International Journal of Education, Information Technology and Others (IJEIT), January 2025, 8v(1), 119-132
DOI: https://jurnal.peneliti.net/index.php/IJEIT/article/view/11356
p-ISSN: 2654-2528 e-ISSN: 2623-2324
Accredited by Directorate General of Strengthening for Research and Development
Available online at https://jurnal.peneliti.net/index.php/IJEIT

Comparison of the implementation Cooperative Learning Model Team Assisted Individualization (TAI) and Time Token Types on the Completion of Learning Outcomes in Volleyball overhead Pass

Mahir Dwi Nugroho[1], Fadli Suardhana Eka Putra[2], Sayyid Agil Rifqi Munawar[3]

Universitas Singaperbangsa Karawang[1,3], Universitas Lambung mangkurat[2]

Received: 5 January 2025
Revised: 14 January 2025
Accepted: 28 January 2025

Abstract

Cooperative Learning has quite high effectiveness in improving learning completion, but is not specific because there are many types of Cooperative Learning. This study aims to determine the effectiveness of cooperative learning in physical education subjects on Volleyball overhead passing material for class VII students at SMPN 42 Surabaya. The cooperative model chosen is the Time Token and Team Assisted Individualization (TAI) types because they are relevant to the potential of students in that class. The research method used is experimental research with a quantitative descriptive approach. The sample in this study amounted to 80 students, consisting of 40 students in class VII-F as the X1 TAI experimental group and 40 students in class VII-E as the X2 Time Token experimental group. From the calculation of the independent t test, it can be concluded that there is no difference between the TAI and Time Token models on the completion of volleyball overhead passing learning outcomes as evidenced by the t count value = 1.66 which is smaller than t table (1.66 <1.99). The cooperative learning model that has a greater influence on the completion of volleyball overhead passing learning outcomes in class VII students of SMP Negeri 42 Surabaya is the TAI type with a large increase of 0.376% in the skill aspect. The TAI type is recommended for Physical Education learning, of course with systematic class management in order to get optimal results.

Keywords: Cooperative Learning, Time Token, Team Assisted Individualization, Voleyball

(*) Corresponding Author: mahir.dwi@fkip.unsika.ac.id

How to Cite: Nugroho, M., Putra, F. S., & Munawar, S. A. (2025). Comparison of the implementation Cooperative Learning Model Team Assisted Individualization (TAI) and Time Token Types on the Completion of Learning Outcomes in Volleyball overhead Pass. *International Journal of Education, Information Technology, and Others*, *8*(1), 119-132. Retrieved from https://jurnal.peneliti.net/index.php/IJEIT/article/view/11356

INTRODUCTION

In accordance with the mandate of Law Number 11 of 2022 concerning sports which replaces Law Number 3 of 2005 concerning the national sports system, it states the importance of sports education which aims to form the successors of the nation who have good character, explore knowledge, form the attitudes and behaviors needed to get used to a healthy active lifestyle throughout life through learning that pays attention to the needs of students. Of course, this mandate makes physical education the only subject that is the main focus in formal educational sports and its existence is very important.

Physical Education is a subject in schools that is very much needed for comprehensive human growth and development (Lee & Lee, 2021) where physical education can develop social, cognitive, physical, and affective aspects, for example increasing the participation of female students, improving basic motor

skills, improving children's skills in dealing with stress and improving skills in problem solving, greater teacher motivation in learning because students have good attitudes (Bores-García et al., 2021; Marini et al., 2021). So that physical education from time to time must always be improved in quality from many aspects, especially in the aspect of teachers, because teachers are the mainstay that determines the success of an education (Mu'arifin & Narmaditya, 2022; Imron et al., 2020).

In Indonesia and even throughout the world, there is still a lot of homework to be done regarding the abilities of physical education teachers, because the dynamics of education continue to develop (Mu'arifin & Narmaditya, 2022; Mu'arifin et al., 2022). Answering this issue, one of them is the emergence of a teacher certification program that will improve teacher professionalism, although it is not yet fully relevant, especially in Indonesia (Mu'arifin & Narmaditya, 2022). However, the development of these competencies needs to be appreciated and its effectiveness increased.

Teacher professionalism is expected to be able to answer the challenge of low student motivation in physical education learning. So that teacher professionalism can encourage the delivery of the essence of physical education in its entirety because physical education, which was initially known as only movement education, can in essence be achieved, namely fostering the full potential of students such as physical, social, moral, mental, intellectual, and spiritual potential (Yoda & Tisna, 2021). This challenge certainly requires a strategic approach and attention to the needs of students so that students are motivated to learn so that the quality of the learning process improves. There is still much debate about effective ways to improve the quality of the learning process in physical education (Bores-García et al., 2021) but previous research recommends cooperative learning in improving the quality of the learning process because it is considered the most effective method worldwide (Dyson et al., 2022; Chen, 2021)

In the researcher's observation and reinforced by the statement of the physical education teacher conducted at SMPN 42 Surabaya in class VII that the completeness of student learning in physical education subjects is less than satisfactory because physical education learning activities do not accommodate the potential of all students, only some children are enthusiastic because they do not like lessons in class and only like physical education, especially during game sessions. This makes physical education like an exclusive education that only favors the potential of some students, even though physical education must accommodate the entire potential of students, even students with special needs (Widiyanto & Putra, 2021). Therefore, teachers are expected to have creativity in learning, both creativity in learning and the intrinsic motivation of the teacher himself (Wardiana & Asroyani, 2022)

Regarding teacher motivation, there are many factors that influence one of them is the choice of learning model, if the learning model is relevant to the needs of the child, the teacher's motivation will increase (Bores-García et al., 2021) as offered by the cooperative learning method. Cooperative learning is a learning method that divides into small groups to learn together and develop together with different levels of ability. With cooperative learning, students can be directly involved during the learning process. In completing tasks and solving problems, group members work together, help each other and learning is not finished when

one of the group members does not understand the material. (Bores-García et al., 2021). This is in line with the conditions of students in class VII at SMPN 42 Surabaya, where some students also like discussion activities and group work.

There are many cooperative learning models, but in this study the author uses the TAI and Time Token cooperative models as learning models because the TAI and Time Token models are learning models that are suitable for application to students who have low learning motivation and want learning that is problem-solving and discussion-based or has the competence for arguments. (Damayanti et al., 2020; Nur Hanik & Imam Supardi, 2019)

Based on the cooperative learning method above, the researcher tried to compare which method was the most effective in improving the completeness of student learning outcomes in physical education at SMPN 42 Surabaya and the volleyball subject was chosen because the most adequate and possible subject was this subject considering the limited facilities and infrastructure..

RESEARCH METHOD

This type of research is experimental research with a quantitative descriptive approach. What is meant by experimental research is research that is carried out strictly to determine the causal relationship between variables (Akbar et al., 2023). One of the main characteristics of experimental research is the treatment imposed on the subject or object of research (Fikri, 2022).

In this study, the Static Group Pre-test-Post-test Design research design was used (Nande et al., 2021), as follows:

Table 1. Research Design

Group	Pretest	Treatment	Post Test
A	Y1	X1	Y2
B	Y1	X2	Y2

Then in this study using 2 variables, namely Independent variable 1 = TAI type cooperative learning model, Independent variable 2 = Time Token type cooperative learning model, Dependent variable = Completeness of volleyball overhead passing learning outcomes. The population in this study were students of class VII of SMPN 42 Surabaya which consisted of nine classes (VII A-VII I) totaling 342 students. The sample of this study used cluster random sampling where in this technique the sample chosen was not an individual, but a group (Fiqri et al., 2022). The reason the researcher took this technique was because all populations had the same right to be research samples. the group in question was 9 classes VII in SMP.

RESULTS AND DISCUSSION

From the results obtained during the implementation of the pre-test and post-test, there were differences after being given a treatment, so it can be said that the application of the cooperative learning model type (TAI) and Time Token has an effect on the completion of the learning outcomes of volleyball upper pass at SMP Negeri 42 Surabaya. The cooperative learning model type (TAI) and Time Token

have an effect on the completion of the learning outcomes of volleyball upper pass with the following description:

A. Statistical Description of Research Results

1. Cooperative type (TAI)

   In this data description, the results of the pre-test and post-test are described on the average, standard deviation, variance, maximum value, and minimum value of knowledge and skills competencies. From 40 students of class VII-F of SMP Negeri 42 Surabaya, the following data were produced:

Table 1. Description of Experimental Group X1 (TAI) Data

Description	*Pre-test*	*Post-test*
Average	3,307018	4,55229
SD	0,843124	0,723918
Variants	0,711	0,524
Max Score	5,000	5,666
Min Score	1,833	2,500
percentage	0,376 %	

Cooperative learning model type Team Assisted Individualization (TAI) on the completion of learning outcomes of volleyball upper pass class VII-F SMP Negeri 42 Surabaya has a pre-test result of an average value of 3.307018 with a variance of 0.711, a standard deviation of 0.843124 and a maximum value range of 5,000 and a minimum value of 1.833

While the results of the post-test of students after the application of the cooperative learning model type Team Assisted Individualization (TAI) the average is 4.55229 with a variance of 0.524, Standard Deviation of 0.723918 and a maximum value range of 5.666 and a minimum of 2.500.

2. Cooperative Time Token type

In this data description, the results of the pre-test and post-test are described on the average, standard deviation, variance, maximum value, and minimum value of knowledge and skills competencies. From 40 students of class VII-E of SMP Negeri 42 Surabaya, the following data were produced:

Table 2. Description of Experimental Group Data X2 Time Token

Description	*Pre-test*	*Post-test*
Average	3,297054	4,233919
SD	1,064406	0,93172
Variants	1.133	0,868
Max Score	6,000	6,000
Min Score	1.500	2,166
Percentage	0,284 %	

The table above shows that the initial results before the application of the Time Token type cooperative learning model on the completeness of the learning outcomes of volleyball overhead passing in class VII-E of SMP Negeri 42 Surabaya have pre-test results with an average value of 3.297054 with a variance of 1.133, a standard deviation of 1.064406 and a maximum value range of 6.000 and a minimum value of 1.500.

Meanwhile, the results of the students' post-test after implementing the Time Token type cooperative learning model had an average of 4.233919 with a variance of 0.868, a Standard Deviation of 0.93172 and a maximum value range of 6.000 and a minimum of 2.166.

B. Research Data Analysis

1. Pre-Test and Post-Test Results of Experimental Group X1 (TAI)

The difference in the results of the pre-test and post-test of the experimental group X1 which was given the application of the cooperative learning model type Team Assisted Individualization (TAI) on the completeness of the learning outcomes of volleyball upper passing class VII SMP Negeri 42 Surabaya, then processed using the t-test for the same group, the t count was obtained at 7.325 while to find out the t table value, two parties can be tested where df = n-1 (38-1 = 37). From the df value, the t table obtained a value of 2.026 and the critical value proposed at a level of significance of 0.05. This can be said that the t count value is greater than the t table value (7.325> 2.026). Thus, it can be said that the difference between the pre-test and post-test in the experimental group X1 is a significant difference because the t table value is greater than the critical value proposed (2.026> 0.05).

To find out the improvement before and after treatment in the experimental group, if Md is the average difference between pre-test and post-test (4.55229-3.307018), the value is 1.245272 and Mpre is the average pre-test, which is = 3.307018. From the calculation results, the experimental group X1 which was given the treatment of implementing the Team Assisted Individualization (TAI) cooperative learning model in class VII-F students of SMP Negeri 42 Surabaya can improve learning outcomes by 0.376%.

2. Results of Pre-Test and Post-Test of Experimental Group X2 Time Token

The difference in the results of the pre-test and post-test of the experimental group X2 which was given the application of the Time Token type cooperative learning model on the completeness of the learning outcomes of volleyball upper passing class VII-E SMP Negeri 42 Surabaya, then processed using the t-test for the same group, the t count was obtained at 7.469 while to find out the t table value, two parties of testing can be carried out where df = n-1 (37-1 = 36). From the df value, the t table obtained a value of 2.028 and the critical value proposed at a level of significance of 0.05. This can be said that the t count value is greater than the t table value (7.469> 2.028). Thus, it can be said that the difference between the pre-test and post-test in the experimental group X1 is a significant difference because the t table value is greater than the critical value proposed (2.028> 0.05).

To find out the improvement before and after treatment in the experimental group, if Md is the average difference between pre-test and post-test (4.233919-3.297054), the value is 0.936 and Mpre is the average pre-test, which is = 3.297. From the calculation results, the experimental group X2 which was given the treatment of implementing the Time Token type cooperative learning model in class VII-E students of SMP Negeri 42 Surabaya can improve learning outcomes by 0.284%.

C. Final Results of Pre-test and Post-test of Experimental Group X1 (TAI) and Experiment X2 Timen Token

In accordance with the research objectives and research results from the comparison of cooperative learning models of the Team Assisted Individualization (TAI) and Time Token types on the completion of learning outcomes for Passing a Volleyball, it is known that:

Table 3. Description of Experimental Group Data X1 and X2

Group		Material	Percentage	T test	Sig
Experiment (X_1)	Pre-test	3,307018	0,376 %	7,325	significant
	Post-test	4,55229			
Experiment (X_2)	Pre-test	3,297054	0,284 %	7,469	significant
	Post-test	4,233919			
Intergorup	Experiment (X_1)	4,55		1,668	Not significant
	Experiment (X_2)	4,23			

From the table above it can be seen that:

a. In the experimental group X1 (TAI) there was an increase between the average learning outcomes of students' volleyball overhead passing before and after the implementation of the Team Assisted Individualization (TAI) cooperative learning model. It can be said that the influence of the cooperative learning model type (TAI) provides an increase in the learning outcomes of students' volleyball overhead passing in class VII-F of SMP Negeri 42 Surabaya by 0.376%.
b. In the experimental group X2 Time Token there was an increase between the average results of students' volleyball passing learning before and after the implementation of the Time Token type cooperative learning model. It can be said that the influence of the Time Token type cooperative learning model provides an increase in the results of students' volleyball passing learning in class VII-E of SMP Negeri 42 Surabaya by 0.284%.
c. The results of the inter-group difference test showed that there was no significant difference between the learning outcomes of volleyball overhead passing of students in the experimental group X1 (TAI) and students in the experimental group X2 Time Token in learning volleyball overhead

passing. Judging from the average percentage increase, it is known that the experimental group X1 with the learning model (TAI) has a greater increase.

D. Normality Test

Normality test is conducted to test whether the analyzed data is normally distributed or not, then it can be tested using the kolmogorov-smirnov method. Based on SPSS calculations with the test provisions if the significant value of the calculated Pvalue is less than α (5%) or 0.05 then Ho is accepted and Ha is rejected then the data is not normal. While if the significant value of the calculated Pvalue is greater than the value of α (5%) or 0.05 then Ho is rejected and Ha is accepted then the data is normal. The following are the results of the normality test using SPSS:

1. Cooperative model type (TAI)

Table 4. Results of the Normality Test for Experimental Group X1 (TAI)

	Pre test		*Post test*	
	Cognitive	Psycomotor	Cognitive	Psycomotor
P_{value}	0,062	0,001	0,000	0,000
Significant	0,05	0,05	0,05	0,05
Category	Normal	Abnormal	Abnormal	Abnormal

Based on the table above, it can be explained that the significant value (Pvalue) of the post-test knowledge, skills is smaller than the value of α (5%) or 0.05 with sig <α (0.000 <0.05) and the pre-test skill value is 0.001 <0.05 while the value (Pvalue) of the pre-test knowledge is greater than the value of a (5%) or 0.05 with sig> α (0.062>0.05). So it was decided that Ha was rejected and Ho was accepted which means the data is normal. With the results that there is only one data that is normal from the four data taken, the next step is to prove whether there is an influence or not and the magnitude of the influence if it is stated to have an influence, the researcher uses the Wilcoxon formula. Wilcoxon is a statistical test used if the magnitude or direction of the actual difference between pairs of data taken from one sample or two related samples.

Table 5. Results of the Wilcoxon Test for Experimental Group X1 (TAI)

	Pre-test & *Post test* Cognitive	*Pre-test* & *Post test* Psycomotor
N	38	38
Z	-5,117	-3,062
Sig	0,000	0,002

Based on Wilcoxon's calculation, the pre-test and post-test of knowledge competency were -5.117, then the pre-test and post-test of skill competency were -3.062. From the asymp sig table of knowledge competency 0.000 <α is 0.05, then the asymp sig of skill competency 0.002 <α is 0.05. So from the results of knowledge and skill competency, it can be said that Ha is accepted, which means that there is a significant influence between volleyball overhead passing before and after treatment (TAI) on class VII students of SMP Negeri 42 Surabaya. While Ho is accepted, which means that there is no significant influence between volleyball overhead passing before and after treatment (TAI) on class VII students of SMP Negeri 42 Surabaya. And to formulate the hypothesis (Ho and Ha).

Ho: μ= 0 then there is no significant effect between the volleyball overhead passing before and after the treatment.

Ha: μ≠ 0 then there is a significant effect between the learning outcomes of volleyball overhead passing before and after the treatment.

2. Cooperative modelTime Token type

Table 6. Normality Test of Experimental Group X2 Token Time

	Pre test		*Post test*	
	Cognitive	Psycomotor	Cognitive	Psycomotor
Pvalue	0,000	0,057	0,000	0,133
significant	0,05	0,05	0,05	0,05
Category	Abnormal	Abnormal	Abnormal	normal

Based on the table above, it can be explained that the significant value (Pvalue) of the pre-test knowledge, and post-test knowledge is smaller than the value of α (5%) or 0.05 with sig <α (0.000 <0.05) and the pre-test skill value is 0.057 <0.05 while the value (Pvalue) of the post-test skill is greater than the value of α (5%) or 0.05 with sig> α (0.133>0.05). So it was decided that Ha was rejected and Ho was accepted which means the data is normal. With the results that there is only one data that is normal from the four data taken, the next step is to prove whether there is an influence or not and the magnitude of the influence if it is stated to have an influence, the researcher uses the Wilcoxon formula. Wilcoxon is a statistical test used if the magnitude or direction of the actual difference between pairs of data taken from one sample or two related samples.

Table 7. Wilcoxon Test Experimental Group X2 Time Token

	Pre-test & *Post test* Cognitive	*Pre-test* & *Post test* Psycomotor
N	37	37
Z	-5,046	-1,691
Sig	0,000	0,091

Based on Wilcoxon's calculation, the pre-test and post-test of knowledge competency were -5.046, then the pre-test and post-test of skill competency were -1.691. From the asymp sig table of knowledge competency 0.000 <α is 0.05, then the asymp sig of skill competency 0.091>α is 0.05. So from the results of knowledge and skill competency, it can be said that Ha is accepted, which means that there is a significant influence between passing the volleyball before and after giving treatment (Time Token) to class VII students of SMP Negeri 42 Surabaya. While Ho is accepted, which means that there is no significant influence between passing the volleyball before and after giving treatment (Time Token) to class VII students of SMP Negeri 42 Surabaya. And to formulate the hypothesis (Ho and Ha).

Ho: μ= 0 then there is no significant effect between the volleyball overhead passing before and after the treatment.

Ha: μ≠ 0 then there is a significant effect between the learning outcomes of volleyball overhead passing before and after the treatment.

E. Homogeneity Test

Basically, in the homogeneity test, the same provisions apply as in the normality test. If Pvalue > 0.05 then it is stated as homogeneous, otherwise if Pvalue < 0.05 then it is heterogeneous. Based on the calculation results using ANOVA, the following data were obtained:

Table 8. Homogeneity Test of Experimental Groups X1 and X2

	Pre-test (X_1) & (X_2)	*Post-test* (X_1) & (X_2)
Sig	0,522	0,186
df2	73	73

The table above provides information that Pvalue > 0.05 means the data is **homogeneous.**

F. T-test

1. Paired Sample-test (Test of the difference in paired sample means) group X1 (TAI)
   a. Determining statistical hypotheses
      If Ho is accepted, then there is no difference in the learning outcomes of volleyball overhead passing in experimental students X1 before and after being given the application of the cooperative learning model type (TAI). Whereas if Ha is accepted, then there is a difference in the learning outcomes of volleyball overhead passing in experimental group students X1 before and after being given the application of the cooperative learning model type (TAI).
   b. Determining critical values (t_{table})

To determine the critical value, the level of significance was chosen: 0.05 (5%). The degree of freedom of the divisor (df) = n-1 = 38-1 = 37 and the (t_{table}) was obtained = 2.026.

c. Statistical Value (t_{value})
Based on the calculation using the paired sample t-test formula, the t-test value is obtained as follows: 7.325
test criteria:
Ho is rejected and Ha is accepted if (t_{value})> (t_{table})
Ho is accepted and Ha is rejected if (t_{value})< (t_{table})

d. Test Results
By comparing the calculated t value and the t table value, it can be concluded that Ha is accepted and Ho is rejected because the calculated (t_{value})is 7.325 > (t_{table})2.026. Thus, there is a difference in the learning outcomes of volleyball upper pass in experimental group X1 students before and after being given the application of the cooperative learning model type (TAI). This can be said that the application of the cooperative learning model type (TAI). Has a significant effect on the completeness of the learning outcomes of volleyball upper pass because (t_{table}) is greater than the proposed critical value (2.026 > 0.05)

2. Paired Sample-test (Test of the difference in paired sample means) X2 Time Token group

a. Determining statistical hypotheses

If Ho is accepted, then there is no difference in the learning outcomes of volleyball overhead passing in experimental students X2 before and after being given the application of the Time Token type cooperative learning model. Whereas if Ha is accepted, then there is a difference in the learning outcomes of volleyball overhead passing in experimental group students X2 before and after being given the application of the Time Token type cooperative learning model.

b. Determining critical values (t_{table})

To determine the critical value, the level of significance chosen is: 0.05 (5%). The degree of freedom of the divisor (df) = n-1 = 37-1 = 36 and the (t_{table}) is obtained = 2.028.

c. Statistical Value (t_{value})
Based on calculations using the paired sample t-test formula, the calculated (t_{value}) value is: 7.469
Testing criteria:
Ho is rejected and Ha is accepted if (t_{value}) > (t_{table})
Ho is accepted and Ha is rejected if (t_{value}) < (t_{table})

d. Test Results
By comparing the (t_{value}) and (t_{table})values, it can be concluded that Ha is accepted and Ho is rejected because the (t_{value}) is 7.469 > (t_{table})2.028. Thus, there is a difference in the learning outcomes of volleyball upper pass in the experimental group X2 before and after being given the application of the Time Token type cooperative learning model. This can be said that the

application of the Time Token type cooperative learning model. Has a significant effect on the completeness of the learning outcomes of volleyball upper pass because (t_{table})is greater than the proposed critical value (2.028 > 0.05)

3. Independent Sample t-test (test of mean differences between groups)
    a. Determining statistical hypotheses
       If Ho is accepted, there is no difference in the learning outcomes of volleyball overhead passing in students in the experimental group X1 (TAI) and the X2 Time Token group. Meanwhile, if Ha is accepted, there is a difference in the learning outcomes of volleyball overhead passing in students in the experimental group X1 (TAI) and the X2 Time Token group.
    b. Determining critical values (t_{table})
       To determine the critical value, the level of significance was chosen: 0.05 (5%). The degree of freedom of the divisor (df) = n1 + n2-2 = 38 + 37-2 = 73 and the (t_{table}) value = 1.99
    c. Statistical Value (t_{value})
       Based on calculations using the independent t-test formula, the calculated (t_{value})is 1.66:
       Testing criteria:
       Ho is rejected and Ha is accepted if (t_{value}) >(t_{table})
       Ho is accepted and Ha is rejected if (t_{value}) < (t_{table})
    d. Test Results
       By consulting the calculated t and t table values, it can be concluded that the Ha skill aspect is rejected and Ho is accepted because the calculated t value is smaller than the t table value (1.66 < 1.99), thus there is no difference in the learning outcomes of volleyball upper ball passing in terms of the learning model.

DISCUSSION

In accordance with the formulation of the problem and hypothesis proposed in this study regarding the comparison of the application of the cooperative learning model of the Team Assisted Individualization (TAI) and Time Token types on the completion of upper passing learning outcomes, it is known that the differences in learning outcomes of the two groups are as follows.

1. Test the differences between each group

In this section, the hypothesis testing will be presented based on the results of the data tabulation obtained from the test that has been given to the testee. Then the results of the data tabulation are processed manually to test the previously proposed hypothesis. To answer the hypothesis that has been proposed, the analysis test used in this study is a different test with similar samples to determine the differences in the results of the pre-test and post-test and the improvement in the results of learning to pass the volleyball. The data analyzed was taken from the learning completion value.

From the results of the T dependent test, it can be seen that for the experimental group X1 (TAI) the difference in pre-test and post-test results was

7.325 with an increase of 0.376%, while for the experimental group X2 Time Token the difference in pre-test and post-test results was 7.469 with an increase of 0.284%.

Thus it can be concluded that both models successfully improve the learning outcomes of volleyball upper pass. From these results, it turns out that the cooperative learning model type (TAI) is better than Time Token.

2. Test the difference between two groups

In this section, the hypothesis test is presented on whether there is a difference in the application of the cooperative learning model type (TAI) and Time Token on the completeness of the learning outcomes of volleyball passing for grade VII students. To answer the hypothesis that has been submitted, the analysis test used in this study is the independent sample T Test as a difference test. The test criteria are if t value > t table Ho is rejected and Ha is accepted, while if t value < t table Ho is accepted and Ha is rejected.

Based on the calculation using the independent t-test formula, the calculated t value is 1.66 <t table 1.99, which means that the calculated t value is smaller than the t table. So it can be said that there is no significant difference with a significance level of 0.05 between the two groups, which means that the hypothesis proposed Ho is accepted and Ha is rejected.

So it can be concluded that there is no difference in the application of the cooperative learning model type (TAI) and Time Token on the completeness of learning outcomes of class VII students at SMP Negeri 42 Surabaya.

To find out which has a greater influence, it can be seen based on the percentage of increase in learning outcomes, the application of the cooperative learning model type (TAI) successfully increased the learning outcomes of volleyball upper pass of class VII-F students by 0.376%, while the Time Token cooperative learning model successfully increased the learning outcomes of volleyball upper pass by 0.284%. Thus, it can be concluded that the learning outcomes of volleyball upper pass in the experimental group X1 are better than the learning outcomes of X2.

CONCLUSION

This study aims to determine the differences in the application of cooperative learning models (TAI) and Time Token on the completion of upper passing learning outcomes in class VII students at SMP Negeri 42 Surabaya. And the results of the research that has been conducted can be concluded that:

1. There is no difference in the application of cooperative learning models (TAI) and Time Token on the completion of learning outcomes of volleyball passing for class VII students at SMP Negeri 42 Surabaya. proven by the calculation of the independent sample T Test as a different test t value < t table (1.66 < 1.99) with a significance level of 0.05.
2. Because there is no difference, it is not possible to know how big the difference is.
3. 3. The model type (TAI) has a greater influence on the skill aspect by 0.037% while Time Token only increases 0.284% on the learning outcomes of volleyball overhead passing.

From the research results and discussions that have been presented previously, there are several suggestions as follows:

1. This research needs to be developed by providing treatment for a longer duration in order to provide more information related to improving learning outcomes by implementing a cooperative learning model in order to obtain maximum results.
2. This learning model should be adjusted to the students' conditions and the character of the school. The goal is for students to feel comfortable and interested and easily accept the learning materials provided so that in the end, students' learning outcomes will increase.
3. Based on the research results, the cooperative learning model type (TAI) should be used as one of the types of learning models applied by physical education teachers at SMP Negeri 42 Surabaya in learning volleyball overhead passing in particular and other materials.
4. When you want to apply this learning model for physical education subjects or others, a truly mature management is needed. Therefore, a teacher must be able to master the material and learning model so that they can synergize for learning purposes.

BIBLIOGRAPHY

Akbar, R., Siroj, R. A., Win Afgani, M., & Weriana. (2023). Experimental Reseacrch Dalam Metodologi Pendidikan. *Jurnal Ilmiah Wahana Pendidikan*, *9*(Vol 9 No 2 (2023): Jurnal Ilmiah Wahana Pendidikan), 465–474. https://jurnal.peneliti.net/index.php/JIWP/article/view/3165

Bores-García, D., Hortigüela-Alcalá, D., Fernandez-Rio, F. J., González-Calvo, G., & Barba-Martín, R. (2021). Research on Cooperative Learning in Physical Education: Systematic Review of the Last Five Years. *Research Quarterly for Exercise and Sport*, *92*(1), 146–155. https://doi.org/10.1080/02701367.2020.1719276

Budiwanto, S. (2017). Metode Statistika: Untuk Mengolah Data Keolahragaan. *Fakultas Ilmu Keolahragaan Universitas Negeri Malang 2017*, 1–233.

Chen, R. (2021). A Review of Cooperative Learning in EFL Classroom. *Asian Pendidikan*, *1*(1), 1–9. https://doi.org/10.53797/aspen.v1i1.1.2021

Damayanti, U., Bahar, A., & Rohiat, S. (2020). Penerapan Model Pembelajaran Time Token Untuk Meningkatkan Kemampuan Bertanya Dan Hasil Belajar Kimia Siswa Kelas X Mipa 1 Sman 09 Kota Bengkulu Tahun Ajaran 2017/2018. *Alotrop*, *4*(1), 1–7. https://doi.org/10.33369/atp.v4i1.13693

Dyson, B., Shen, Y., Xiong, W., & Dang, L. (2022). How Cooperative Learning Is Conceptualized and Implemented in Chinese Physical Education: A Systematic Review of Literature. *ECNU Review of Education*, *5*(1), 185–206. https://doi.org/10.1177/20965311211006721

Fikri, N. A. (2022). *Jurnal Pendidikan Olahraga dan Kesehatan Volume 10 Nomor 02 Tahun 2022 PENERAPAN MEDIA AUDIO VISUAL TERHADAP PENINGKATAN HASIL BELAJAR MATERI DRIBBLING SEPAK BOLA Nafi Aqil Fikri *, Sudarso*. *10*.

Fiqri, M., Wahyuningsih, S., & Nurhasanah, T. (2022). Sistem Pendukung Keputusan Pemilihan Marketplace Terbaik Menggunakan Metode AHP pada Kelurahan Gunung Batu. *Jurnal Pendidikan Sains Dan Komputer*, *2*(02), 268–280. https://doi.org/10.47709/jpsk.v2i02.1724

Imron, A., Wiyono, B. B., Hadi, S., Gunawan, I., Abbas, A., Saputra, B. R., & Perdana, D. B. (2020). *Teacher Professional Development to Increase Teacher Commitment in*

the Era of the Asean Economic Community. *487*(Ecpe), 339–343. https://doi.org/10.2991/assehr.k.201112.059

Lee, H. S., & Lee, J. (2021). Applying artificial intelligence in physical education and future perspectives. *Sustainability (Switzerland)*, *13*(1), 1–16. https://doi.org/10.3390/su13010351

Marini, A., Safitri, D., Sujarwo, Zahari, M., Lestari, I., Rihatno, T., Nuraini, S., Iskandar, R., & Ibrahim, N. (2021). Model of character building applied in physical education and sport class: Case in Indonesia. *Journal of Physical Education and Sport*, *21*(4), 2389–2394. https://doi.org/10.7752/jpes.2021.s4320

Mu'arifin, & Narmaditya, B. S. (2022). Professional development program for physical education teachers in Indonesia. *Cakrawala Pendidikan*, *41*(3), 665–675. https://doi.org/10.21831/cp.v41i3.49636

Mu'arifin, Nurhasan, & Suroto. (2022). Model-based Collaborative for Professionalism Development of Sports and Health Physical Education Teachers in Indonesia. *Pegem Egitim ve Ogretim Dergisi*, *12*(2), 10–17. https://doi.org/10.47750/pegegog.12.02.02

Nande, A. D., Jura, M. R., & Ratman, R. (2021). The Differences of Chemistry Learning Outcome Through the Implementation of Think-Talk-Write (TTW) Type of Cooperative Learning Model and Scramble Type in Teaching Atomic Structure. *Jurnal Akademika Kimia*, *10*(1), 36–41. https://doi.org/10.22487/j24775185.2021.v10.i1.pp36-41

Nur Hanik, A., & Imam Supardi, K. (2019). The Development of Cooperative Learning Model Team Assisted Individualization with SETS Vision to Increase Science Process Skills Article Info. *Ajik Nur Hanik, Sudarmin, Kasmadi Imam Supardi. / JISE*, *8*(1), 76–85. http://journal.unnes.ac.id/sju/index.php/jise

Rasyono, R., & Setiawan, I. B. (2020). Tingkat Keterampilan Bermain Bola Voli Pada Unit Kegiatan Mahasiswa Bola Voli Pada Jurusan Olahraga dan Kepelatihan Universitas Jambi. *Indonesian Journal of Sport Science and Coaching*, *2*(3), 143–152. https://doi.org/10.22437/ijssc.v2i3.11259

Wardiana, W., & Asroyani, A. (2022). Pengaruh Motivasi Guru terhadap Prestasi Belajar Siswa di MI Yadinu Pancor Kopong Lombok Timur. *Jurnal Ilmiah Mandala Education*, *8*(1), 1140–1147. https://doi.org/10.58258/jime.v8i1.2950

Widiyanto, W. E., & Putra, E. G. P. (2021). Pendidikan Jasmani Adaptif Di Sekolah Inklusif Bagi Anak Berkebutuhan Khusus. *Sport Science and Education Journal*, *2*(2), 28–35. https://doi.org/10.33365/ssej.v2i2.1052

Yoda, I. K., & Tisna, G. D. (2021). The Effectiveness of Physical Education in Elementary Schools Assessed from the Physical Fitness and Obesities of Elementary School Students. *Proceedings of the 4th International Conference on Sports Sciences and Health (ICSSH 2020)*, *36*(Icssh 2020), 54–57. https://doi.org/10.2991/ahsr.k.210707.014