

**THE EFFECT OF THE STUDENT TEAMS ACHIEVEMENT DIVISIONS (STAD)
TYPE COOPERATIVE LEARNING MODEL ON THE MOTIVATION
AND LEARNING OUTCOMES OF SCIENCE STUDENTS
IN GRADE V ELEMENTARY SCHOOL**

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Abstract

The problem in this study stems from low student motivation and learning outcomes in science. This is evident in the teacher-centered learning process, which leaves students passive and bored, with many failing to achieve the Minimum Completion Criteria (KKM). This study aims to determine the effect of the Student Teams Achievement Divisions (STAD) Cooperative Learning Model on students' motivation and science learning outcomes at elementary schools. This study used a quantitative approach, using a quasi-experimental research design with a pretest-posttest control group design. The sample consisted of two classes: an experimental class using the Student Teams Achievement Divisions (STAD) model and a control class using conventional learning. The research instruments were a learning motivation questionnaire and a learning outcome test. The results of the study showed a significant effect of the use of the Student Teams Achievement Divisions (STAD) model on student learning motivation and learning outcomes. This is evidenced by the average motivation result of students in the experimental class of 84.46 while the control class was 77.92. The average learning outcome of students in the experimental class was 88.29, while in the control class it was 78.29. The results of the MANOVA test obtained Pillai's Trace, Wilks's Lambda, Hotelling's Trace, Roy's Largest Root had a significance of 0.002 which means <0.05 , and from the table test of between-subject effects showed that student motivation values had a significance level of $0.002 < 0.05$. Thus, the null hypothesis (H_0) is rejected and Hypothesis (H_a) is accepted. Thus, the Student Teams Achievement Divisions (STAD) model can improve the motivation and science learning outcomes of fifth-grade students at SDIT Buah Hati.

Keywords: STAD, Learning Motivation, Learning Outcomes, Science



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INTRODUCTION

Education is something that cannot be separated from human life.¹ Education can create intelligent and skilled human beings, especially to realize a life of insight, discipline, faith, piety and responsibility in life.² So that it can increase the human resources of the Indonesian nation. With education, a nation will be able to become a nation with an independent character and a competitive spirit.

Basic education is a fundamental stage in building superior quality of human resources.³ At the elementary school (SD) level, the learning process not only focuses on mastering the material, but also on the formation of students' attitudes, skills, and character. One of the subjects that has an important role in shaping students' scientific and logical mindset is Natural Sciences.⁴ Natural Education learning in elementary school aims to foster curiosity, critical thinking skills, problem-solving skills, and awareness of the surrounding environment. Therefore, the Natural Education learning process should be designed in an active, creative, and fun manner so that these goals can be achieved optimally.⁵

However, in practice, Natural Education learning in grade V of elementary school still often faces various problems. The learning process tends to be teacher-centered, where the teacher is more dominant in explaining the material while students play the role of passive receivers of information. The lecture method that is used continuously causes students to be less involved in the learning process. As a result, students' motivation to learn is low, participation in learning activities is less optimal, and the learning results obtained have not reached the expected standards.⁶ This condition shows that innovation is needed in the learning model that is able to activate students directly in the learning process.

¹ Munir Yusuf, "Manusia Sebagai Makhluk Pedagogik," *Didaktika: Jurnal Kependidikan* 8, no. 1 (2019), <https://jurnaldidaktika.org/>.

² Catur Widiatmoko et al., "Penguatan Pendidikan Karakter Sebagai Wujud Pendidikan Berkualitas Dalam Upaya Mencapai Tujuan Pembangunan Berkelanjutan (SDGs)," *Jurnal Wahana Bina Pemerintahan* 6, no. 2 (2024), <https://doi.org/10.55745/jwbp.v6i2.273>.

³ Ahmad Tarmizi Hasibuan and Andi Prastowo, "Konsep Pendidikan Abad 21: Kepemimpinan Dan Pengembangan Sumber Daya Manusia SD/MI," *MAGISTRA: Media Pengembangan Ilmu Pendidikan Dasar dan Keislaman* 10, no. 1 (2019), <https://doi.org/10.31942/mgs.v10i1.2714>.

⁴ Muhammad Farhan et al., "Sikap Ilmiah Sebagai Pembentuk Iman dan Takwa Dalam Pembelajaran IPA Pokok Bahasan Alam Semesta Di Pesantren," *Literasi: Jurnal Ilmu Pendidikan* 15, no. 1 (2024), [https://doi.org/10.21927/literasi.2024.15\(1\).1-13](https://doi.org/10.21927/literasi.2024.15(1).1-13).

⁵ Ejka Sabila Khairunnisa et al., "Pengaruh Kecerdasan Emosional dan Kemampuan Berpikir Positif Terhadap Kemampuan Berpikir Kritis Ilmu Pengetahuan Alam di SD Negeri 17 Tanjungpandan Belitung: Penelitian," *Jurnal Pengabdian Masyarakat dan Riset Pendidikan* 4, no. 2 (2025), <https://doi.org/10.31004/jerkin.v4i2.4170>.

⁶ Nasya Mutia et al., "Perbandingan Motivasi Belajar Siswa Melalui Metode Ceramah dan Digital," *JUPERAN: Jurnal Pendidikan dan Pembelajaran* 04, no. 02 (2025).

In order for the learning objectives of Natural Sciences (IPA) to be achieved optimally, learning motivation is a very crucial factor.⁷ Learning motivation is one of the internal factors that greatly determines the success of students in achieving learning goals. Motivation can be interpreted as the drive that arises in a person to do a certain activity to achieve the desired goals.⁸ Students who have high learning motivation tend to be more diligent, tenacious, actively ask questions, and have enthusiasm in completing learning tasks. On the other hand, students with low motivation will show less enthusiasm, boredom easily, and less participation in learning activities. This low learning motivation directly has an impact on low student learning outcomes. Therefore, teachers need to choose a learning model that is not only oriented towards cognitive achievement, but also able to increase student learning motivation.

One alternative learning model that can be used to overcome these problems is the Student Teams Achievement Divisions (STAD) type cooperative learning model. The STAD model is a type of cooperative learning developed by Robert E. Slavin and emphasizes student cooperation in heterogeneous small groups. In this model, students are divided into several groups consisting of members with different academic abilities, genders, and backgrounds. Each group member is responsible for helping his or her teammates understand the subject matter. The *Student Teams Achievement Division* (STAD) model also allows students with diverse academic abilities to complement each other in the learning process.⁹

The steps in the STAD model include the delivery of material by the teacher, learning activities in groups, the giving of quizzes or individual tests, and the awarding of awards to groups based on the increase in the scores of its members.¹⁰ The group reward system in STAD can foster a spirit of cooperation as well as healthy competition between groups. Thus, students are encouraged to study harder because the success of the group depends on the contribution of each member.

The application of the STAD model in Natural Education learning in grade V is expected to be able to create a more interactive and participatory learning atmosphere. Through group discussions, students can exchange opinions, express ideas, and solve problems related to Natural

⁷ Waldio Manihuruk et al., "Inquiry-based learning and motivation effects on fifth graders' IPAS achievement," *Inovasi Kurikulum* 22, no. 3 (2025), <https://doi.org/10.64014/jik.v22i3.68>.

⁸ Zafar Sidik and A. Sobandi, "Upaya Meningkatkan Motivasi Belajar Siswa Melalui Kemampuan Komunikasi Interpersonal Guru," *Jurnal Pendidikan Manajemen Perkantoran* 3, no. 2 (2018), <https://doi.org/10.17509/jpm.v3i2.11764>.

⁹ Zulhijra Zulhijra and Firdaus Basuni, "Implementasi Model Kooperatif Tipe Student Teams Achievement Divisions (STAD) Pada Pembelajaran PAI Di Sekolah," *Muaddib: Islamic Education Journal* 6, no. 2 (2023).

¹⁰ Fikri Nur Syamsu et al., "Keefektifan Model Pembelajaran STAD terhadap Hasil Belajar Matematika Materi Bangun Ruang," *International Journal of Elementary Education* 3, no. 3 (2019), <https://doi.org/10.23887/ijee.v3i3.19450>.

Education concepts. This activity not only improves understanding of concepts, but also trains social skills such as communication, cooperation, responsibility, and tolerance. In addition, active involvement of students in learning is believed to increase learning motivation which ultimately has a positive impact on learning outcomes.

Learning outcomes are an important indicator in measuring the success of the learning process.¹¹ Learning outcomes reflect the level of students' mastery of the material that has been learned, both in the cognitive, affective, and psychomotor domains. If the learning model used is able to increase student motivation and involvement, then theoretically learning outcomes will also increase.¹² Therefore, it is important to examine the extent to which the STAD-type cooperative learning model affects the motivation and learning outcomes of Natural Education students in grade V of elementary school.

This problem can be seen from the results of observations carried out on October 23 and 28, 2025 at SD Islam Terpadu Babhati, it was found that (1) Natural Sciences (IPA) learning in the classroom is still dominated by the use of lecture methods. (2) In this method, the teacher is the only source of information. (3) Delivering material in one direction without involving active participation from students. (4) The lack of direct involvement of students in learning creates a passive and monotonous classroom atmosphere. (5) This has an impact on low motivation to learn, which can be seen from the lack of enthusiasm of students during the learning process. They seem discouraged and have difficulty understanding the material, because they are not given space to explore concepts independently or through discussion. (6) when a question test is carried out to find out the student's understanding of the material that has just been delivered, there are still many students giving inappropriate answers so that the results obtained are still low and have not reached the KKM with the KKM of Natural Education, which is 75.

Based on the problems that have been explained above, this is considered an indication of low student motivation and learning outcomes, this is evidenced by the results of the initial test of student learning motivation and the value of students' STS learning outcomes in semester 1 in the table below.

¹¹ Fitri Lutfia Zahroh and Fitri Hilmiyati, "Indikator Keberhasilan dalam Evaluasi Program Pendidikan: Success Indicators in Educational Program Evaluation," *Edu Cendikia: Jurnal Ilmiah Kependidikan* 4, no. 03 (2024), <https://doi.org/10.47709/educendikia.v4i03.5049>.

¹² Vivin Nurul Agustin, "Peningkatan Aktivitas Dan Hasil Belajar Siswa Melalui Model Problem Based Learning (PBL)," *Journal of Elementary Education* 2, no. 1 (2016), <http://journal.unnes.ac.id/sju/index.php/jee>.

Table 1. Average Value of Learning Motivation

	Learning motivation	Percentage of achievement
1	Diligent in doing tasks	30%
2	Showing high interest	20%
3	Prefer to work independently	37%
4	Can defend an opinion	35%
5	Always strive to excel	40%

Table 2. Percentage of Completeness of STS Semester 1 Scores in Natural Sciences subjects for grade V students of SDIT Babies for the 2025/2026 Academic Year

Subjects for grade V students of SDIT Baitus Salam for the 2023/2024 Academic Year							
No	Classes	Students	Introduce yourself				Average STS value
			Conclusion		Incomplete		
			Introduce yourself	Quantity	Introduce yourself	Quantity	
1	V A	25	40%	10	60%	15	75
2	V B	24	45,83%	11	54,17%	13	78

Sumber: Guru kelas VA Dan VB SDIT Buah Hati

In table 1. it can be seen that students' motivation to learn is still low, because the achievement of indicators is below 40%. Likewise, there is table 2, student learning outcomes are also still low, it can be seen that of the 80 Minimum Completeness Criteria (KKM) set, only 40% are completed in class Va and 60% are incomplete and class V b is only 45.83% complete and 54.17% are incomplete. This shows that serious action is needed to overcome the problems that occur above and strive to improve the quality of learning for the sake of better motivation and learning outcomes of Natural Sciences (IPA) students at SD Islam Terpadu Buah Hati.

One of the solutions offered is the use of a *Student Teams Achievement Division* (STAD) type cooperative learning model. With this model, attention will be built to help each other in understanding the material better.¹³ Each member of the group has a clear role and responsibility, so that all learners are actively involved in the learning process. This not only reduces awkwardness among learners, but also increases their confidence when contributing to group discussions. With the model, they not only focus on personal achievement, but also support their peers so that their group gets better results.

¹³ Minzani Aufa and Akhmad Liana Amrul Haq, "Pengaruh Model Student Teams Achievement Division (STAD) Terhadap Prestasi Belajar Siswa," *EDUKASI : Jurnal Penelitian & Artikel Pendidikan* 12, no. 2 (2020), <http://journal.ummgl.ac.id/nju/index.php/edukasi>.

Based on this description, this research is motivated by the need for an effective learning model to improve the motivation and learning outcomes of Natural Education students in nature. Research on the influence of the STAD-type cooperative learning model on the motivation and learning outcomes of Natural Education students in grade V of elementary school is relevant to be carried out. The results of this study are expected to make a theoretical contribution to the development of education, especially related to the effectiveness of cooperative learning, as well as practical contributions for teachers in choosing and implementing innovative learning models to improve the quality of Natural Education learning in elementary schools.

RESEARCH METHODS

The type of research conducted is experimental research. This study uses a *quasi experiment* approach. This approach was chosen because the researcher cannot fully control all external variables that may affect the results of the research, but it is still possible to give treatment to a certain group and compare it with other groups. The design used in this study is a *pretest-posttest control group design*. This design was chosen because it provides an opportunity for researchers to compare the results before and after treatment in two different groups, namely the experimental class and the control class.

Table 3. *Research Design*

Sample Class	Pretest	Treatment	Posttest (Tes Akhir)
Experiments	O1	X	O2
Controls	O3	-	O4

Sumber: Sugiyono (2012)

The population in this study is all students of grade V SDIT Buah Hati. The sampling technique used in this study is saturated sample which is a sample determination technique when all members of the population are used as samples". This sampling technique was carried out on the grounds that the number of grade V students at SDIT Buah Hati is not too large, and this study is expected to produce generalizations with very small errors.

Data Collection Techniques

1. Motivational Questionnaire, Questionnaire is a technique or method of collecting data indirectly where the researcher does not directly ask and answer with the respondent. Before the trial of the motivation questionnaire is carried out, validation is carried out by expert

lecturers covering three aspects, namely language, material or content, and structural aspects.¹⁴

Validation endorsement sheet by an expert lecturer. After validation by an expert lecturer, a trial of research instruments was carried out on expert class students, namely grade V students of SDIT Babies.

2. Learning Outcome Test, The test is prepared in the form of an objective based on the subject matter that has been studied.

Data Analysis Techniques

1. Analysis Prerequisites Test

- a. Normality Test, Normality test is carried out to find out whether the research data is normally distributed.¹⁵ The assumption of normality is important in regression analysis because it relates to the validity of the regression coefficient significance test. Normally distributed data allow the use of parametric statistical tests.
- b. Homogeneity Test, Homogeneity test is carried out to investigate whether the variance of the two samples is the same or not. The researcher uses *SPSS Software* to further validate the research data in determining the homogeneity of the sample, the data is called homogeneous, if the P-value is greater than the real level of $\alpha = 0.05$ and not homogeneous if it is otherwise.

2. Uji Hypothesis

The hypothesis test in this study uses the manova test. Manova is a multivariate variant analysis technique which is a translation of *multivariant analysis of variance* (MANOVA). Manova is a variant differential test that is compared from more than one bound variable.¹⁶

RESULTS AND DISCUSSION

The results of the analysis of research data consist of prerequisite tests and hypothesis tests. The prerequisite tests are carried out to determine the hypothesis testing techniques to be tested. The prerequisite tests for this research include:

1. Prerequisite Test

The results of the prerequisite analysis, posttest data analysis, motivation and learning outcomes are as follows:

¹⁴ Siti Wahdianti Putri et al., "Pengembangan Media Pembelajaran Kimia Berbasis Video Animasi Untuk Meningkatkan Motivasi Belajar Siswa Sman 1 Wanasaba," *SPIN JURNAL KIMIA & PENDIDIKAN KIMIA* 4, no. 1 (2022), <https://doi.org/10.20414/spin.v4i1.5092>.

¹⁵ Atmira Qurnia Sari et al., "Batasan Prasyarat Uji Normalitas Dan Uji Homogenitas Pada Model Regresi Linear," *Unnes Journal of Mathematics* 6, no. 2 (2017), <http://journal.unnes.ac.id/sju/index.php/ujm>.

¹⁶ Sutrisno Sutrisno and Dewi Wulandari, "Multivariate Analysis of Variance (MANOVA) untuk Memperkaya Hasil Penelitian Pendidikan," *AKSIOMA : Jurnal Matematika dan Pendidikan Matematika* 9, no. 1 (2018), <https://doi.org/10.26877/aks.v9i1.2472>.

a. Normality Test

In the normality test using *the Shapiro wilk test*, this test is carried out in the experimental class and the control class on the results of *the pretest, posttests* with SPSS with a sig. 5% value. The provisions of the normality test are if the significant value is $> \alpha$ so that the data is distributed normally while if the significant value is $< \alpha$ so that the data is abnormal.

Tabel 4. Normality Test of Learning Motivation

Tests of Normality							
	Classes	Kolmogorov-Smirnova			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Learning Motivation	EXPERIMENTAL CLASSES	.132	24	.200*	.959	24	.338
	CONTROL CLASS	.128	25	.200*	.966	25	.483

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tabel 5. Normality Test of Learning Outcomes

Tests of Normality						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Results of the Experiment	.113	24	.200*	.978	24	.808
Control	.120	25	.200*	.955	25	.262

In tables 4 and 5, the results of the normality test were found to be between > 0.05 significant, so the data was normal. The data on the learning motivation variables of the experimental class got a sig value of 0.338, then the learning motivation value of the experimental class was distributed normally, while for the control class value, the sig value was 0.483 and was distributed normally. The data on the learning outcomes of students in the experimental class had a sig value of 0.808 and was distributed normally, for the control class with a sig value of 0.262 this was also distributed normally.

b. Variant Homogeneity Test

The variance *homogeneity test* is the 2nd requirement that must be carried out before using the multivariate analysis test (MANOVA). In the *Covariance Variant Matrix*

homogeneity test, to see Y1 and Y2 (learning motivation and learning outcomes) can have a significant effect on variable X (*Student Teams Achievement Divisions* (STAD)) simultaneously, while in the variance homogeneity test, it is to see the effect of variable Y1 (learning motivation) on variable X (*Student Teams Achievement Divisions* (STAD)) and variable Y2 (learning outcomes) affect variable X (*Student Teams Achievement Divisions* (STAD)) individually.

Tabel 6. Levene's Test of Equality of Error Variances^a

Test of Homogeneity of Variances			
Learning Motivation			
Levene Statistic	df1	df2	Sig.
.629	1	49	.431

Test of Homogeneity of Variances			
Value			
Levene Statistic	Levene Statistic	Levene Statistic	Levene Statistic
29.761	29.761	29.761	29.761

In table 4, a significant value is obtained which shows that there is an influence between critical thinking ability and learning motivation. If the sig. 0.05 is determined, then the value of critical thinking ability and learning motivation is $> \alpha$. Then H0 is accepted, this shows *that the covariance matrix* on the motivation variable and the individual learning outcomes are the same for the treatment variable. So that it can be continued with the *analysis of the multivariate test* (MANOVA).

2. Uji Hypothesis

This hypothesis test uses *the multivariate test* in the SPSS 24 program as follows:

a. Uji Multivariate Test

Table 7. Multivariate Test

Multivariate Tests ^a						
Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.998	12913.629 ^b	2.000	45.000	.002
	Wilks'	.002	12913.629 ^b	2.000	45.000	.002
	Lambda					

STAD	Hotelling's Trace	487.307	12913.629 ^b	2.000	45.000	.002
	Roy's Largest Root	487.307	12913.629 ^b	2.000	45.000	.002
	Pillai's Trace	.675	55.079 ^b	2.000	45.000	.002
	Wilks' Lambda	.325	55.079 ^b	2.000	45.000	.002
	Hotelling's Trace	2.078	55.079 ^b	2.000	45.000	.002
	Roy's Largest Root	2.078	55.079 ^b	2.000	45.000	.002

a. Design: Intercept + STAD

b. Exact statistic

In table 7, the multivariate test explains that the comparison test is taken from the average of the components of learning motivation and learning outcomes with treatments (experiments and controls) there are statistical tests, namely *pillai's trace*, *wilks' Lambda*, *Hotelling Trace*, *Roy's Largest Root*. The results of significant treatment by the Pillai's Trace, Wilks's Lambda, Hotelling's Trace, Roy's Largest Root. A significant value of 0.002 was obtained, where $0.002 < 0.05$ according to the criteria that H0 (reject) and H1 (accept) then the independent variable of *Student Teams Achievement Divisions* (STAD) showed an influence on the bound variables (motivation and learning outcomes)).

b. Uji of Between Subjects Effects

Tabel 8. Tests of Between-Subjects Effects

Tests of Between-Subjects Effects			
Source	Dependent Variable	F	Sig.
STAD	LEARNING MOTIVATION	49.658	.002
	LEARNING OUTCOMES	47.859	.002

Based on table 8, the significance of learning motivation shows $0.002 < 0.05$, it can be concluded that the average learning motivation shows an influence on the X *Student Teams Achievement Divisions* (STAD) variable. Meanwhile, in student learning outcomes, the mean value of $0.002 < 0.05$ means that it can be concluded that the average student learning outcomes show an influence on the X *Student Teams Achievement Divisions* (STAD) variable).

Discussion

This study aims to determine the influence of the *Student Teams Achievement Division* (STAD) type cooperative learning model on the motivation and learning outcomes of Natural Education students in class V SDIT Babies. This study uses two groups, namely the VB class as an experimental class that applies the *Student Teams Achievement Division* (STAD) model, and the VA class as a control class with the Direct Instruction model. STAD is a cooperative learning model that emphasizes learning activities that are more dominant by students, learning together with heterogeneous group members, collaborative discussion, participation and communication, team corps reports and reward.¹⁷ Meanwhile, Direct Instruction is more oriented towards the delivery of material by teachers.

In the early stages of the study, both classes were given a pretest to measure students' initial motivation. The results of the pretest showed changes for the VB and VA classes. This equivalence showed that before being treated, the learning motivation of the two classes was relatively homogeneous. Afterwards, the experimental class was treated with a STAD that focused on class presentations, group discussions, quizzes, individual development scores and *rewards*, while the control class continued to use hands-on learning that placed the teacher at the center of learning.

The learning process with the STAD model provides opportunities for students to actively participate, group cooperation and motivate each other between students to achieve maximum learning outcomes. This is in accordance with the theory of social constructivism put forward by Lev Vygotsky which states that learning occurs through social interaction, where students build their knowledge through discussion and cooperation with peers.¹⁸ A collaborative learning environment increases confidence and learning outcomes. Thus, students in the experimental class are more actively involved in the learning process compared to students in the control class.

After the treatment was completed, both classes were given a posttest to measure the increase in motivation and learning outcomes. The results showed that the average learning motivation score of the VB class was 106 and the VA class was 85.4. Meanwhile, the student learning outcome score showed that the VB class was more increased than the 5A class. This difference shows that there is a significant influence of the use of the *Student Teams Achievement Division* (STAD) model on student motivation and learning outcomes.

¹⁷ Muhammad Soni Amrulloh et al., "Implementasi Model Kooperatif STAD dalam Pembelajaran IPS," *Dirasah* 8, no. 2 (2025), <https://ejournal.iaifa.ac.id/index.php/dirasah>.

¹⁸ Jehan Nisak Nasution and Ryan Dwi Puspita, "Penerapan Pendekatan Konstruktivisme Untuk Membangun Pemahaman Dalam Pembelajaran IPAS Siswa Kelas VI SDIT Ar-Rayu," *Pendas : Jurnal Ilmiah Pendidikan Dasar* 10, no. 02 (2025).

These findings are in line with Slavin's opinion explaining that the *Student Teams Achievement Division* (STAD) model is able to increase students' motivation and learning achievement while improving social relationships, fostering tolerance and respect for the opinions of others and meeting students' needs to think critically, solve problems and integrate knowledge with experience. Thus, the application of the *Student Teams Achievement Division* (STAD) model in Natural Sciences (IPA) learning has proven to be more effective than direct learning, as it not only improves learning outcomes, but also fosters students' motivation to learn simultaneously.

1. Learning motivation

Learning motivation has an important role in determining the success of the learning process. According to Sardiman, learning motivation is the overall driving force in students that gives rise to learning activities, ensures the continuity of learning activities, and provides direction to these learning activities. In the context of this research, the application of the *Student Teams Achievement Division* (STAD) model has been proven to be able to increase students' learning motivation. This is because the *Student Teams Achievement Division* (STAD) model actively involves students in the learning process through real problem solving, group discussions, and individual responsibility for work results. According to Shoimin (2014), students who have high learning motivation tend to be more diligent, disciplined, and have a good learning plan to achieve learning goals. In the *Student Teams Achievement Division* (STAD) model, this condition can be seen when students actively participate in group activities, motivate each other and help each other with the given problems. These activities foster confidence and intrinsic satisfaction with learning outcomes. The results showed that the average learning motivation of VB class students was higher than that of VA class. This is in line with Zubaidah's opinion that in 21st century learning, learning motivation is an important factor in achieving learning success and independence. Group-based learning fosters mutual care, curiosity, enthusiasm, and students' internal drive to learn.

In addition, the *Student Teams Achievement Division* (STAD) provides students with the opportunity to experience meaningful learning by facing real-world problems. This encourages students to see the relationship between theory and practice, which in turn strengthens their motivation to learn. Thus, the *Student Teams Achievement Division* (STAD) not only affects learning outcomes, but also on students' internal motivation.

2. Learning outcomes

In addition to increasing learning motivation, the application of the *Student Teams Achievement Division* (STAD) type cooperative learning model also has a positive effect on students' Natural Sciences (IPA) learning outcomes. The posttest result data obtained from the experimental class and the control class showed a striking difference. The average posttest

score of students in the experimental class reached 87.40. while the average posttest score of students in the control class was only 75.25 These results confirm that the use of *the Student Teams Achievement Division* (STAD) type cooperative model is able to increase students' understanding and mastery of Natural Sciences (IPA) material more effectively than conventional learning methods. In terms of learning completeness, students in the experimental class showed more optimal achievements. This shows that the *Student Teams Achievement Division* (STAD) type cooperative model not only improves learning outcomes quantitatively, but also improves the quality of students' overall understanding. Interactive, fun, and challenging learning makes it easier for students to remember and understand the concepts of Natural Science (IPA) taught.

This improvement in learning outcomes is in line with constructivist learning theory which emphasizes the importance of students' active involvement in the learning process so that learning becomes meaningful and learning outcomes can be improved. The *Student Teams Achievement Division* (STAD) type cooperative learning model is one of the cooperative learning models that provides opportunities for students to discuss and exchange information, which ultimately deepens their understanding of the subject matter.

3. Student Motivation and Learning Outcomes

Simultaneous testing using MANOVA analysis showed that the *Student Teams Achievement Division* (STAD) type cooperative learning model had a significant influence on students' motivation and science learning outcomes simultaneously. This showed that the increase in learning motivation caused by *the Student Teams Achievement Division* (STAD) model had a positive impact on student learning outcomes.

High learning motivation encourages students to be more active in learning activities, more diligent, and more enthusiastic in understanding the subject matter, so that the learning outcomes obtained are also more optimal. On the contrary, good learning outcomes will strengthen students' motivation to continue learning and developing. This mutual relationship is an important basis for educators in designing effective learning strategies. Therefore, the application of a cooperative learning model of *the Student Teams Achievement Division* (STAD) type is highly recommended in Natural Sciences (IPA) learning at the elementary school level, especially to increase student motivation and learning outcomes at the same time. Teachers need to continue to develop creativity in using varied and interactive learning models so that the learning process becomes more interesting and effective.

CONCLUSION

Based on the results of the research that has been carried out, it can be concluded that the MANOVA test score obtained is $0.02 < 0.05$. This figure shows a significant influence of the use of the *Student Teams Achievement Division* (STAD) type cooperative learning model on learning motivation and student learning outcomes in Natural Sciences (IPA) subjects. In particular, this influence can be seen in the learning process in class V of SDIT Babies. This finding indicates that the application of the *Student Teams Achievement Division* (STAD) type cooperative learning method is able to increase student enthusiasm and involvement during teaching and learning activities. Increased learning motivation positively affects students' academic achievement, so that Natural Sciences (IPA) learning outcomes become more optimal. This also proves that innovative learning strategies are not only effective in delivering material, but also able to drive students' enthusiasm for learning as a whole. Thus, it can be said that the use of the *Student Teams Achievement Division* (STAD) type cooperative learning model makes a significant contribution to the Natural Sciences (IPA) learning process, especially at the elementary school level. This research also provides a strong basis for educators to consider the application of similar methods in an effort to improve the quality of learning and overall student learning outcomes.

ADVICE

Based on the above conclusions, the researcher would like to give suggestions: (1) Given that the application of the *Student Teams Achievement Division (STAD) type cooperative learning model* has a significant positive impact on student learning outcomes, it is highly recommended that this learning model can be implemented more widely and further developed in various other learning materials. With optimal development and implementation, it is hoped that this model will not only be able to improve learning outcomes, but also can increase student motivation and activeness in the learning process. This will help create a more interactive, fun, and effective learning atmosphere. (2) This research is expected to be a source of reference and reference material for other researchers who want to conduct follow-up studies related to the use of *Student Teams Achievement Division* (STAD) type cooperative learning models or other innovative learning models. Thus, this research can contribute to the development of education, especially in the realm of learning strategies and increasing student learning motivation. Because this study is only limited to the influence of the *Student Teams Achievement Division* (STAD) type cooperative learning model on students' motivation and science learning outcomes, especially from the cognitive aspect, the researcher suggests that the next research can examine other aspects that are also important, such as affective aspects (learning attitudes and interests) and psychomotor aspects (practical skills). Thus, future research results can provide a more

comprehensive picture of the influence of this learning model on the overall development of students.

BIBLIOGRAPHY

- Agustin, Vivin Nurul. "Peningkatan Aktivitas Dan Hasil Belajar Siswa Melalui Model Problem Based Learning (PBL)." *Journal of Elementary Education* 2, no. 1 (2016). <http://journal.unnes.ac.id/sju/index.php/jee>.
- Amrulloh, Muhammad Soni, Khoiruzzaim Kurniawan, and Arsyad Muhammad Sajjad. "Implementasi Model Kooperatif STAD dalam Pembelajaran IPS." *Dirasah* 8, no. 2 (2025). <https://ejournal.iaifa.ac.id/index.php/dirasah>.
- Aufa, Minzani, and Akhmad Liana Amrul Haq. "Pengaruh Model Student Teams Achievement Division (STAD) Terhadap Prestasi Belajar Siswa." *EDUKASI: Jurnal Penelitian & Artikel Pendidikan* 12, no. 2 (2020). <http://journal.ummg.ac.id/nju/index.php/edukasi>.
- Farhan, Muhammad, . Irawan, and Aan Hasanah. "Sikap Ilmiah Sebagai Pembentuk Iman dan Takwa Dalam Pembelajaran IPA Pokok Bahasan Alam Semesta Di Pesantren." *Literasi: Jurnal Ilmu Pendidikan* 15, no. 1 (2024). [https://doi.org/10.21927/literasi.2024.15\(1\).1-13](https://doi.org/10.21927/literasi.2024.15(1).1-13).
- Hasibuan, Ahmad Tarmizi, and Andi Prastowo. "KONSEP PENDIDIKAN ABAD 21: KEPEMIMPINAN DAN PENGEMBANGAN SUMBER DAYA MANUSIA SD/MI." *MAGISTRA: Media Pengembangan Ilmu Pendidikan Dasar dan Keislaman* 10, no. 1 (2019). <https://doi.org/10.31942/mgs.v10i1.2714>.
- Khairunnisa, Ejka Sabila, Azmi Al Bahij, and Muhamad Sofian Hadi. "Pengaruh Kecerdasan Emosional dan Kemampuan Berpikir Positif Terhadap Kemampuan Berpikir Kritis Ilmu Pengetahuan Alam di SD Negeri 17 Tanjungpandan Belitung: Penelitian." *Jurnal Pengabdian Masyarakat dan Riset Pendidikan* 4, no. 2 (2025). <https://doi.org/10.31004/jerkin.v4i2.4170>.
- Manihuruk, Waldio, Dede Ruslan, and Aman Simaremare. "Inquiry-based learning and motivation effects on fifth graders' IPAS achievement." *Inovasi Kurikulum* 22, no. 3 (2025). <https://doi.org/10.64014/jik.v22i3.68>.
- Mutia, Nasya, Talitha Najmilah Zahra Sismia, Kannaya Rizqi Ramadhani, and Azzahra Suryapusita. "Perbandingan Motivasi Belajar Siswa Melalui Metode Ceramah dan Digital." *JUPERAN: Jurnal Pendidikan dan Pembelajaran* 04, no. 02 (2025).
- Nasution, Jehan Nisak, and Ryan Dwi Puspita. "Penerapan Pendekatan Konstruktivisme Untuk Membangun Pemahaman Dalam Pembelajaran IPAS Siswa Kelas VI SDIT Ar-Rayu." *Pendas : Jurnal Ilmiah Pendidikan Dasar* 10, no. 02 (2025).
- Nur Syamsu, Fikri, Intan Rahmawati, and Suyitno Suyitno. "Keefektifan Model Pembelajaran STAD terhadap Hasil Belajar Matematika Materi Bangun Ruang." *International Journal of Elementary Education* 3, no. 3 (2019). <https://doi.org/10.23887/ijee.v3i3.19450>.
- Putri, Siti Wahdianti, Lukman Taufik, and Devi Qurniati. "Pengembangan Media Pembelajaran Kimia Berbasis Video Animasi Untuk Meningkatkan Motivasi Belajar Siswa SMAN 1 Wanasaba." *SPIN JURNAL KIMIA & PENDIDIKAN KIMIA* 4, no. 1 (2022). <https://doi.org/10.20414/spin.v4i1.5092>.
- Sari, Atmira Qurnia, Y. L. Sukestiyarno, and Arief Agoestanto. "Batasan Prasyarat Uji Normalitas Dan Uji Homogenitas Pada Model Regresi Linear." *Unnes Journal of Mathematics* 6, no. 2 (2017). <http://journal.unnes.ac.id/sju/index.php/ujm>.

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Sidik, Zafar, and A. Sobandi. "Upaya Meningkatkan Motivasi Belajar Siswa Melalui Kemampuan Komunikasi Interpersonal Guru." *Jurnal Pendidikan Manajemen Perkantoran* 3, no. 2 (2018). <https://doi.org/10.17509/jpm.v3i2.11764>.

Sutrisno, Sutrisno, and Dewi Wulandari. "Multivariate Analysis of Variance (MANOVA) untuk Memperkaya Hasil Penelitian Pendidikan." *AKSIOMA: Jurnal Matematika dan Pendidikan Matematika* 9, no. 1 (2018). <https://doi.org/10.26877/aks.v9i1.2472>.

Widiatmoko, Catur, Ratna Indriasari, Fathir Fajar Sidiq, and Definitif Endrina Kartini Mendrofa. "Penguatan Pendidikan Karakter Sebagai Wujud Pendidikan Berkualitas Dalam Upaya Mencapai Tujuan Pembangunan Berkelanjutan (SDGs)." *Jurnal Wahana Bina Pemerintahan* 6, no. 2 (2024). <https://doi.org/10.55745/jwbp.v6i2.273>.

Yusuf, Munir. "Manusia Sebagai Makhluk Pedagogik." *Didaktika: Jurnal Kependidikan* 8, no. 1 (2019). <https://jurnaldidaktika.org/>.

Zahroh, Fitri Lutfia, and Fitri Hilmiyati. "Indikator Keberhasilan dalam Evaluasi Program Pendidikan: Success Indicators in Educational Program Evaluation." *Edu Cendikia: Jurnal Ilmiah Kependidikan* 4, no. 03 (2024). <https://doi.org/10.47709/educendikia.v4i03.5049>.

Zulhijra, Zulhijra, and Firdaus Basuni. "Implementasi Model Kooperatif Tipe Student Teams Achievement Divisions (STAD) Pada Pembelajaran PAI Di Sekolah." *Muaddib: Islamic Education Journal* 6, no. 2 (2023).