

Application Of Peer Teaching Learning Methods To Basketball Free Throw Shooting Learning Outcomes

Jordan Agung Mubarak¹, Muchamad Arif Al Ardha², Faridha Nurhayati³,
Dwi Lorry Juniarisca⁴

¹⁻⁴Surabaya State University

Address: Surabaya State University, Jl. Tongue Wetan, Tongue Wetan, Kec. Lakarsantri, Surabaya city, East Java 60213

Author correspondence: muchamadardha@unesa.ac.id

Abstract. *PJOK plays an important role in movement activities for students at school. In the learning process, there are learning methods that can be used, one of which is the peer teaching method. PJOK material in junior high school has big ball games, one of which is basketball. This study aims to find out whether the application of peer teaching learning methods can improve basketball shooting free throw learning outcomes. This study used an experimental method with a randomized control group pre-test post-test design. The instruments used in this study are knowledge and skill tests. The study sample used cluster random sampling with class VIII A as the experimental class and VIII E as the control class with a total of 64 students. The results showed that the use of peer teaching learning methods can improve the learning outcomes of shooting free throw basketball grade VIII at SMP. The value of increasing learning outcomes in the medium category, namely knowledge increased by 54.51% and skills by 42.40%.*

Keywords: *physical education, shooting learning, adolescent, students*

INTRODUCTION

PEducation is an effort carried out in a planned manner and aims to create a learning process in a pleasant atmosphere(Westerlund, 2023). Education also determines the progress of a country(Aziizu, 2015). Education is also to improve the quality of human self-development in physical and spiritual aspects(Berg & Lepp, 2023). Active education aims to develop one's own potential, including cognitive, affective and psychomotor(Pristiwanti et al., 2022). Cognitive is an aspect of education that discusses a student's knowledge(Yoshida et al., 2022). Affective is an aspect within the scope of education that explains the attitudes of students(Marcuzzi & Romero-Naranjo, 2017). Aspects that exist in education and explain the movement skills of students, namely psychomotor(Ulfah & Arifudin, 2021). Physical education is very important because it can improve students' fitness(Gadais et al., 2023).

Physical Education (PE) plays an important role in movement activities for students at school which aims to increase fitness in social, physical, mental and emotional development, as well as developing sports that can produce achievements for students in sports in Physical Education(Oktaviani & Wibowo, 2020). PE has various sports materials including: big ball, small ball, athletics, gymnastics, fitness and healthy lifestyles(Prabowo et al., 2022). PE is a movement activity carried out in school(Gray et al., 2023). Physical Education (PE) in Indonesia is implemented at 3 levels of education. Starting from Elementary School, Middle

School, to High School. At the junior high school level, currently in the independent curriculum there is a major learning material for football, namely basketball.

Basketball is a popular sport in Indonesia with many facilities available in almost every school, so basketball can be popular with students at junior high school level. Basketball is a group game played by two teams of five players by playing together with one teammate to put the ball into the ring.(Kayama et al., 2023). PE learning at the junior high school level places more emphasis on developing specific movements for the sport of basketball, including: passing, dribbling and shooting.

In the game of basketball, the specific shooting movement is a throw that is important to get points by shooting the ball into the opposing team's ring(Büttner et al., 2024). Specific movements such as passing, dribbling and shooting aim to get the opportunity to get points, but to get more points you have to shoot(Utomo & Kartiko, 2015). Shooting in basketball can be divided into several types, including: free throw shooting, one hand set shoot, lay up shoot, jump shoot, and hook shoot.(Tan et al., 2020). Shooting free throws which provide an opportunity to add points in the match. In a free throw, there is no opposing player blocking the ball(Wei & Arnosti, 2015). A free throw is a shot obtained from a foul on the opposing team(Angraini et al., 2020). Free throws are also called free throws because they are done without interference from the opposing team at the free throw line on the basketball court(Shooli et al., 2024). For every free throw that makes it into the ring, the opponent gets one point. Success in executing a free throw will also affect when the ball enters the ring. In executing a free throw you must master skill, calm, concentration, confidence and practice habits.(Asadi et al., 2023). Practicing in sports can be done with teachers or coaches or peer teaching (peers) who have mastered and understand the specific movements in basketball.

Peer Teaching is another name for peer tutoring where students provide knowledge or teach their own friends, so students become teachers (tutors) or what is called peer teaching(Yusup et al., 2022). The peer teaching learning method (peer tutor) is a strategy in learning to respect each other and understand what has been taught by their own peer tutors(Hu et al., 2023). In the peer teaching learning method, students who have more expertise in the subject matter and understand it compared to other students act as tutors.(Ahern et al., 2023). Providing material through peer teaching to friends will be more likely to be accepted than by teachers, because students are more likely to understand and be familiar with their friends than their teachers.(Febianti, 2014).

From the results of the research gap analysis that has been carried out, research related to the learning outcomes of free throw shooting in basketball learning using the peer teaching learning method has never been carried out by previous researchers. In this research, the emphasis is on basketball shooting knowledge and skills aspects by assessing the product by carrying out 10 free throw shooting attempts. In research on peer teaching learning methods in basketball free throw shooting, it can be concluded that product assessment by conducting 10 free throw shooting trials is a new research instrument. This research aims to find out whether the application of peer teaching learning methods can improve basketball free throw shooting learning outcomes.

THEORETICAL STUDY

In the learning process, there are many types of learning methods that can be used by teachers in delivering material to students. One type of learning method that can be used for the learning process in PJOK is the peer teaching method. Peer teaching learning strategies can be used in the classroom or outside the classroom, such as sports. Peer teaching method or often called peer tutoring has the same goal as other methods, namely to create academic and non-academic success for students, this is important for the quality of education.

Peer teaching has many benefits and can be seen as a way of learning that does not cause stress, because students do not hesitate to make mistakes in front of their friends during learning rather than making mistakes with the teacher. (Torres et al., 2023). Supporting this theory, research by (Akbar & Rahayu, 2023) proves that the peer teaching learning method can improve basketball passing. (Ardiwansa & Rahayu, 2022) using the peer teaching model can improve football passing results with significant pre-test and post-test results. Study (Purnomo et al., 2021) Peer teaching learning can improve learning outcomes for class XI basketball dribbling and passing with the average score on the posttest being greater than the pretest.

RESEARCH METHODS

Study Design

Quasi-experimental method with a randomized control group pre-test post-test design. This method uses 2 sample groups with 1 control group and 1 experimental group. The experimental group was given treatment. The resulting output is in the form of pretest and posttest results. The two values from the two groups will be analyzed to determine the differences and improvements that occur during treatment.

Study Participants

This study used class 8 with a total of 64 students in junior high school with 33 male students and 31 female students. With an average age range of 12-13 years. The sampling technique used was cluster random sampling with sampling carried out by lottery witnessed by the PJOK teacher.

Instruments

This research uses knowledge and skills instruments. In the knowledge aspect, 5 descriptive questions are used. The skill aspect is an update in the research instrument by carrying out 10 free throw shooting attempts. This knowledge and skills instrument has assessment norms that have been validated by the examining lecturer.

Table 1. Knowledge

No	Capaian Pembelajaran	Materi	Indikator Soal	Level Kognitif	Bentuk Soal
1	Peserta didik dapat menganalisis fakta, konsep, dan prosedur dalam melakukan berbagai keterampilan gerak spesifik berupa permainan dan olahraga, aktivitas senam, aktivitas gerak berirama, dan aktivitas permainan dan olahraga air (kondisional).	Shooting Free Throw Bolabasket	Peserta didik dapat menyebutkan 3 macam shooting bolabasket.	L1	Uraian
2			Peserta didik dapat menjelaskan terkait shooting bolabasket.	L1	
3			Peserta didik dapat menjelaskan terkait shooting free throw bolabasket.	L1	
4			Peserta didik dapat mengurutkan gambar gerakan shooting free throw bolabasket dengan benar.	L2	
5			Peserta didik dapat membedakan shooting free throw dengan three point shoot bolabasket.	L2	

Table 2. Skill Instrument Norms

Skor	Keterangan
3	Bola berhasil masuk ke dalam ring.
2	Bola menyentuh ring tetapi tidak masuk ke ring.
1	Bola tidak masuk dan tidak menyentuh ring.

$$\text{Value} = \frac{\text{Skor perolehan}}{\text{Skor maksimal}} \times 100$$

Research Procedures

The research was carried out for 5 weeks with 1 meeting held every week. The first meeting carried out a pre-test, the second meeting until the fourth meeting carried out treatment, and the fifth meeting carried out a post-test. Pre-test and post-test data collection was carried out using instruments that had been validated by the examining lecturer. Pre-test data collection was carried out before treatment was given. In the experimental group the peer teaching learning method was treated, while in the control group the conventional learning

method was used. After being given treatment for three meetings, a post-test or final data collection was carried out using the same instrument.

Statistical Analysis

The data analysis technique in the research used SPSS Statistics 26. Normality tests and descriptive tests were carried out using Kolmogorov Smirnov. Normal data is indicated by a significance value ($\text{sig} > 0.05$). Meanwhile, the data is not normal, the significance value is ($\text{sig} < 0.05$). Homogeneity test with a significance value ($\text{sig} > 0.05$) with homogeneous data, while a significance value ($\text{sig} < 0.05$) with inhomogeneous data.

The T test was carried out for different samples using the Paired Sample T Test while the data was not normal using Wilcoxon. The T test results are shown with a p-value < 0.05 if there is a significant difference. Meanwhile, if the p-value is > 0.05 then there is no significant difference. In the Wilcoxon test, it will be known that there is an increase (positive), a decrease (negative), and there is no decrease or increase (ties). This research shows that there is a difference or an increase in the pretest and posttest.

Data percentage calculations were carried out to see how much application peer teaching gave to the learning outcomes of basketball free throw shooting. This calculation is carried out using the N-Gain test with an increase value classification, namely:

Table 3. Classification of Improvement Values

Increase Value Range	Category
70.0% and above	Tall
30.0% - 69.9%	Currently
Below 30.0%	Low

RESULTS AND DISCUSSION

Normality test

The results of the normality test show that the knowledge and skills data values are not normally distributed. This is indicated by a p-value below 0.05 ($\text{sig} < 0.05$). The overall results of descriptive statistical tests and normality are in the following table (Table 4).

Table 4. Normality test

Variable	N	Mean	elementar y school	Min.	Max.	p-value
<i>Experimental Knowledge Pretest</i>	32	56.25	13.37	31.25	81.25	0.02
<i>Experimental Knowledge Posttest</i>	32	81.64	7.60	62.50	93.73	0.00
<i>Control Knowledge Pretest</i>	32	52.53	6.32	37.50	62.50	0.00
<i>Posttest Knowledge Control</i>	32	66.97	12.94	37.50	87.5	0.01
<i>Experimental Skills Pretest</i>	32	46.87	8.79	33.33	63.33	0.00
<i>Experimental Skills Posttest</i>	32	68.85	9.67	53.33	86.66	0.00
<i>Control Skills Pretest</i>	32	44.77	8.24	33.33	63.33	0.00
<i>Control Skills Posttest</i>	32	50.72	8.94	33.33	73.33	0.00

*Sig > 0.05

Homogeneity Test

The homogeneity test results show that the knowledge p-value is 0.00 ($\text{sig} < 0.05$) or the data is not homogenously distributed. Meanwhile, the skill values show p-values of 0.38 and 0.13 ($\text{sig} > 0.05$) or homogeneous distribution of data. The overall results of the homogeneity test can be seen in the following table (Table 5).

Table 5.Homogeneity Test

Variables		p-Value
Knowledge	Knowledge Pretest	0.00
	Knowledge Posttest	0.00
Skills	Skills Pretest	0.38
	Skills Posttest	0.13

*Sig > 0.05

Pair Difference Test

The difference test uses the Wilcoxon test because the data is not normally distributed in knowledge and skills. The results of the Wilcoxon test show that there is a difference between the pretest and posttest. The increase in the knowledge score of the experimental group showed an increase in learning outcomes of 31 students, while a decrease in learning outcomes was 0 students and the same learning outcomes were 1 student. With a p-value of 0.00 ($\text{sig} < 0.05$). Meanwhile, the skill scores showed an increase in learning outcomes of 32 students, while a decrease in learning outcomes was 0 students and the same learning outcomes were 0 students. With a p-value of 0.00 ($\text{sig} < 0.05$).

In the control group, knowledge results showed an increase in learning outcomes of 27 students, while a decrease in learning outcomes was 5 students and the same learning outcomes were 0 students. With a p-value of 0.00 ($\text{sig} < 0.05$), while skills show an increase in learning outcomes for 25 students, while a decrease in learning outcomes for 2 students and the same learning outcomes for 5 students. With a p-value of 0.00 ($\text{sig} < 0.05$).

Table 6.Wilcoxon Difference Test

Variables		Ranks	N	p-Value
Experiment	Knowledge	negative	0	0.00
		Positive	31	
		Ties	1	
		Total	32	
	Skills	negative	0	0.00
		Positive	32	
		Ties	0	
		Total	32	
Control	Knowledge	negative	5	0.00
		Positive	27	
		Ties	0	
		Total	32	
	Skills	negative	2	0.00
		Positive	25	
		Ties	5	
		Total	32	

*Sig < 0.05

Mann Whitney test

From the results of the Mann Whitney test above, it can be seen that the p-value is 0.00 (sig < 0.05), so it can be said that there is a difference in the value of knowledge and skills in the experimental class and the control class.

Table 7.Mann Whitney test

Variables	N	p-Value
Knowledge	32	0.00
Skills	32	0.00

*Sig < 0.05

Test N - Gain

The results of the N-Gain test show that the percentage increase in learning outcomes in knowledge and skills in the experimental group is greater than in the control group. With the percentage increase in the experimental group, knowledge increased by 54.51% and skills by 42.40%, indicating that the results of the N-Gain test were a moderate increase. Meanwhile, the control group showed that knowledge learning results increased by 10.84% and skills by 28.57%, indicating that the N-Gain test results had a low increase.

Table 8.N-Gain Test

Variables		N-Gain Percent
Experiment	Knowledge	54.51%
	Skills	42.40%
Control	Knowledge	10.84%
	Skills	28.57%

This research has a background inThe learning process still uses conventional methods, where the method used by the teacher uses the lecture method. The lecture method is the delivery of material by the teacher who focuses on the learning process. Where in learning basketball students still find it difficult to perform free throw shooting movements. This difficulty occurs at the implementation stage when shooting free throws where there are still many students who are not optimal in carrying out these stages, thus making the free throw shooting results less than optimal with the ball not reaching the ring and the ball deviating from the target ring. Thereforegiven a solution to this problem using peer teaching or peer tutoring learning methods. Peer teaching method according to(Megawati & Tanta, 2018)has the advantage of providing material that will be more easily accepted because it uses the same language as friends, has a calm atmosphere, strengthens friendships, there is no fear when making mistakes when doing sports in front of friends, the confidence to try when being taught by friends increases and more open because of fellow friends.

Research with a randomized control group pretest posttest design, which aims to find out whether the application of the peer teaching method can improve learning outcomes in basketball free throw shooting. Based on the research results, the value of students' knowledge

and skills increased. The increase in the knowledge score of the experimental group showed an increase in learning outcomes of 31 students, while a decrease in learning outcomes was 0 students and the same learning outcomes were 1 student. With a p-value of 0.00 ($\text{sig} < 0.05$). Meanwhile, the skill scores showed an increase in learning outcomes of 32 students, while a decrease in learning outcomes was 0 students and the same learning outcomes were 0 students. With a p-value of 0.00 ($\text{sig} < 0.05$).

In the control group, knowledge results showed an increase in learning outcomes of 27 students, while a decrease in learning outcomes was 5 students and the same learning outcomes were 0 students. With a p-value of 0.00 ($\text{sig} < 0.05$), while skills show an increase in learning outcomes for 25 students, while a decrease in learning outcomes for 2 students and the same learning outcomes for 5 students. With a p-value of 0.00 ($\text{sig} < 0.05$).

The percentage increase in learning outcomes in knowledge and skills in the experimental group was greater than in the control group. With the percentage increase in the experimental group, knowledge increased by 54.51% and skills by 42.40%, indicating that the results of the N-Gain test were a moderate increase. Meanwhile, the control group showed that knowledge learning results increased by 10.84% and skills by 28.57%, indicating that the N-Gain test results had a low increase.

Supported by previous research (Yusup et al., 2022) that there is an influence on class VIII A free throw shooting at State Junior High School 1 Purwasari Karawang. And (Ardiwansa & Rahayu, 2022) using the peer teaching model can improve football passing results with significant pre-test and post-test results. Study (Purnomo et al., 2021) Peer teaching learning can improve learning outcomes for class XI basketball dribbling and passing with the average score on the posttest being greater than the pretest.

Learning methods According to (Pritandhari, 2017) The activities that teachers and students use to learn are called learning methods. Learning strategies are a way to achieve learning targets (Xu et al., 2023). Learning outcomes really depend on how the teacher shows the use of the learning strategies used (Amirudin & Suryadi, 2016).

The peer teaching (peer tutor) learning method is a type of cooperative learning that uses peer learning (Ali, 2021). The concept of peer teaching learning is a learning method carried out by friends themselves as tutors to help friends who are experiencing difficulties in academic and non-academic terms (Nwaesei & Liao, 2023). Peer teaching has many benefits and can be seen as a way of learning that does not cause stress, because students do not hesitate to make mistakes in front of their friends during learning rather than making mistakes with the teacher. (Torres et al., 2023).

This research has research limitations so that this research is not extensive. Firstly, this research is only limited to researching improving students' abilities in basketball free throw shooting learning materials in physical education through the peer teaching method. Second, this research only examines the assessment of knowledge and skills. Third, the research time carried out was relatively short with 5 meetings, and 1 meeting held every week. This could be a factor in learning outcomes not experiencing significant improvement.

CONCLUSIONS AND RECOMMENDATIONS

Use of methodsPeer teaching learning can improve learning outcomes for class VIII basketball free throw shooting in junior high schools. This is proven through the significance results of the difference test and the calculation of the N-Gain test percentage. There is an increase in learning outcomes using peer teaching learning methods. Classification of improvement valuesnamely moderate, with knowledge learning outcomes increasing by54.51% and skills 42.40%. Meanwhile, in the control group, knowledge learning results increased by 10.84% and skills by 28.57%, indicating that the N-Gain test results had a low increase. Thus, there is a significant difference between the control class and the experimental class, but the increase in the experimental class is greater than the control class. The researcher provides suggestions for future researchers, they should use different materials, so that the comparisons can be known.

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