely on the power of motion such as climbing, running, jumping, and rolling. So that some children have developmental disorders and have difficulty in regulating body balance. Adjusting the balance of the body is needed by children to carry out activities that are more difficult and complex, such as jumping, running, climbing, and dancing. The impact of imbalance on children is difficulty in regulating and controlling limb movements so that the movements seem stiff, hesitant and awkward.

Improving gross motor skills in children through playing activities is very important because playing activities can be fun activities for children, children can make spontaneous movements, through playing activities children will get used to moving their limbs which will train flexibility, balance, and body coordination, play activities are also entertainment for children, so that children do not feel bored in learning so that creative ideas will emerge. Gross motor skills in children aim to introduce and train gross movements, improve the ability to manage, control body movements and coordination, and improve body skills and a healthy way of life, so that they can support healthy, strong and skilled physical growth. In accordance with the purpose of physical development, students are trained in basic movements that will help their motor development in the future. The development of children's basic abilities is seen from their motor skills, so teachers need to help develop children's motor skills in terms of introducing and practicing gross motor movements, increasing the ability to manage, control body movements and coordination, and improve body skills and a healthy way of life so that it can support healthy physical growth. strong, healthy and skilled. The

competencies of children that are expected to be developed by teachers when children enter preschool institutions are children who are able to carry out motor activities in a coordinated manner in an effort to increase flexibility and readiness for writing, balance, and training courage. The types of gross motor skills according to (Lubans et al., 2010) are as follows: locomotor motion, non-locomotor motion and manipulative motion. This study focuses on locomotor motion. According to (Gustiana, 2011) locomotor motion is a very important movement, this skill is identified as a skill that moves individuals in one space or place to another space or place, locomotor motion or often called traveling is defined as movement to move places, such as walking, running, and jump. These three skills are considered the most basic locomotor skills because they are skills that develop with development and are more functional in nature.

Various studies have been carried out on how important it is to stimulate basic locomotor movements in children at an early age with the aim that in the future the entire performance of the child's muscles can develop properly so that every activity carried out by children can be carried out properly and optimally. The basic locomotor movements possessed by older children are more satisfying when compared to younger children, the difference is due to habituation or exercise that is carried out every day (Widiarti et al., 2021). Based on Eleni's statement also that the difference between boys and girls has different locomotor movements (Veldman et al., 2018) Eleni's statement explains that the movements of boys and girls have differences in control and agility, because boys boys will be more agile but somewhat less in terms of control and conversely girls have agility that is a little weak but has good control.

Based on the background that the researcher describes on the background of the problem and the research that has been done previously, the researcher is interested in studying the effect of locomotor games on the gross motor skills of elementary school students.

METHODS

The research method used in this research is quantitative research using a pre-experimental design, one-group pretest-posttest type. The population in this study were elementary school students Al-Ulum Medan. The sampling technique used was purposive sampling with the criteria set by the researcher as follows: (1) children aged 6-10 years according to the TGMD-2 instrument, (2) able to hear and understand instructions well. The pretest and posttest data were collected using the Test of Gross Motor Development-2 instrument. The analysis test used paired t-test with a significance level of 5%/0.05.

RESULT

Characteristics of respondents are dominated by the age range of 6-10 years.

Table 1. Characteristics of Research Sample

No	Age (Y)	Frequency (n)	Percentage (%)
1	6.0-6.11	5	25%
2	7.0-7.11	6	30%
3	8.0-8.11	4	20%
4	9.0-9.11	5	25%
Total		20	100 %

Characteristics of respondents by sex dominated by men by 60%

Table 2. Characteristics of Research Sample

Characteristics		Frequency (n)	Percentage (%)
Gender	Male	12	60%

	Female	8	40%
	Total	20	100%

From Table 2 it can be seen that the number of characteristics of the male sample is more than the female sample, this can be seen in Figure 1 histogram below.

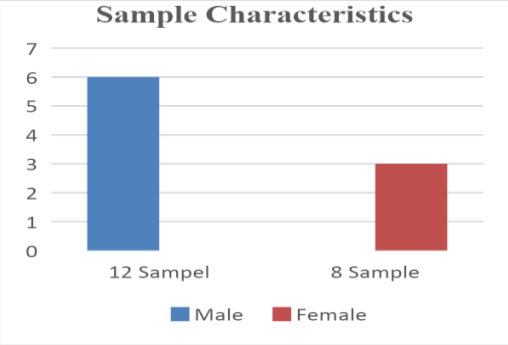

Figure 1. Histogram

The result of the difference in the average value is 12 from the pretest average value of 75 (poor) and the posttest average value of 86 (below average). The increase in the TGMD-2 score occurred after being given locomotor game activities.

Table 3. Data Pretest-Posttest TGMD-2 Instrument

Category	N	Min	Max	Mean	SD
Pretest	20	63	78	75.00	4,680
Posttest	20	74	93	86,00	7,072

Statistical test results with paired sample t-test showed that the value was 0.000 ($\rho<0.05$) which means there is a significant difference between gross motor skills after being given locomotor game treatment to elementary school students.

Table 4. Hypothesis Testing the Difference in Mean TGMD-2 Score

Group	N	Mean	Difference between pretest and posttest	P
Pretest	20	75.00	12	0.000
Posttest	20	86.00		

In Table 4 above it can be illustrated that the results of the test using TGMD-2 have an average value The average value is 12 with a pretest score of 75 in the poor category and the average value after being given posttest treatment is 86 in the good category. From these results it can be concluded that children's gross motor skills can increase when given treatment using locomotor games. The results of statistical testing using paired sample t-test showed that the results of the mean score of TGMD-2 were different between before and after treatment, the p value = 0.000 (<0.05). So from these results it can be concluded that there is a significant influence between locomotor games on the gross motor skills of elementary school children.

DISCUSSION

Various studies have been carried out on how important it is to stimulate basic locomotor movements in children at an early age with the aim that in the future all the performance of the child's muscles can develop properly so that every activity carried out by children can be carried out properly and maximally. . The basic locomotor movements possessed by older children are more satisfying when compared to younger children, the difference is due to habituation or exercise that is carried out every day (S. et al., 2020) Based on Eleni's statement also that the difference between boys and girls have different locomotor movements (S. et al., 2020). Eleni's statement explains that the movements of boys and girls have differences in terms of control and agility, because boys will be more agile but

somewhat less in terms of control and on the other hand girls have agility that is a little weak but has good control.

Basic locomotor movements can function properly when at an early age locomotor-movements have experienced maturation, because through maturation of basic locomotor movements during early childhood it can be a good provision to start early development of locomotor movements in adulthood (Gustian et al., 2019). Likewise, a statement that is almost the same as melo that the basic locomotor development of early childhood is strongly influenced by the physical exercise that children do every day with exercise is carried out by the child, the child will begin to get used to moving the limbs starting from the basic locomotor movements (Lemos et al., 2012).

Basic locomotor movements can be developed optimally by children when children have a strong perception that they can do well when doing exercises (Widiarti et al., 2021). Giving a stimulus to children's basic locomotor movement abilities shows that there is a need for scientific studies regarding what factors affect children's basic locomotor movement abilities, especially in early childhood. The presence of children who take part in the exercise program experience an increase in basic locomotor movement abilities which are assessed through the PDMS-2 score, the findings of this study are the key that children's locomotor movements will increase when the child is given a regular exercise and the child follows according to the instructor (Nur et al. al., 2020). In line with what was conveyed by Wang, in elementary school also children who have locomotor movement abilities that are still lacking can be applied to additional exercises so that these children can maximize their movements, where the exercises that are applied are called. Children who take part in structured exercise activities will get used to doing a movement starting from the lightest to the most complex, for some children who find it difficult to carry out these movements will indeed feel difficulty because the limbs are not coordinated with one another at the same time, but when he has started to enter the next one he will begin to understand that the movement should be as it has been taught, and in the next activity the child will begin to get used to doing it. However, for children who do not want to take part in training activities, at that time the child will be more silent looking at their friends. In addition, children who tend to be inactive can cause delays in sustainable development later in life when the child is an adult (Hidayat, 2017)

. In motor development, basic movements are referred to as Fundamental Movements which involve certain basic elements of development from only one kind of movement. Basic movement is an activity that is ideally given in childhood by taking into account several requirements as stated by (Simahate & Munip, 2020), including: (a) the child's body is more flexible when compared to teenagers and adults so that children can be sure it will be easier to accept lessons, (b) children will find it easier to learn the skills that have just been given, (c) overall children are more daring when they are young than when they are adults, therefore children will be more daring to try something that is considered interesting and new to him so that the child can be motivated to learn. Basic locomotor movements that can be developed in childhood include running, jumping, walking, shifting (Burstiando, 2015). While the basic manipulative movements that need to be developed include lifting, throwing, kicking, bending. All of these movements are part of the advanced movements of the more complex basic movements. If a person can master more complex movement skills, then it is greatly

influenced by the experience of basic movements that have been mastered by himself. Research conducted by Louise (Bremer & Lloyd, 2014) stated that children who were subjected to a routine exercise program for basic locomotor movements had an increase in their movement development. In this case, it shows that children who are accustomed to doing basic movements will be active in various movement activities. Furthermore, motion is one part of physical-motor development which is a complete movement. Motion is the movement of the limbs roughly or violently, (Taqwim et al., 2020) the more a child grows up and his body becomes stronger, the frictional force becomes more perfect. This results in muscle growth getting bigger and stronger. By enlarging and strengthening these muscles new skills are always emerging and increasingly complex. Physical exercise in the form of basic abilities carried out by children on a daily basis is the primary thing in shaping the child's body work system (Ariyanto et al., 2020)

. will come. (Yusmawardi et al., 2017) stated that basic locomotor movements in the context of traditional games are physical movements that require balance and coordination between the limbs by relying on large muscles in part or all of the body. While the basic locomotor movement itself according to (Larsen Moen & Hall-Lord, 2016) is the motion of moving the body from one place to another. Basic locomotor movements according to (Elliott et al., 2006) are body movements that use large muscles or most of the muscles in the body or all limbs that are influenced by self-maturity. Physical exercise should be taught to early childhood so that children have basic motor skills, especially good locomotor movements.

This is of course so that the child can have good development for the child in the future (Lemos et al., 2012). Likewise, what was done in his research which stated that children who were used as objects of research and carried out basic locomotor movement exercises on a regular basis, had increased locomotor basic movements (Widiarti et al., 2021). The same thing was also stated by Eleni (S. et al., 2020) Children who lack movement activities usually have a fat body weight because of the absence of burning body fat so that children are less able to perform good locomotor movements. So from early childhood, it is highly recommended that children always do locomotor exercises regularly so that children can reduce their weight and make it easier for children to do other movements such as running and jumping with joy (Syahrial, 2015). Basic locomotor movement is the ability of children to move using gross muscles. Elements of basic movement work that comes from the brain, nerves and then muscles. The three elements above carry out their respective roles in a positive interaction. That is, the elements that are interrelated, support each other, complement each other with the elements to achieve a more perfect condition of motion. Children whose brains are impaired appear to be less skilled at moving their bodies. Based on the three elements above, the form of movement behavior that appears is divided into two forms, namely gross motor (involving large muscles, nerves and brain) which includes basic movements, and fine motor (involving small muscles, nerves and brain).

CONCLUSION

After conducting research, it was shown that there was an effect of locomotor game activity on gross motor skills in elementary school children. One of the efforts to improve locomotor skills is to provide a cardboard jump game. Cardboard jumping game activities consist

of one-legged and two-legged jumping, standing upright, rotating by changing body position and throwing movements. These movements can improve gross motor skills, jumping movements can increase the growth and development of muscles getting bigger and stronger.

ACKNOWLEDGEMENT

Research thanks go to the Medan State University Research and Service Institute (LPPM UNIMED) which has assisted in providing research funds. It is hoped that the results achieved can make a positive contribution to the progress of the State University of Medan (UNIMED). The researcher would also like to thank everyone who was involved in this research.

REFERENCES

Akhmad, I., Suharjo, S., Hariadi, H., Dewi, R., & Supriadi, A. (2022). The Effects of Learning Strategies on Senior High School Students' Motivation and Learning Outcomes of Overhead Passing in Volleyball. International Journal of Education in Mathematics, Science and Technology, 10(2), 458–476. https://doi.org/10.46328/ijemst.2291

Ariyanto, Triansyah, A., & Gustian, U. (2020). The Use of Traditional Games to Improve Fundamental Movement Skills of Elementary School Students. Indonesian Journal of Physical Education, 16(1), 78–91. https://journal.uny.ac.id/index.php/jpji/article/view/30785

Bremer, E., & Lloyd, M. (2014). The Importance of Fundamental Movement Skill Proficiency for Physical Activity in Elementary School Age Females. Revue PhénEPS / PHEnex Journal, 6(2).

Burstiando, R. (2015). Sports journal vol. 1 no. November 1, 2015 60. Journal of Sport, 1(1), 60–73.

Dewi, R., & Verawati, I. (2022). The Effect of Manipulative Games to Improve Fundamental Motor Skills in Elementary School Students. International Journal of Education in Mathematics, Science and Technology, 10(1), 24–37. https://doi.org/10.46328/ijemst.2163

Elliott, WB, Van Ness, BF, Walker, MD, & Warr, RS (2006). What drives the S&P 500 inclusion effect? An analytical survey. Financial Management, 35(4), 31–48. https://doi.org/10.1111/j.1755-053X.2006.tb00158.x

Gustian, U., Supriatna, E., & Purnomo, E. (2019). The effectiveness of the modification of traditional games in the development of physical literacy in kindergarten students. Journal of Sports, 7(1), 23–33.

Gustiana, AD (2011). Effect of Modified Game on Gross Motor and Cognitive Ability of Early Childhood. Journal of Educational Research, Special Issue(2), 154–163.

Hidayat, A. (2017). Increasing Locomotor, Non-locomotor and Manipulative Movement Activities Using Game Models for Elementary School Students. Journal of Physical Education and Sports, 2(2), 21. https://doi.org/10.17509/jpjo.v2i2.8175

Larsen Moen, ., & Hall-Lord, ML (2016). Reliability and Validity of the Norwegian Family Sense of Coherence Scale. Open Journal of Nursing, 06(12), 1075–1086. https://doi.org/10.4236/ojn.2016.612102

Lemos, AG, Avigo, EL, & Barela, JA (2012). Physical Education in Kindergarten Promotes Fundamental Motor Skill Development. Advances in Physical Education, 02(01), 17–21. https://doi.org/10.4236/ape.2012.21003

Lubans, DR, Morgan, PJ, Cliff, DP, Barnett, LM, & Okely, AD (2010). Fundamental movement skills in children and adolescents: Review of associated health benefits. Sports Medicine, 40(12), 1019–1035. https://doi.org/10.2165/11536850-000000000-00000

Nugraha, RG (2017). The Use of the Play Approach as a Way of Developing Children's Creativity in Physical Education Learning in Elementary Schools. JESA (April Eleven Educational Journal), 1(2), 13–23. https://jurnal.stkip11april.ac.id/index.php/JESA/article/view/21

Nur, L., Giyartini, R., & Sumardi, S. (2020).

Gross Motor Skills: Outbound Activities in Elementary Students. CHAMPION: Journal of Sports, 5(1), 93–99. https://doi.org/10.33222/juara.v5i1.781

Puspitosari, A. (2020). The Effect of Locomotor Games on Gross Motor Skills of People with Down Syndrome. Stethoscope, 1(2), 78–82. https://ejurnal.stikesmhk.ac.id/index.php/JURNAL_ILMIAH_KEPERAWATAN/article/download/806/713

S., TS, Nasirun, M., & D, D. (2020). Application of Locomotor Motion as a Media to Improve Gross Motor Ability in Group B1. Potential Scientific Journal, 5(1), 1. https://ejournal.unib.ac.id/index.php/potensia/article/view/8188

Simahate, S., & Munip, A. (2020). Locomotor Movement Exercises as an Effort to Develop Gross Motor Skills for Down Syndrome Children. ThuguLA: Journal of Teacher Education Innovation Raudhatul Athfal, 8(2), 236. https://doi.org/10.21043/thufula.v8i2.7656

Supriadi, A., Akhmad, I., Dewi, R., Mesnan, I. , Akhmad, R., & Dewi, S. (2022). The Effect of Learning Manipulative Skills Using Ball Thrower Learning Media on the Ability to Throw and Catch the Ball in Elementary School Students. International Journal of Education in Mathematics, 10(3), 590–603.

Surahni. (2017). Physical Education, Sports and Health (PJOK) as a Means of Moral Education. The 6th University Research Colloquium 2017, 41–46.

Syahrial, B. (2015). Designing Children's Basic Movement Learning. In Unp Press (Vol. 1).

Taqwim, RI, Winarno, ME, & Roesdiyanto, R. (2020). Implementation of Physical Education, Sports, and Health Learning. Journal of Education: Theory, Research, And Development, 5(3), 395. https://doi.org/10.17977/jptpp.v5i3.13303

Veldman, SLC, Jones, RA, Santos, R., Sousa-Sá, E ., & Okely, AD (2018). Gross motor skills in toddlers: Prevalence and socio-demographic differences. Journal of Science and Medicine in Sport, 21(12), 1226–1231. https://doi.org/10.1016/j.jsams.2018.05.001

Widiarti, W., Yeti, E., & Siregar, N. (2021). Improving Children's Basic Locomotor Movement Ability through Modification of Burok Traditional Art. Journal of Obsession: Journal of Early Childhood Education, 5(2), 1787–1798. https://doi.org/10.31004/obsesi.v5i2.1005

Yusmawati, C., Suarni, NK, & Magta, M. (2017). The Influence of Active Play Method on Locomotor Movement Ability of Children in Group A PAUD Pelita Kasih Singaraja. Journal of Early Childhood Education Ganesha University of Education, 5(2), 199–209.