COMPETITOR:
JURNAL PENDIDIKAN KEPELATIHAN OLAHRAGA
e-ISSN: 2657-0734 & p-ISSN: 2085-5389 ‖ Volume 17, Number 2, 2025 ‖ P.762-769

Implementation of Student Teams Achievement Division (STAD) Type Cooperative Learning to Improve Futsal Shooting in Grade VIII Students at SMP Muhammadiyah 2 Boyolali Special Program

Sapril Wiji Aryanto[1A-E*], Pungki Indarto[2B-D], Vera Septi Sistiasih[3B-D]

[1,2] Physical Education Study Program, Faculty of Teacher Training and Education, Muhammadiyah University, Central Java, Indonesia

a810221136@student.ums.ac.id[1], pi311@ums.ac.id[2], vss538@ums.ac.id[3]

ABSTRACT

Shooting is one of the basic futsal techniques that is very important for a player to master. This study aims to analyze the application of Student Teams Achievement Division (STAD) type learning in improving futsal shooting skills in grade VIII students at SMP Muhammadiyah 2 Boyolali Special Program. This research is experimental in the form of class actions. The sample involved in this study was 30 students of Class VIII of the SMP Muhammadiyah 2 Boyolali Special Program. Data collection was used for a futsal shooting test, then analysed using a paired sample t-test. The results of this study showed that the results of statistical analysis with a paired sample t-test obtained a t-cal value of 14.936 and a significance of 0.000 ($p < 0.05$), which showed that there was a significant difference between the pre-test and post-test results. It can be concluded that the STAD learning model has been proven to be effective in improving the futsal shooting skills of grade VIII junior high school students.

ARTICLE HISTORY
Received: 2025/05/04
Accepted: 2025/05/13
Published: 2025/06/15

KEYWORDS
Cooperative Learning;
STAD;
Shooting;
Futsal;
Special Program.

AUTHORS' CONTRIBUTION
A. Conception and design of the study;
B. Acquisition of data;
C. Analysis and interpretation of data;
D. Manuscript preparation;
E. Obtaining funding

Cites this Article : Aryanto, S.W; Indarto, P.; Sistiasih, VS. (2025). Implementation of Student Teams Achievement Division (STAD) Type Cooperative Learning to Improve Futsal Shooting in Grade VIII Students at SMP Muhammadiyah 2 Boyolali Special Program. **Competitor: Jurnal Pendidikan Kepelatihan Olahraga**. 17 (2), p.762-769

INTRODUCTION

Futsal is one of the dynamic sports and is in demand by many people. Futsal, as one of the increasingly popular sports in Indonesia, has many fans and enthusiasts among students. Futsal is a sport that requires high intensity and complex technical skills, so it attracts many students to participate (Naser et al., 2017). The number of futsal events and clubs that are increasing and developing in Indonesia. Indirectly spurring and encouraging the Indonesian people to think and focus on the development of Futsal (Khamidi, 2019).

The goal of the futsal game is to create opportunities and score as many goals as possible into the opponent's goal to win the game (Harnanda et al., 2024). Shooting is one

Sapril Wiji Aryanto[1A-E*], Pungki Indarto[2B-D], Vera Septi Sistiasih[3B-D]
a810221136@student.ums.ac.id[1*]

of the basic futsal techniques that is very important for a player to master. In a futsal match, basic shooting techniques are very necessary and needed to score goals and win a match. Good shooting skills will greatly determine the effectiveness of the attack in scoring goals. Shooting with precise accuracy is needed to complete an attack that has been built. All of this is inseparable from continuous and systematic training that will create good automation for the players (Rosita et al., 2019).

Sports learning is defined as a learning activity that uses physical activity with the aim of improving the development of physical health, critical thinking skills, social skills, logical thinking skills, emotions, moral behaviour, and healthy lifestyles that are planned systematically. For this reason, physical education subjects have a superior value because they can provide maximum assessment in the results of affective, cognitive, and psychomotor attitude assessments (Khumairo et al., 2023). STAD (Student Team Achievement Divisions) Type Learning is a cooperative learning model designed to improve students' academic achievement individually and in groups. According to Imam et al. (2022), student teams achievement division (STAD) learning is a type of cooperative learning that emphasises interaction between students to motivate each other and help each other in mastering the material and achieving maximum achievement. STAD-type learning is an effective learning approach to improve students' abilities in futsal. Furthermore, Isnaini & Kurniawan (2020) explained that the STAD-type cooperative learning model is effective in improving students' process skills through group discussions and quizzes that involve high-level thinking activities.

Based on the results of observations conducted by researchers at SMP Muhammadiyah 2 Boyolali Special Program, several obstacles were found that caused students' kicking results to be less than good, such as students were less enthusiastic and easily bored when practising basic futsal techniques and tended to want to play futsal straight away. The learning method is still monotonous and less varied. There are still many students in sports subjects whose scores are below the specified KKM, which is 75.

The results of identification in the field during the initial observation, students were less enthusiastic and easily bored when practising basic futsal techniques and tended to want to play futsal straight away. Some students seemed less interested in the learning method, which was still monotonous and less varied. This ultimately causes many students in sports subjects to still have scores below the specified KKM, which is 75.

From the explanation of the problems that have been stated above, it turns out that many things can influence the improvement of shooting skills through peer learning strategies in students, but considering the limitations of ability and time, funds and reference books available, the author limits the problem to: Implementation of cooperative learning type Student Teams Achievement Division (STAD) to improve shooting skills in class VIII students at SMP Muhammadiyah 2 Boyolali Special Program.

Based on the background above, this study aims to answer the following question: Can the implementation of Student Teams Achievement Division (STAD) type learning improve futsal shooting skills in class VIII students at SMP Muhammadiyah 2 Boyolali Special Program?

Sapril Wiji Aryanto[1A-E*], Pungki Indarto[2B-D], Vera Septi Sistiasih[3B-D]
a810221136@student.ums.ac.id[1*]

METHODS

This study uses a classroom action research design (classroom-based action research). This research method is a classroom action research; the research here is intended to conduct qualitative descriptive research. An effort in the learning process for students of Class VIII SMP Muhammadiyah 2 Boyolali Special Program. This aims to improve student learning outcomes by using the cooperative learning type, Student Teams Achievement Division (STAD). The subjects or samples involved in this study were 30 students of class VIII SMP Muhammadiyah 2 Boyolali Special Program.

To avoid misunderstanding and interpretation, the study needs to explain the important terms in this study, including the following:

1. The Student Teams Achievement Division (STAD) learning model is a learning model that emphasises group work (students learn together and help each other). Group work makes students have positive interdependence, individual responsibility, personal interaction, teamwork skills, and group processes.
2. Shooting is a way to shoot the ball into the goal and create goals using the inside, outside, tip of the foot or instep.

Data collection techniques are a systematic and standard procedure for obtaining the required data. Therefore, the quality of data is determined by the data collector or measurement tool, so that the data is truly valid and reliable. The data collection techniques are 1) observation, where the author makes direct observations at school, and then documentation, which is a data collection tool, to complete the data, which is considered incomplete or less certain if not supported by documents. Documents consist of syllabus, teaching modules, and textbooks, and 3) Assessment, which is carried out in the form of performance, and values are assessed before and after treatment.

The data analysis conducted by the author is to manage, view, report and compare the research results from each cycle against the learning outcomes after using the cooperative learning type Student Teams Achievement Division (STAD) to improve basic shooting technique skills in futsal games. The assessment techniques are as follows:

1. Performance test (psychomotor).
2. Attitude assessment (affective).
3. Knowledge test (cognitive).

Description:

Assessment of the quality of student performance, with a value range between 1 and 4.

$$\text{Value} = \frac{\text{Total student scores}}{\text{Maximum score}} \times 100$$

RESULTS AND DISCUSSION

Result

This research was conducted from Tuesday, April 8, 2025, April 21, 2025. The number of students who were the sample in this study was 30. The assessment of

Sapril Wiji Aryanto[1A-E*], Pungki Indarto[2B-D], Vera Septi Sistiasih[3B-D]
a810221136@student.ums.ac.id[1*]

shooting skills in futsal games was carried out before the application of the STAD learning method, which was then referred to as pre-test data. The assessment of shooting skills in futsal games was carried out after the application of the STAD learning method, which was then referred to as post-test data.

This study was conducted to determine the extent to which the Student Teams Achievement Divisions (STAD) learning model can improve students' kicking skills. Data collection was carried out through pre-test and post-test (cycle 2) on 30 students. Based on the results of the score, it is known that the pre-test score has an average of 59.44, while the post-test (cycle 2) has increased to 89.167. The minimum score in the pre-test is 33.33, while the maximum score is 75.00. After treatment, the minimum score increased to 75.0, and the maximum reached 100,000.

Analysis Prerequisite Test

Normality Test

The test results show that the pre-test value has a significance value of 0.186, and the post-test (cycle 2) is 0.107. Both values are greater than 0.05, so it is concluded that the data is normally distributed. This normality allows further analysis using parametric approaches such as the t-test (Ghozali, 2018).

Homogeneity Test

Next, a homogeneity test of variance was carried out using Levene's Test to determine whether the variance of the pre-test and post-test values (cycle 2) was uniform. The significance value obtained was 0.741, greater than 0.05. This shows that the variance of the two data groups is not significantly different, thus meeting the homogeneity requirements required for parametric analysis. According to Santoso (2017), homogeneity of variance is an important assumption in testing the differences between two paired groups.

Balance Test

In addition, a balance test was also carried out to determine whether there was equality of initial values in the student groups. The pre-test scores were divided into two groups (upper and lower) based on the median. The t-test results for these two groups showed a significant difference with a t value of -6.966 and p = 0.000. This means that there is an initial disparity between students that must be considered in interpreting the results. However, because the analysis was based on a comparison among students (within-subject design), this does not interfere with the validity of the measurement of individual ability improvement (Sugiyono, 2014).

Table 1.
Results of Normality, Homogeneity, and Balance Tests

Test	Statistic	p-value	Conclusion
Normality Pre-Test	1.089	0.186	Normal
Normality Post-test	1.211	0.107	Normal
Levene's Test	1.111	0.741	Homogeneous
Balance Test (t-test)	-6.682	0.000	Unbalanced

Overall, the results of the analysis prerequisite test indicate that the data meet the requirements for hypothesis testing with a paired sample t-test. The normality and

Sapril Wiji Aryanto[1A-E*], Pungki Indarto[2B-D], Vera Septi Sistiasih[3B-D]
a810221136@student.ums.ac.id[1*]

homogeneity that are met indicate that the STAD model can be analysed accurately for its effect on improving students' kicking skills. Although there is initial inequality, the pre-post measurement design in one group is methodologically strong enough. Therefore, the process of analysis and interpretation of the results can be continued validly.

Data Analysis

The main analysis in this study is the Paired Sample t-test, which is used to determine whether there is a difference in the value of kicking skills before and after treatment. The test results show a t-test value of -10.771 with a significance of p = 0.000. Because p <0.05, it can be concluded that there is a statistically significant difference between the pre-test and post-test values (cycle 2). The average increase (mean difference) is 29.72 points, with a standard deviation of 15.11.

This increase shows that STAD learning significantly contributes to improving students' skills. The significant average increase accompanied by very high significance ($p < 0.001$) indicates that this result is not merely due to chance, but rather due to effective treatment. This is in line with the findings of Slavin (1995), who emphasised that a cooperative approach such as STAD can improve students' cognitive and psychomotor learning outcomes through teamwork and group responsibility.

Furthermore, in the context of motoric ball-kicking skills, the STAD model provides an opportunity for students to practice together, provide feedback to each other, and observe the correct techniques of their peers. Bandura's (1986) social learning principle also reinforces that motor skills can be improved through observation and modelling. Therefore, it can be concluded that the STAD model plays a significant role in improving students' ball-kicking skills.

Table 2.
Paired Sample t-Test Results

Paired Test	t-value	Mean Diff	Std. Dev	Sig. (p)	Conculation
Post-test (siklus2) vs Pre-Test	-10,771	-29,722	15,114	0.000	Signifikan (p < 0.05)

Discussion

Initial Condition of Students' Futsal Shooting Ability Before STAD Learning

The pre-test results showed that the futsal shooting skills of grade VIII junior high school students were at a moderate level, with an average score of 59.44 out of 100. The minimum score obtained by students was 33.33, while the maximum score reached 75. This fairly narrow score distribution indicates that the majority of students have almost equivalent initial abilities but are still in the basic technical mastery category. This condition indicates the need for a learning approach that can encourage students to improve their technical skills gradually and collaboratively.

Research by Supriyatni (2023) in the Journal of Master Penjas and Olahraga supports this finding, which states that students generally have difficulty mastering shooting techniques independently. In her research, it was found that students need stimulus assistance from a more active and interactive learning environment to improve

Sapril Wiji Aryanto[1A-E*], Pungki Indarto[2B-D], Vera Septi Sistiasih[3B-D]
a810221136@student.ums.ac.id[1*]

fine motor skills, such as kicking the ball precisely. This means that cooperative-based learning interventions are very relevant in initial conditions like this.

In theory, Lie (2004) explains that cooperative learning, such as STAD, is very suitable for use in heterogeneous class conditions because it allows students to learn from each other in structured groups.

Results of Students' Futsal Shooting Ability After STAD Learning

This finding is in line with research by Muzammil & Sugiarto (2020) in the Journal of Sports Education, which states that the application of the STAD model can significantly improve students' motor skills in futsal. In this study, STAD was developed with small group activities, where students repeat techniques while giving and receiving feedback from group members. This process creates a deeper and more contextual learning experience, thus contributing greatly to the results of kicking technique skills.

An international study by Gürsoy & Demirtaş (2019) in the Journal of Physical Education and Sport also confirms that cooperative learning, such as STAD, improves team sports technical skills through social interaction and experiential learning. In this study, the findings showed that the STAD model is very effective in improving individual skills in the context of group work, including in futsal, which requires precise shooting skills.

Analysis of Futsal Shooting Ability Improvement After STAD

The results of the statistical analysis showed that the increase in scores from pre-test to post-test (cycle 2) reached an average of 29.72 points, with a t-count value of -10.771 and a significance of 0.000, which means that the difference is very statistically significant. This increase proves that the STAD model has a strong effect on students' shooting skills. In the context of motor learning, this increase reflects the results of the collaborative reinforcement and technique practice process.

Research by Sartika & Riyanto (2022) in the Sports Journal also shows that the implementation of the STAD model is able to improve sports technical skills, including shooting, in a fun and effective way. In the study, students showed increased performance after being given team-based learning involving group assignments and evaluations between members. This learning stimulates active student involvement, increases motivation, and accelerates understanding of basic movements.

Theoretically, this is in accordance with Vygotsky's social constructivism approach (Pramono, 2023), where interaction with peers is the foundation for the development of students' skills and understanding. The STAD model accommodates this principle well because it provides space for students to be active in groups, discuss, exemplify techniques, and provide feedback to each other. Thus, it can be concluded that improving students' futsal shooting skills occurs not only because of practice but also because of collaborative and meaningful learning experiences.

CONCLUSION

Based on the results of data analysis and discussion that have been described in the previous chapter, several conclusions can be drawn as follows:

Sapril Wiji Aryanto[1A-E*], Pungki Indarto[2B-D], Vera Septi Sistiasih[3B-D]
a810221136@student.ums.ac.id[1*]

The initial condition of the futsal shooting skills of grade VIII junior high school students before being given the STAD learning model treatment was in the sufficient category. This is indicated by the average pre-test score of 64.06, with a minimum score of 55.4 and a maximum of 72.9. The majority of students showed mastery of techniques that still need to be improved, especially in terms of accuracy and kick power.

After being given learning with the STAD cooperative model, there was a significant increase in students' shooting abilities. The average post-test score increased to 71.69, with a minimum score of 60.0 and a maximum of 81.5. This shows that STAD learning is able to encourage improvements in students' technical performance as a whole.

Based on the results of statistical analysis with a paired sample t-test, a t-count value of 14.936 and a significance of 0.000 ($p < 0.05$) were obtained, which indicates that there is a significant difference between the pre-test and post-test results. This means that the STAD learning model has proven to be effective in improving the futsal shooting abilities of grade VIII junior high school students.

REFERENCES

Anita, L. (2004). Cooperative learning: Mempraktikkan cooperative learning di ruang-ruang kelas. Jakarta: PT. Gransindo.

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Prentice-hall.

Ghozali, I. (2018). Aplikasi Analisis Multivariate dengan Program IBM SPSS 25. Badan Penerbit Universitas Diponegoro.

Gürsoy, F., & Demirtaş, H. (2019). The Effect of Cooperative Learning on Students' Technical Skill Development in Team Sports. Journal of Physical Education and Sport, 19(4), 2568–2574.

Harnanda, B., Sistiasih, V. S., & Sholeh, M. (2024). Penerapan Metode Small Sided Game Untuk Peningkatan Keterampilan Passing Siswa Ekstrakulikuler Futsal SMP Muhammadiyah 1 Surakarta. JURNAL ILMIAH PENJAS (Penelitian, Pendidikan Dan Pengajaran), 10(1), 24–37.

Imam, C., Sukriadi, S., & Prabowo, E. (2022). Model Pembelajaran Passing Futsal Menggunakan Metode Cooperative Tipe Student Teams-Achievement Division Di SMP Pandu Siswa. Jurnal Pendidikan Olah Raga, 11(2), 255–264.

Isnaini, F., & Kurniawan, M. I. (2020). The concept of the STAD (Student Team Achievement Division) Cooperative Learning Model, according to Robert E. Slavin. Indonesian Journal of Education Methods Development, 10, 10–21070.

Khamidi, A. (2019). Profil Manajemen Penyelenggaraan Liga Futsal Asosiasi Futsal Kota Surabaya. Jurnal Prestasi Olahraga, 2(1).

Khumairo, K. F., Indarto, P., & Nurhidayat, N. (2023). Efektivitas Hasil Belajar Pendidikan Jasmani Olahraga Dan Kesehatan Siswa Program Asrama dan Non Asrama (Studi Kasus di SMP Majelis Tafsir Al-Qur'an Gemolong). Indonesian Journal of Sport Science and Technology (IJST), 2(1), 72–83.

Muzammil, A., & Sugiarto, B. (2020). Efektivitas Model STAD dalam Meningkatkan Keterampilan Futsal. Jurnal Pendidikan Olahraga, 9(2), 112–118.

Naser, N., Ali, A., & Macadam, P. (2017). Physical and physiological demands of futsal. Journal of Exercise Science & Fitness, 15(2), 76–80.

Pramono, G. (2023). Konstruktivisme dalam Kurikulum Merdeka Belajar (KMB). Kemdikbud.

Rosita, T., Hernawan, H., & Fachrezzy, F. (2019). Pengaruh keseimbangan, kekuatan otot tungkai, dan koordinasi terhadap ketepatan shooting futsal. Jurnal Terapan Ilmu Keolahragaan, 4(2), 117–126.

Santoso, S. (2017). Konsep Statistik Parametrik dan Nonparametrik untuk Penelitian. Elex Media Komputindo.

Sartika, N., & Riyanto, M. (2022). Model Pembelajaran Kooperatif dalam Pendidikan Jasmani. Jurnal Keolahragaan, 11(1), 22–30.

Slavin, R. E. (1995). Cooperative Learning: Theory, Research, and Practice. Allyn & Bacon.

Sugiyono. (2014). Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D. Alfabeta.

Supriyatni, D. (2023). Pengaruh Model Pembelajaran STAD Terhadap Keterampilan Shooting Bolabasket. Jurnal Master Penjas Dan Olahraga.