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Application of Jigsaw Type Cooperative Learning Model to Improving the Physical Exercise Students Volleyball at Junior High School 1 Sajoanging

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Abstract

The purpose of this study was to determine the improvement of learning outcomes squat-style long jump through the Jigsaw cooperative learning model for students who took extracurricular volleyball games at Junior High School 1 Sajoanging, Wajo Regency, South Sulawesi Province. The approach in this research is a quantitative descriptive approach with quasi research type. The implementation of this research is focused on two variables, namely the Jigsaw cooperative learning model and the squat style long jump learning outcomes. This research was conducted at Junior High School 1 Sajoanging, Wajo Regency, South Sulawesi Province. The research subjects were 25 grade VII students. The data collection techniques used were observation, tests and documentation. The data analysis technique used is qualitative and quantitative descriptions. Based on the results of the study, it can be concluded that the learning process using the Jigsaw cooperative learning model has been proven to be effective in improving the learning outcomes of the squat style long jump of students who take extracurricular volleyball games at Junior High School 1 Sajoanging, Wajo Regency, South Sulawesi Province.

Keywords: Cooperative Learning, Jigsaw Type, Physical Fitness.

1. Introduction

Physical education taught in schools has a very important role, which is to provide opportunities for students to be directly involved in various learning experiences through selected physical activities, sports and health which are carried out systematically. The provision of learning experiences is directed at fostering better physical growth and psychological development, as well as forming a lifelong healthy and fit lifestyle.

Ihsan and Hasmiyati (2011: 53) the implementation of physical education and sports learning is a long-term investment in efforts to foster the quality of Indonesia's human resources. The results are expected to be achieved in the long term, therefore, efforts to guide the community and students through physical education and sports need to be carried out with patience and sincerity to make sacrifices. Meanwhile, according to Malobulu et al. (2011: 12) physical education is essentially an educational process that utilizes physical activity to produce holistic changes in individual quality, both physically, mentally and emotionally.

Preparation of students in the teaching and learning process to gain learning experiences by providing several introductions that refer to the anticipation component. In opening lessons, the teacher prepares students by developing their interest in the subject. In preparing students the teacher conveys what will be learned and its relationship with previous lessons and current or future activities. One of the lessons to improve students' physical fitness is the type of jigsaw cooperative learning. The cooperative learning model according to (Li et al., 2017) states that cooperative learning is proven effective so that it can be used in schools by including students of various ages. Slavin (2008) stated that in the type of jigsaw cooperative learning, students are grouped into small groups of 4-6 people as the original group, each member of the group gets a specific task that is different from one another. Each group member who gets the same task then gathers with other group members to form a group of experts to work together in understanding or completing the given task. The type of jigsaw cooperative learning model according to (Ginanjar, 2016: 32), (Setiawan, 2017), Subianto and Hidayat (2013), and (Eka Setiawan, 2015) that learning is part of cooperative learning placed in groups. Students in the application of Jigsaw learning are placed into groups to learn a piece of a skill, knowledge area, or game to achieve effective and efficient learning goals.

Seeing these problems, researchers believe that the type of jigsaw cooperative learning can improve students' physical fitness. Physical fitness is very supportive of maintaining the stamina of students, both during the teaching and learning process in class and outside the classroom. A person who performs physical activity with the type of exercise and the intensity that meets the requirements, as well as the length of exercise with a sufficient frequency every week, will be able to obtain and maintain physical fitness. Physical fitness is a daily activity without feeling tired. This is in line with the opinion of Mutohir and Maksum (2007: 51), Mukholid (2007: 34), Wahjoedi (2003: 58), MOH (2009: 9), Gatot Jariono (2015) and Giriwijoyo (2007: 43) that fitness The body is a very important aspect of maintaining overall body stability, which in turn will give a person the ability to live a productive life and be able to adjust to any proper physical load. Thus physical fitness relates to the ability and ability of a person to carry out his daily duties with an effective and efficient spirit in a relatively long time without causing significant fatigue, and still has spare energy to carry out other activities.

Based on the phenomenon in the form of this fact that in the learning process good physical fitness is needed to support an effective and efficient learning process through cooperative learning type jigsaw. In accordance with the circumstances conducted, the researcher conducted research on the application of jigsaw cooperative learning to improve the physical fitness of students of Junior High School 1 Sajoanging, Wajo Regency, South Sulawesi Province.

2. Methodology

Research Methods

The research used was quasi-experimental research using one group pretest and posttest research designs. This study did not use a control sample because the researcher only conducted quasi-research to reveal the level of physical fitness in terms of the application of the jigsaw cooperative learning model. The research design can be seen in the following figure.
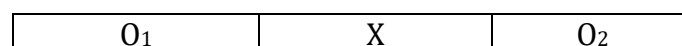
O_1	X	O_2

Figure 1. One Group Pretest and Posttest Design

Where:
O1: physical fitness pretest
X: the experimental group used the jigsaw-type cooperative learning
O2: Posttest Physical fitness

Data Collection Technique

The data collection technique used several techniques, namely 1) Observations made by researchers in this research were carried out by collaborative observation techniques, namely observation assisted by peers. This observation is carried out formally in the classroom when learning takes place. Observations were made to monitor the physical education learning process and health material of the squat style long jump that was taking place in the classroom; and 2) The giving of tests is intended to measure the extent to which the students acquire skills after learning activities. This test is given at the beginning of the study to identify student deficiencies or weaknesses in the student's physical fitness level. In addition, at the initial meeting, a pretest was given to determine the initial ability before being given treatment, then at the end of the study, a posttest would be given to find out whether there was a difference before and after giving treatment.

Data Analysis Technique

Data analysis techniques quantitative data analysis starting from descriptive statistical analysis used to describe science process skills based on the results of the pretest and posttest. To determine the process skill score category, it can be seen from the mean, median, mode, max, min, range, standard deviation, validation, and others. pretest and posttest data were processed in the Statistical Package for Social Science (SPSS) system version 20.0. Furthermore, inferential analysis is a statistical technique used to analyze sample data and the results are applied to the population intended to test the research hypothesis, before testing the hypothesis, the data prerequisite test is first performed: Data normality testing uses the help of the Statistical Package for Social Science (SPSS) program version 20.0 with the Kolmogorov Smirnov Normality Test to find out whether the data obtained were normally distributed. Physical fitness data from the population will be normally distributed sig (2-tailed) $\geq \alpha$ with a real level $\alpha = 0.5$, and the last statistical hypothesis test with the condition that if t table < t count then Ho is accepted and Ha is rejected, meaning that the type of cooperative learning model is given. jigsaw does not affect the physical fitness of students. On the other hand, if t count > t table, then Ho is rejected and Ha is accepted, it means that there is an effect of giving a jigsaw cooperative learning model.

3. Result and Discussion

This research resulted in findings about the application of the jigsaw-type cooperative learning model to improve the physical fitness of students who took extracurricular activities at the volleyball game at Junior High School 1 Sajoanging. total, the explanation is as follows:

Table 1. Descriptive Analysis Results of Frequency

Statistics	Physical Fitness	
	Pretest	Posttest
Number of Samples	30	30
Average value	9.93	13.60
Range	5	4
Minimum Value	8	11
Maximum Value	13	15
Total number	298	408

Based on the results of the descriptive analysis in Table 1, it can be concluded that there is an increase in the pretest and posttest of physical fitness of students who take extracurricular volleyball games. This is evidenced by the acquisition of the respective mean scores regarding the application of the jigsaw cooperative learning to improve the physical fitness of volleyball extracurricular students of 9.93 and 13.60 having a difference of 3.63. Thus, it can be concluded that there is an increase of 3.63 levels of physical fitness after being treated with the application of the jigsaw learning model. To strengthen the results of the descriptive analysis, it is described in the following histogram form.
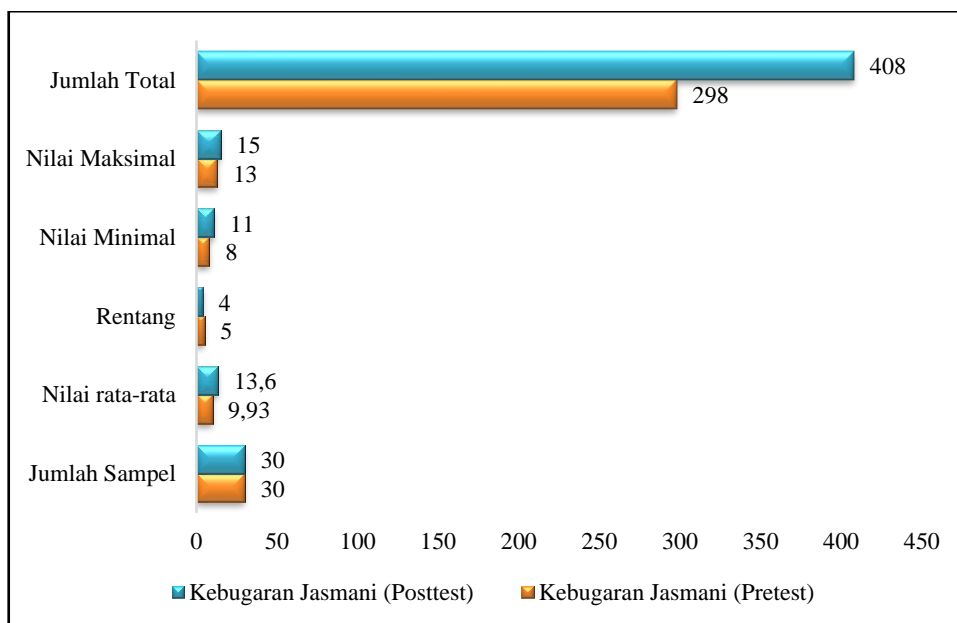

Figure 1. The Pre-test and Post-test Histograms of Physical Fitness

After the descriptive analysis results are described thoroughly, it is continued with the data normality test as a prerequisite for testing the research hypothesis, while the results of the research data normality can be seen in the following table:

Table 2. The Results of the Kolmogorov-Smirnov Z

Statistics	Physical Fitness	
	Pretest	*Posttest*
Number of Samples	30	30
Kolmogorov-Smirnov Z	1.119	1.039
Asymp. Sig. (2-tailed)	.163	.230

Based on the results of the data normality test in the Kolmogorov-Smirnov Z (KS-Z) value table in all data groups, it was greater than the value of α = 0.05. Thus, it can be concluded that the sample of this study came from a population with a normal distribution. This conclusion implies that parametric statistical analysis can be used to test the hypotheses proposed in this study, so that the first requirements for hypothesis testing have been met. Furthermore, the homogeneity test was carried out using the Barlett test at the level of α = 0.05. The recapitulation of the results of the homogeneity analysis with the Barlett test using the Oneway Anova test of homogeneity of variances analysis is presented in table 3 below.

Table 3. The Results of the Kolmogorov-Smirnov Z

Group	χ^2	χ^2 tabel α = 0,05	Sig. (p)	Conclusion
Pretest	0.059	21,026	0,809	Homogeneous

The test results indicate that the pretest test results obtained a value of 0.059 and p = 0.809> α 0.05 or the test gives an indication that the value of $\square 2$ count = 0.059 is smaller than the value of 2 table = 21.026 with a significant level (p) = 0.809 so that It is concluded that the eight data groups tested came from populations with homogeneous variances. Based on the two results of the analysis requirements test above, it can be concluded that the analysis requirements needed for the analysis of variance are met so that it is feasible to carry out further analysis in seeing the effect of the application of the jigsaw type cooperative learning model on improving the physical fitness of students who take extracurricular volleyball games at Junior High School 1 Sajoanging. Furthermore, to test the variance linearity in the two groups, the one group pretest-posttest design was carried out by using the ANAVA test at the level of α = 0.05, it can be described as follows.

Table 4. The Results of The Regression Significance and Linearity of O1 to O2 (Pretest * Posttest)

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
*pretest * posttest*	Between Groups	(Combined)	11.629	5	2.326	1.569	.207
		Linearity	8.037	1	8.037	5.423	.029
		Deviation from Linearity	3.591	4	.898	.606	.662
	Within Groups		35.571	24	1.482		
	Total		47.200	29			

From the table above, for the posttest linearity test of physical fitness (O2) on the posttest physical fitness (O1) variable, the F count value is 4.469 with a significant level of 0.606> 0.05, this means that H0 is accepted and H1 is rejected. Thus it can be concluded that the form of the regression equation is linear. After the test requirements are met, then the hypothesis test is carried out, while the results of the hypothesis test to determine the significance of the effect of the application of the jigsaw cooperative learning model on improving the physical fitness of students who take extracurricular volleyball games at Junior High School 1 Sajoanging can be seen in the following table.

Table 5. Recapitulation of Significance Test (t-test)

Variable	t_{-count}	Sig.	t_{-table} 5% (0,05) 10% (0,1)
Pretest and Posttest to Increase Physical Fitness	14.627	0.000	1.701

Based on the t-test correlation coefficient analysis in table 5 above, the t-count value is 14,627 and the t-count value (29 (10); 0.05) is 1.701. Based on these results, it can be concluded that the correlation coefficient (t-test) between the pretest and posttest increases in physical fitness significantly or H0 is rejected and H1 is accepted. Thus, it can be concluded that there is a significant effect of the application of the jigsaw cooperative learning model on the improvement of the physical fitness of students who take extracurricular volleyball games at Junior High School 1 Sajoanging. This means that the coefficient can be generalized or can apply to the overall population of students where a sample of 30 people is taken.

Based on the results of this study, the type of jigsaw cooperative learning can improve the physical fitness of students who take volleyball extracurricular activities. These results are supported by research results (Sasminta, 2014) which reveal that the application of the jigsaw type cooperative learning model can improve chest pass learning outcomes in basketball games. The results of this study are supported by (Schiff, Nancy Trisari, 2020) in her research it was found that there was a significant increase in the application of the jigsaw-type cooperative model to maumere gymnastics skills. This research is strengthened by (Sriyatin et al.., 2018) in their research it was found that there was an increase in learning outcomes of physical education through cooperative learning type jigsaw students SDN Sambigede 03 Sumberpucung Malang. These results are confirmed by the results of research (Hamzah et al., 2019) in their research that there is an effect of the jigsaw learning model on the results of learning volleyball under passing.

4. Conclusion

In accordance with the results and discussion of the research above, it can be concluded that there is a significant effect of the application of the jigsaw cooperative learning model on the improvement of the physical fitness of students who take extracurricular volleyball games at Junior High School 1 Sajoanging.

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