



Traditional game based on e-learning method to improve the basic locomotor movements

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Abstract: Physical education and sports in elementary schools have a central role in the growth and development of students in preparing themselves to face the future. One of the tasks and functions of physical education is to develop the quality and quantity of students' basic movements. This can be developed through traditional game-based learning methods. This research aimed to produce basic locomotor movements through a traditional game-based learning model for students at the elementary school level and to determine the feasibility and practicality of the game model developed to improve basic locomotor movements and cooperation for lower grade elementary school students. This research used the research and development model based on Traditional Games. The research subjects were teachers and students at the elementary school level. The data collection instruments used were observations, interviews and questionnaires. The data analysis techniques used are quantitative and qualitative analysis. The results of the validity and reliability tests showed that the simple game-based PJOK learning model developed was valid and reliable, so that the product is suitable for use in the learning model. Based on the results of teacher and student assessments, it shows that the simple game-based PJOK learning model which was developed to improve locomotor movement and overall cooperation is stated to be very good. It can be concluded that this is a game model that can be used to develop locomotor movement and cooperation skills for elementary school level students.

Keywords: Physical Education, Traditional Games, Locomotor Movement

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INTRODUCTION

Education is one of the basic human needs to improve the quality of human resources in order to achieve an increasingly advanced and prosperous level of life for the nation (Desmawan, et al: 2023). Achieving quality education is one of the factors that influences the success of students in the future. Schools have an important role as a place for students to develop the knowledge, skills and impersonal competencies needed for their development in adulthood so that they can make a positive contribution to life in society (Sinaga, et al: 2024). School will provide learning experiences that cannot be obtained at home.

"Education is the process of training students which is designed in the form of learning experiences to develop knowledge, skills and competencies that can be used as capital to meet the needs of life and those of their families" (Sagala, 2013). Early childhood education should have an educational philosophy that touches all child development and is supported by learning that is adapted to the world of early childhood (Muchlisin, 2017). Children will develop as they should if they receive good attention and stimulation from school (K. Wijaya et al., 2023). One part of the educational process in general is physical education, so physical education should not be ignored from the overall educational process. There is no possibility that physical education is a subject that children like because children can explore what they want to do.

Suherman (2004) said that physical education is a learning process carried out through physical activity, which is designed to improve physical fitness, develop motor skills, develop knowledge and healthy and active living behavior, develop sportsmanship, and the emotional intelligence of students. Meanwhile, physical education is a medium for encouraging the development of motor skills, physical

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abilities, knowledge, reasoning, appreciation of values (attitudes, mental, emotional and social) and the habit of healthy lifestyles which lead to stimulating balanced growth and development (Rosdiani, 2012).

Childhood is an excellent opportunity for learning, namely optimizing the development of basic locomotor movements and cooperation (RG Wijaya et al., 2024). During childhood, children gain more movement experience by playing both individually and in groups according to their age characteristics. Motor development is the process of growth and development of a person's movement abilities (Adatul et al., 2023). Every movement a child makes is the result of a complex interaction pattern of various parts and systems in the body which are controlled by the brain. Motor skills consist of gross motor skills and fine motor skills.

Basic movements have an important role in physical education learning, basic movement skills can be applied in various games, sports and physical activities that are carried out every day (Rejeki et al., 2021). Basic movement abilities consist of locomotor movements, non-locomotor movements and manipulative movements (RG Wijaya et al., 2023). Gross motor skills include walking, running, jumping and skipping. Through motor learning in elementary school it will influence several aspects of students' lives, such as: (1) through motor learning children get entertainment and gain pleasure, (2) through motor learning children can move from a weak condition to an independent condition, (3) through motoric learning children can adapt to the environment, (4) through motoric learning it will support children's skills in various things, (5) through motoric learning it will encourage children to be independent, so they can solve all the problems they face (Decaprio, 2013).

The characteristics of children's motor development vary greatly. The characteristics of elementary school age children are that they enjoy playing, moving, grouping, and direct practice (Burhein, 2017). The current situation with the health conditions of school-age children, currently in the world, is linked to the motor activities that exist in the world. There is a need for games to improve motor skills (Kashuba et al., 2018). Therefore, this activity is adapted to the development of locomotor movements and cooperation. So, through appropriate physical activity and according to the period it is hoped that it will have an impact on locomotor development and cooperation. The movement experience gained in physical activities is incorporated into physical education learning. One aspect of a child's character is cooperation.

Nacy Stevenson (Isti Dwi & Touvan, 2013) stated that cooperation is an attitude that understands that the strength of many people working together will be greater than the ability of individuals. Collaboration is one of the values that is often taught by sports coaches, especially sports games that require more than one player. Cooperation is also an important factor in achieving an achievement goal. From the explanation above, it can be concluded that cooperation is a character value that identifies that togetherness is superior to individuals in achieving goals in a group. Based on previous research, children are often selfish when in the field.

The application of the game model to children is carried out as an effort to instill the spirit or character of cooperation between friends. In physical education, the value of cooperation is also very much needed in physical education learning, considering that physical education often uses groups in each lesson. For example: material for big ball games, small ball games, traditional games, out-of-class activities, and so on. Through physical education learning, we can also learn about locomotors and students' cooperation. Of course, you can find out the child's physical development. Basically, children's physical development is not the same as one another, even though they are relatively the same age or at the same school level. Considering the growth of children from various ethnicities and races also shows differences. This has been delayed (Putri et al., 2023).

Therefore, motor stimulus must be developed because children who receive directed and regular stimulus will develop more quickly compared to children who do not/receive less stimulus. Games are physical activities that provide fun as well as learning. The games played should not be monotonous so that students do not get bored quickly. In the game students will gain and improve their physical fitness skills, the games played are also based on the students' abilities and characteristics so that their achievements are in line with the expected physical education goals. The form of the game designed refers to locomotor development and student cooperation.

Games that provide opportunities for students to socialize and work together, with socialization between children will create a relationship or inner bond of togetherness, tolerance, mutual respect and many other good values that will be created and not to forget, the value of cooperation will also be

created well. Based on the 2013 curriculum in core competencies and basic competencies in physical education, sports and health for grade 3 elementary school students, students can achieve and practice physical fitness activities in various forms of simple games. As well as applying the values of sportsmanship, honesty, cooperation, never giving up, responsibility, discipline and so on.

According to (Rosdiani, 2012) "In the physical education learning process, teachers are expected to teach various basic movement skills, techniques and strategies for games and sports, internalize values (sportsmanship, honesty, cooperation, etc.) and healthy living habits." In this case, games can be used as a medium to improve students' multilateral skills which include physical fitness activities and cooperation. The importance of developing physical activity in physical education. So the researcher wants to try to create a game model to improve basic locomotor movements and cooperation in lower 5th grade students. The research was conducted on lower grade elementary school students, especially grade 3 students.

In developing game model activities to improve locomotor and cooperation, lower class students continue to combine the educational domain which includes cognitive aspects, affective aspects and psychomotor aspects. With this game model, it is hoped that it can increase teachers' knowledge in applying new variations for non-monotonous learning and help students be actively involved with a sense of fun, self-confidence, and can achieve the desired learning goals. Researchers found that social values such as love, empathy, helping each other, generosity, and sharing and tolerance begin to develop in elementary school-aged children.

These social values are part of prosocial behavior which is important for children's social and emotional development. One form of prosocial behavior that can be developed in elementary school age children is the ability to cooperate. Based on the results of observations and interviews with 4 physical education teachers in elementary schools in Muntilan sub-district, Magelang district, a picture of the problem was obtained, namely that there was a request to create an interesting game for students, especially lower class students. Apart from that, all the sports equipment in the school is useful, especially children's sports equipment. In reality, in the field, students are also bored with the learning methods used by teachers. Ideally, teachers provide game-style activities so that students do not get bored and also enjoy learning so that students will achieve learning goals.

Facts in the field show that the lack of interest of elementary school students in carrying out activities that involve physical activity is not only due to the lack of basic locomotor movement skills possessed by the students, but also because of the lack of variation in the basic locomotor movement games provided by the teacher. When the teacher delivers basic movement material, the teacher will provide the material through games that contain value, locomotor, non-locomotor and manipulative elements, students will be enthusiastic during learning.

Conditions in the field where students are less enthusiastic about participating in the learning process especially in basic movement material, are because students are bored or fed up during these activities. The teacher should provide game activities that will make students enthusiastic about following the learning process on basic movement material. To overcome the problems in learning basic movements described above, the research will develop game model activities to improve basic locomotor movements and cooperation in lower elementary school students.

Examples of material teaching activities to develop locomotor and cooperation are ball games, relay races, and hunting. These 3 games have the aim of making students more enthusiastic, having fun and of course developing aspects of cooperation and developing students' motor skills. Therefore, the author aimed to create a game model activity to improve basic locomotor movements and children's cooperation for lower grade elementary school students with the aim of students being able to improve multi-dimensional skills and master basic motor development skills first so that they can be used as provisions for students in recognize and understand motor development to the next level of education.

METHOD

This research uses the type of research and development. Research and development is a research approach to produce new products or improve existing products (Sukmadinata, 2008). This research approach is R&D based on traditional games. The test subjects in this research consisted of small-scale and large-scale trials. In small-scale trial, the test subjects in this research and development involved lower grade elementary school students. The large-scale subject involves lower grade elementary school

students from two elementary schools. The author obtained qualitative and quantitative data. Qualitative data was obtained from: (1) input data and suggestions from experts for product improvement, (2) data from trial assessment results from model observations from material experts, (3) data from observational assessments of model effectiveness from experts. These data are used to evaluate game models for the development of basic locomotor movements and cooperation of elementary school students. In carrying out this research, researchers used data collection techniques in the form of interviews, field notes, and value scale questionnaires. To better understand the value scale questionnaire instrument, please see Table 1.

Table 1. Questionnaire instrument grid with validation value scale draft of a traditional game model to develop basic locomotor movement skills for elementary school students

No	Factor	Indicator	Item No
1	Fill Model	Competency standards and basic elementary competencies	1
		The game model is appropriate to the characteristics of students	2
		Games can develop basic locomotor movement skills	3-4
2	Model Instructions	Game instructions are clear and easy to understand	5
		Game instructions are clear and easy to put into practice	6
3	Security of Facilities and Infrastructure	The security level of the model complies with security standards	7
		The security level of the tool complies with security standards	8
		The equipment needed is easy to obtain	9
		Equipment settings are clear	10
		Attractive equipment for elementary school students	11

The data analysis technique used in this research is a mix method which consists of quantitative and qualitative data. Quantitative descriptive data analysis techniques were carried out on the results of the validation assessment using the material expert's rating scale for the game model before testing. The sequence of data analysis techniques in this research is as follows. The first is to calculate all the total average scores from the assessment components which are carried out using the formula:

$$X = \frac{\sum X}{n}$$

Keterangan: X= Skor rata-rata
 $\sum X$ = jumlah skor rata-rata
 n = jumlah penilai

Figure 1. Data Analysis Technique Formula

The second step to convert the average score into a value with criteria. To assess the quality of the game model developed, the data, which was initially in the form of scores, was converted into qualitative data (interval data) with a scale of five. Quantitative data from validation of material experts, learning experts and teacher respondents was then converted into 5 scale quantitative data using a conversion reference (Sukarjo, 2006) in table 2.

Table 2. Conversion Formula

No	Criteria	Score Formula
1	Very good	$X > X_i + 1.80 S_{bi}$
2	Good	$X_i + 0.60 S_{bi} < X \leq X_i + 1.8 S_{bi}$
3	Pretty good	$X_i - 0.60 S_{bi} < X \leq X_i + 0.60 S_{bi}$
4	Not good	$X_i - 1.80 S_{bi} < X \leq X_i - 1.80 S_{bi}$
5	Very Not Good	$X \leq X_i - 1.80 S_{bi}$

Information:

X: actual score (achieved score)

Average ideal score (X_i): $\frac{1}{2}$ (ideal maximum score + ideal minimum score)

Ideal standard deviation (S_{bi}): $\frac{1}{6}$ (ideal maximum score – ideal minimum score)

RESULTS AND DISCUSSION

Results

At this stage the researcher designed the initial stage of developing a game method that could be used to improve basic locomotor movements and cooperation in lower elementary school students. Based on needs analysis data obtained from field observation data, it was found that students felt bored or bored when carrying out sports learning activities because the teacher was too monotonous when learning was carried out. Apart from that, students' motor skills are still lacking, especially when exercising, students are less enthusiastic about doing it. Based on various existing needs analysis findings, several game models were created consisting of ball games, relay games, and hunting games.

After the product design stage is complete, a validation test is carried out on the design of the development of a game method that can be used to improve basic locomotor movements and cooperation of lower elementary school students, which will be developed, will be assessed, and given input by the trainers who will later use this product with Product validation is carried out by experts. Based on the validation results, experts stated that the model developed was good, it only needed input and revision, namely the grid for the motor feasibility test instrument still needed to be improved and completed. Based on the results of the analysis from the expert validation, the researchers immediately improved the development of a game method that could be used to improve basic locomotor movements and cooperation for lower grade elementary school students. After the learning design has been formulated based on input from experts in the field, the researchers then carry out product trials. This trial was carried out in two stages, first on a small scale and then followed by a large scale trial.

Small Scale Product Trials

The small-scale trial in this research was carried out in one school with 1 teacher. The results of small-scale trials can be seen in the table 3.

Table 3. Table of Trials on Small Scale Students

Item	Ball Game	Hunting Game	Rope Game
1	5	5	4
2	5	4	4
3	4	5	4
4	5	4	5
5	5	5	4
6	5	4	4
7	5	4	5
8	5	5	4
9	5	4	5
10	4	4	5
11	5	5	4
12	5	4	4
Amount	58	53	52
Average	4.83	4.41	4.33
Percentage	96.67	88.34	86.67
Category	Very well	Good	Good

Large Scale Product Trials

The results of large-scale trials can be seen in the table 4.

Table 4. Table of Trials on Large-Scale Students

Item	Ball Game	Hunting Game	Rope Game
1	5	4	3
2	5	5	5
3	4	4	4
4	5	4	4
5	5	5	5
6	4	5	3
7	5	4	5
8	5	4	4
9	4	5	4
10	4	4	4
11	4	5	5
12	5	4	3
Amount	55	51	49
Average	4.58	4.25	4.08
Percentage	91.67	85	81.67
Category	Very well	Good	Good

Discussion

In the initial stage, the author designed research products based on needs analysis data obtained from observation data in the field. After the field needs analysis data is obtained, the product design will then be assessed, and input will be given by the trainers who will later use this product. Based on the validation results, the expert stated that the model developed was good, it only needed input and revision, namely the grid for the motor feasibility test instrument still needed to be improved and completed.

After the product design has passed the validation process, a product assessment is carried out on a small and large scale to assess the quality of the product that will be developed. In tables 3 and 4, it is found that based on the results of both small and large scale trials from students, it shows that the ball game model is in the very good category, while the hunting game and rope game are in the good category. Elementary school children tend to prefer small and large ball games to hunting games and rope games for several reasons. One of them is because small and large ball games offer the opportunity to be active and play with their friends. Apart from that, ball games can also improve children's motor skills, coordination, and physical fitness (Widodo, Nurhasan, Na and Uulaa: 2023). On the other hand, hunting games and rope games may be less popular among elementary school children due to lack of interest in these types of games or lack of accessibility. Hunting games such as using slingshots to hunt animals or rope games such as jumping rope may require special skills or more complicated preparation compared to small or large ball games.

The small-scale trial data in tables 3 and 4 were then obtained from the students' opinions regarding ball games, hunting games and rope games. Based on the results of small-scale test research, it shows that the development of a Physical Education learning model based on traditional games to improve basic locomotor movements is feasible to continue to the next stage. With the excellent and good categories, it can be said that the development of a physical education learning model based on simple games to improve basic locomotor movements is very suitable for use in physical education learning. A learning model based on traditional games can provide a more student-centered and situational learning perspective. This model empowers students through team interaction, improving their thinking and problem-solving skills in game situations. By participating in actual game scenarios, students can learn how to compete fairly, develop lifelong learning skills, and bridge the gap between acquired skills and real-world sports competitions (Chu, Chen, Wang, and Su: 2022). Additionally, the use of traditional games in physical education can help students develop a better understanding of movement goals and appropriate movement sequences. This aligns with the principles of motor learning, which emphasize the cognitive stage of skill acquisition. In this stage, learners consciously develop an understanding of what to do and make explicit efforts to learn. Furthermore, the development of locomotor skills is crucial

for children's physical improvement and overall development. Neglecting the stimulation of children's movement development can hinder motor coordination and impact their movement skills. By incorporating traditional games that focus on locomotor skills, physical education can provide a structured and effective approach to improving basic movement abilities. In conclusion, the development of a physical education learning model based on traditional games to improve basic locomotor movements is feasible because it promotes student-centered learning, enhances critical thinking and problem-solving skills, and addresses the importance of locomotor skill development in children's overall growth and physical improvement (Irawan, Sutaryono, and Permana: 2021).

Based on the results of student assessments, it shows that the traditional game-based PJOK learning model which was developed to improve locomotor movement and overall cooperation is stated to be very good. It can be concluded that the game model can be used to develop locomotor movement and cooperation skills for elementary school level students. Of course, this development product must always be developed and refined in the future by adapting it to the circumstances and learning needs at that time. This is reinforced by research conducted by (Tan, Nonis, and Chan: 2020) which states that This suggested that irrespective of structured traditional games or unstructured free play, child's play has positive benefits on the development of motor skills especially for children with poorer motor skills.

Basically, traditional games have a positive impact on students' motor skills and contribute to their overall development because they offer benefits such as physical activity, social interaction, cognitive stimulation, and cultural preservation. By incorporating traditional games into educational environments, educators can improve students' motor skills while increasing their sense of enjoyment and cultural awareness (Musa, Charles, Abdullah, Kosni, and Maliki: 2017).

CONCLUSION

The results showed that the traditional game-based Physical Education learning model developed is suitable for use in learning models. Based on the results of the students, it showed that the physical education learning model based on simple games which was developed to improve locomotor movements was very good. It can be concluded that the game model can be used to develop locomotor movement abilities for elementary school level students.

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