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Submission date: 21-Aug-2022 08:00AM (UTC+0700)

Submission ID: 1884810239

File name: 11._Carles_Wali_OK_287.pdf (463.75K)

Word count: 6993

Character count: 38864

The effect of the cooperative learning model on basketball games to improve junior high school students' learning

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Received 02 October 2021; Accepted 13 July 2022; Published 21 August 2022
Ed 2022; 7(2): 287-299

ABSTRACT

This research is motivated by the low value of student participation in the learning process of the basketball game, while another problem is that the model used by the teacher is not appropriate. Learning outcomes of junior high school students and to determine the effectiveness of the cooperative learning model of basketball learning in improving basketball learning outcomes of junior high school students. The type of method in this research is quasi-experimental. The instruments used to collect data are questionnaires, student assessment rubrics, and observations. The design in this research is One Group Pretest-Posttest Design. Data collection techniques in this study are interviews, preliminary research and offline questionnaire distribution. The place in this research is SMP Muhammadiyah 2 Yogyakarta. Data analysis in this study is tested using t-test which includes hypothesis testing, homogeneity test, and normality test. The results of this study indicate that there is an effect of the cooperative learning model on improving the learning outcomes of junior high school students about the game of basketball. Thus the hypothesis in the study is accepted.

Keywords: Cooperative; basketball; student; learning outcomes



[https://doi.org/10.25299/sportarea.2022.vol7\(2\).7808](https://doi.org/10.25299/sportarea.2022.vol7(2).7808)



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How to Cite: Afif, R., Wali, C. N., & Sukoco, P. (2022). The effect of the cooperative learning model on basketball games to improve junior high school students' learning. *Journal Sport Area*, 7(2), 287-299. [https://doi.org/10.25299/sportarea.2022.vol7\(2\).7808](https://doi.org/10.25299/sportarea.2022.vol7(2).7808)

Authors' Contribution: a – Study Design; b – Data Collection; c – Statistical Analysis; d – Manuscript Preparation; e – Funds Collection

INTRODUCTION

Education that is conscious and planned in creating a learning atmosphere and learning process to develop self-potential which includes, religious spirituality, self-control, personality, intelligence, noble character (Alvunger et al., 2017; Ghimire & Rao, 2013; Skovsmose, 2016). In general, education is a very appropriate choice for a human being in improving psychomotor, cognitive, and affective aspects, especially the dominant cognitive aspects in the world of education, both at the elementary school level to the tertiary level (De Rosnay & Hughes, 2006; Eastham, 2018; Russ et al., 2020). Education is a benchmark for every individual in knowing all aspects of education (Nwabuko et al., 2020; Patrinos & Psacharopoulos, 2020). The educational process continues to develop from time to time, along with the development of increasingly modern times, and education is always related to formal education (Karlsson, 2020). Education is an effort taken by an individual related to the knowledge, skills, and habits of a group of people from generation to generation (Din et al., 2020; Murillo-Zamorano et al., 2019). So that education often occurs under the guidance of others in this case

are teachers, lecturers, and so on. Through education an individual will experience a formative effect on the way he thinks, feels, and has good knowledge (Lamrani & Abdelwahed, 2020). Teachers or instructors have a vital role to provide positive motivation to students so that the learning process is not rigid, silent, and boring (Glassmeyer et al., 2020; Hakvoort et al., 2020; Julia et al., 2019). The learning process is a process of knowledge transfer between individual teachers acting as a center for providing detailed, structured, and simple scientific information so that it is easily understood by students. (Carreras & Kaur, 2011; Fan et al., 2020; Yousefi & Mardian, 2020).

Every formal education throughout the world, including Indonesia, is obligated to have physical education subjects that apply at the elementary, junior high, high school level, and even at the university level (Bernabé et al., 2018). Physical education is very complex according to the functions of the three inherent aspects of a human being, namely cognitive, affective, and psychomotor aspects, but not only includes these three aspects but the role of physical education can help the growth and development of students, strengthen muscles, and bones (Montero-Carretero & Cervelló, 2020; R. Bailey, 2013). So do not be surprised if physical education is needed in the learning process to develop motor skills, knowledge and healthy living behavior, sportsmanship, active and emotional intelligence (Stolz & Pill, 2014; Tolgfors, 2020).

The cooperative learning model becomes one of the learning models that are required for students to learn in small groups with 4 to 6 members then learn collaboratively, and in heterogeneous groups (Poiner & Drake, 2021). If the students are divided into small groups, the learning process will run optimally and make it easier for the teacher to control the students (Meo, 2013; Prasetyo et al., 2019). The cooperative learning model emphasizes the presence of peers to interact with each other between students to solve a problem or task given by a teacher (Bodsworth & Goodyear, 2017; Hartatiningsih, 2020). And this learning model must be one of the most appropriate choices in the learning process of any discipline, including sports science.

Basketball as a group sport has 5 players then compete with each other to score points by putting the ball into the opponent's basket (Nutbeam, 2019; Vamos et al., 2020). The originator of this game is Dr. James Naismith in 1891. The game of basketball is very popular with European people, such as the United States, Latin America, and southern Europe (Halabchi et al., 2016). Can be played indoors and outdoors (Gaca, 2009). The characteristic of this game is that the tempo of the game is very fast compared to other sports such as volleyball, football, and so on (Pourgharib Shahi et al., 2020). However, this game is not easy to play, because it has various basic techniques that have different levels of difficulty. Therefore, in the process of training or learning, teachers need to use the right method.

Through the results of initial observations, the researchers conducted interviews with sports teachers, and the main problem in this study was the frequent occurrence of students piling up or queuing in participating in learning the basketball game, so that students would experience laziness to take physical education lessons (Gull & Shehzad, 2015). The other problem is that learning is not effective and efficient so that the learning process is not optimal, because the method used is not appropriate, and is not in accordance with learning needs (Ariani & Agustini, 2018). So it takes the foresight and sensitivity of a teacher in choosing the right learning method. Several factors that influence student learning outcomes are low on basketball game material, namely teacher, student, method, material, and environmental factors (Lee et al., 2016). From the results of interviews with two teachers, it was confirmed that the learning model was one of the factors to improve the learning outcomes of the students.

Cooperative learning is one of the learning models that can solve a problem in the learning process among fellow students (Tanrı & Erku, 2018). Cooperative learning is a learning model that requires students to play an active role during the learning process, and the students are divided into small groups (Ito, 2019). The cooperative learning model can be formed in larger groups by involving quite a lot of students (Burgueño & Medina-casaubón, 2020). Cooperative learning can be applied to students in the learning process, but the formation of small and large groups is not often done, can be done 4 times a month (Fitri et al., 2017; Wei, 2020). Previous research has shown that cooperative learning models can improve student learning outcomes, but previous studies have examined different disciplines from this research (Kristin, 2016). Another study reported that the cooperative learning model was not the main choice for teachers in the big ball game learning process, this was because most of the teachers did not know the effectiveness and efficiency of the model

(Suzuki & Nagata, 2013). In addition, recent research on cooperative learning models reports that cooperative learning models have no effect on overall student learning outcomes (Lathifah et al., 2019; Qazi et al., 2020). Therefore, this research is important to do as a way to reveal the problems in the research. In addition, some studies only focus on improving learning outcomes in one domain, namely cognitive (Ponzetti, 2015), and reduce boredom in the learning process (Chuenpraphanusorn et al., 2017). Nevertheless there is still little literature that discusses cooperative learning models in the field of sports, especially ball game material, so this research is important to do.

Previous research has found that cooperative learning models can improve student learning outcomes and can increase creativity and aggressiveness in the learning process (Kristin, 2016). Several studies have examined basketball games that use other learning models to increase effectiveness in shooting at goal (De Corte, 2016). then use cooperative learning methods to improve the critical thinking patterns of seventh grade junior high school students (Wen et al., 2020).

Although there have been many studies on this model, there are no reports that report the effect of cooperative learning methods on student learning outcomes in basketball games (Santoso et al., 2019). In addition, previous research only examined one aspect, for example affective and did not compare the models simultaneously (Stephani et al., 2017). Research related to this model is expected to increase awareness for teachers about cooperative learning methods to improve various aspects of students, such as learning outcomes, aggressiveness, and effectiveness and efficiency in the learning process. The urgency of this research has an impact on science in the field of learning methods, so that later teachers and students can use this learning model to improve learning outcomes in the learning process, especially physical education subjects with basketball game material (Povananti, 2019). This study aims to test the effectiveness and efficiency of cooperative learning models to improve student learning outcomes in basketball games. The result of the research is the development of cooperative learning model in basketball learning to improve junior high school students' learning outcomes in the form of a cooperative learning model of physical education learning guide book.

METHOD

The method in this study is a quasi-experimental quantitative approach (Gopalan et al., 2020). A quasi-experiment or quasi-experiment is an empirical intervention study used to estimate causal effects on the target population without random assignment (Siedlecki, 2020). Simply put, experimental research is an attempt by researchers to find out the consequences that occur on the subject in the study after being given an action or treatment (Waardenburg et al., 2020).

The design in this research is One Group Pretest-Posttest Design. The pretest is related to the results that are known before giving treatment to the subject, while the posttest is the result that is known after the subject has been given the treatment. The population in this study amounted to 60 junior high school students, then all populations are used as subjects in the study. The instrument in this research is in the form of offline questionnaire distribution. Data collection techniques in this study are interviews, preliminary research and offline questionnaire distribution. The place in this research is SMP Muhammadiyah 2 Yogyakarta. The time required for this research is 3 months starting from March 2021 to June 2021. As for the data in this study are tested using a t-test which includes hypothesis testing, homogeneity test and normality test.

RESULTS AND DISCUSSION

This study aims to determine whether the cooperative learning model has an effect or not in improving the learning outcomes of junior high school students. The data in this study are in the form of pre-test and post-test and then t-test which included: normality test, homogeneity, and t-test. The table and figure below is a description of the results of the basketball learning data research based on the pretest and posttest learning cooperative learning models.

Table 1. Pretest Results of Basketball Learning Outcomes Based on Cooperative Learning Models

Interval	Category	Absolute	%
> 50.55	high	10	16,66
40.52-50.56	moderate	15	25
< 30.52	low	35	58,34
Total		60	100

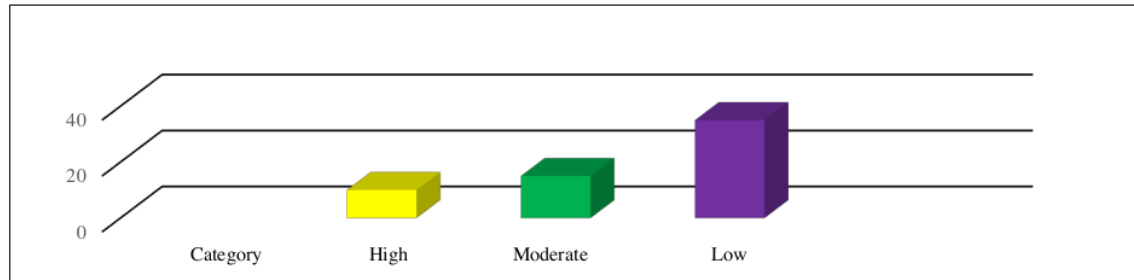


Figure 1. Diagram of the Results of the Pretest of Student Learning Outcomes for Basketball Based on Cooperative Learning

Based on the table and figure above, it can be seen that the pretest results of junior high school students' learning outcomes about basketball material based on cooperative learning models are as follows: 10 students (16.66%) are in the high category, 15 students (25%) are in the medium category, and 35 students (58.34%) are in the low category. After describing the results of the pretest of student learning outcomes about basketball material based on cooperative learning models, then below are the posttest results of junior high school students' learning about basketball based on cooperative learning models then the minimum score is 21.00, the maximum value is 41.00, the maximum score is 41.00, the average is 33.8000, the mean is 45.149, the mode value is 55.78, and the standard deviation is 3.49721. Furthermore, the results of the study are described and then classified based on the categories in the form of tables and figures as follows:

Table 2. Posttest Results of Basketball Learning Outcomes Based on Cooperative Learning Models

Interval	Category	Absolute	%
> 50.63	high	45	75
40.52-50.56	moderate	10	16,66
< 30.52	low	5	8,34
Total		60	100

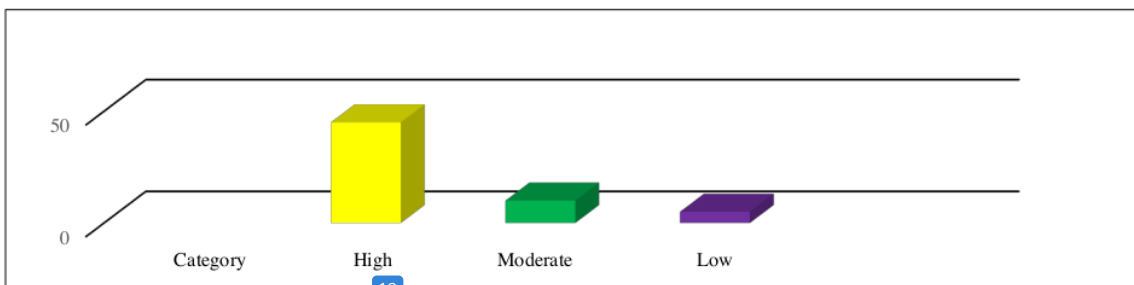


Figure 2. Posttest Result Diagram of Student Learning Outcomes for Basketball Based on Cooperative Learning

Based on table 2 and figure 2 above, it can be seen that the posttest results of junior high school students' learning about basketball based on cooperative learning are as follows: 75% (45 students) are in the high category, 16.66% (10 students) are in the medium category, and 8% (5 students) are in the low category. Then

the results of the pretest and posttest were tested in three stages, namely normality, homogeneity and t-test. The three tests can be described as follows:

1. Normality Test

The criteria used to determine whether a data is normal or not is if $X^2_{count} < X^2_{table}$ then the data is declared normal. The results of the normality test can be seen in table 3 below:

Table 3. Normality Test Results

Df	Df	X^2_{Hit}	X^2_{Tabel}	P	Sig. 5%	Description
Pretest	60	24,200	30,10	0,721	0,05	Normal
Posttest	60	53,500	30,10	0,992	0,05	Normal

Based on the results in table 3 above, it is known that the pretest and posttest data in this study contributed normally. The criteria used to determine whether a test is homogeneous or not is if $p > 0.05$ and $F_{Hit} < F_{Table}$, then the test is declared homogeneous. Homogeneity test results can be seen in table 4 below.

2. Homogeneity Test

Table 4. Homogeneity Test Results

Test	Df	F_{Table}	F_{Hit}	P	Sig. 5%	Description
Student Learning Outcomes	8,28	11,81	0,571	0,995	0,05	Homogeneous

Based on the result on Table 4 above it is known that varians is homogeneous.

3. T test

The t-test was conducted to determine whether cooperative-based learning had an effect on improving junior high school students' learning outcomes on basketball learning. The results of the t test can be seen in table 5 below.

Table 5. T test Results

Pretest-Posttest	Df	T_{Table}	T_{Hit}	P	Description
Student Learning Outcomes	59	5,790	18,313	0,000	Thereis Influence

Based on the results of the t-test, the t_{count} value (18.313) > t-table (5.790), and the p-value < 0.05. Thus H_0 is accepted, so that the hypothesis in this study states that there is an effect of cooperative-based learning on improving basketball learning outcomes for junior high school students. Based on the results of the t-test described in table 5 above, it can be concluded that the learning process using cooperative has an effect on improving the learning outcomes of junior high school students about basketball material. Thus, cooperative-based learning has an effect on improving the learning outcomes of junior high school students about basketball material.

The increasingly modern era is not one of the ways to improve a student's learning outcomes for the materials provided by a teacher, for example in physical education subjects, especially basketball games (Bandoc et al., 2017; Slamet, 2019). One of the factors that play an important role in improving learning outcomes about the materials taught by the teacher is the learning model used by the teacher in the learning process (Amin et al., 2020; Hermawan et al., 2020). At first glance, the learning models offered in the world of education are very diverse, but the accuracy and clarity of a teacher in choosing and using learning media is in accordance with the student's criteria. Learning models that are often used in sports learning are direct learning models, Contextual Learning Models, Cooperative Learning Models, Team Games Tournament learning models, and Teaching Games for Understanding. These learning models are good alternatives to be applied or used in the learning process, but most teachers do not choose the right learning model to convey material to students (Astuti et al., 2021; Desnita et al., 2021; Rahayu & Suningsih, 2018).

Basketball is considered a unique sport because it is created accidentally by a priest (González-Espinosa et al., 2021; Moore et al., 2021). In 1891, Dr. James A. Naismith a Canadian pastor who teaches on a faculty for professional students at the YMCA (Young Men's Christian Association) a Christian youth organization,

in Springfield, Massachusetts, must make games in a closed room to fill students' time during the holidays winter in New England (Erčulj et al., 2020; Montgomery et al., 2021). Because it is done indoors or in a building, the idea arises that the game should be a game that is not too rough, with no kicking elements, and tackles, interesting, and not too difficult to learn (Meisel et al., 2022; Ott & Santos, 2020). For that it is necessary to remove the goal and replace it with a basket whose place is above so that to enter the ball, the direction of the ball must form a parabola. Nismith invented the game now known as basketball on 15 December 1891 (Chang et al., 2020; Padua et al., 2019). In its development two years later James A. Naismith decided that the best number in a team was 5 people.

These results in learning is a learning model where students learn and work in a collaborative small group consisting of 5 people with a heterogeneous group structure (Johnson & Johnson, 2014; Purwanto et al., 2020; Slavin, 1980). The cooperative learning model focuses on the use of small groups of students together in maximizing learning situations to achieve learning goals (Rahayu & Sukardi, 2021; Tran, 2019). In cooperative learning there are several positive elements that are very important in the lives of students, namely having personal and group responsibility, mutual trust between individuals and other individuals, interacting with each other, solving problems together and evaluating each other in groups (Erbil, 2020; Hwang et al., 2012; Maryeni et al., 2020). The results of this study are in line with the results of previous studies which also wanted to know about the impact of the cooperative learning model on certain subjects or materials. As with the research that has been done (Arifin & Aprisal, 2020; Ilhamdi et al., 2020; Ribut, 2021; Widarta, 2020).

This study still has limitations in several aspects, namely: the place of research, the research time is quite short, the subjects and samples used are still few and the training model still focuses on one educational model. The hope of the researcher is that there are writers who can continue this writing in a wider direction and involve many places or junior high schools, using many subjects and samples, using learning models that are more than one learning model and the duration of the research is long. Another hope from the researcher is that this research can be useful in the field of sports education, especially the world of sports education, being an alternative to using this learning model in delivering basketball learning materials and other materials in junior high school education.

CONCLUSION

The results of this study can be concluded that there is a significant effect on junior high school students after practicing using the cooperative learning model, this is evidenced by the results of the t-test obtained $6.8.313 > t\text{-table } (5.790)$, and $p\text{-value} < 0.05$. Thus H_0 in this study is accepted. Based on this hypothesis, there is an effect of cooperative learning model on improving junior high school students' learning outcomes about basketball game material. The results of this study can also be used as an evaluation guide to improve the learning process in sports education, especially the practical learning process. Thus the cooperative-based learning model has an effect and can improve student learning outcomes about the game of basketball.

ACKNOWLEDGEMENTS

This research received no specific grant from any funding agency in the public, commercial, or not-for profit sectors.

CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

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