



Improving Activity and Learning Outcomes Through the Student Team Achievement Divisions Learning Model for Elementary School Students

Peningkatan Keaktifan dan Hasil Belajar Melalui Model Pembelajaran *Student Team Achievement Divisions* Pada Materi Bangun Datar Sekolah Dasar

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Abstract

Learning mathematics is still considered a difficult thing for students. Therefore, the activity and learning outcomes of mathematics are still not optimal. Proper, interesting and fun learning needs to be done to obtain maximum learning outcomes. The purpose of this research is to increase the activeness and learning outcomes of mathematics through the STAD learning model. The type of research is classroom action research. Methods of collecting data by observation, interviews, and tests. The results showed that the activeness of learning the material of flat shapes has increased. The average learning activity in the first cycle was 73.26% with the moderately active category, in the second cycle it increased to 87.85% with the active category. The increase in student activity from cycle I to cycle II was 14.58%. The average student learning outcomes in the first cycle was 73, then in the second cycle increased to 85.6. The conclusion of this study is that the use of the STAD learning model can increase the activity and learning outcomes of mathematics in the fourth grade elementary school flat-building material.

Keywords: learning outcomes; liveliness; mathematics; STAD

Abstrak

Pembelajaran matematika dirasa sulit oleh siswa sehingga diperlukan pembelajaran yang tepat dan menarik agar memperoleh hasil yang maksimal. Tujuan dari penelitian ini adalah untuk meningkatkan keaktifan dan hasil belajar matematika melalui model pembelajaran STAD. Jenis penelitian ini adalah penelitian tindakan kelas. Metode pengumpulan data dengan observasi, wawancara, serta tes. Hasil penelitian menunjukkan bahwa keaktifan belajar materi bangun datar mengalami peningkatan. Rata-rata keaktifan belajar siklus I adalah 73,26 % dengan kategori cukup aktif, pada siklus II meningkat menjadi 87,85 % dengan kategori aktif.

Peningkatan keaktifan siswa dari siklus I ke siklus II adalah 14.58%. Rata-rata hasil belajar peserta didik pada siklus I adalah 73, kemudian pada siklus II meningkat menjadi 85,6. Simpulan dari penelitian ini adalah penggunaan model pembelajaran STAD dapat meningkatkan keaktifan dan hasil belajar matematika pada materi bangun datar kelas IV sekolah dasar.

Kata kunci: hasil belajar; keaktifan; matematika; STAD

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Introduction

Mathematics learning is an important education that should be provided to students. Mathematics learning can cultivate students' mindset in everyday life. In general, mathematics learning faces obstacles such as low interest in learning, the assumption that mathematics is difficult, and boring teaching methods. This is reinforced by the belief (Pangestika & Ratnaningsih, 2019) that fear of mathematics is a common thing. Learning becomes monotonous due to the activities that merely involve memorizing theories. Therefore, the role of teachers in creating a comfortable and enjoyable classroom atmosphere is crucial. The selection of teaching models needs to be done to make the learning process enjoyable and maximize learning outcomes. Learning outcomes refer to the abilities possessed by students after undergoing the learning process. According to (Novita et al., 2019), learning outcomes are changes within students themselves after receiving instruction. Mathematics learning in the fourth grade teaches plane geometry. Understanding plane geometry is highly important for students. Plane geometry is a part of solid geometry, so if students don't grasp the concepts of plane geometry, they will face difficulties in understanding related topics on solid geometry in the future (Utama et al., 2019).

Learning is carried out systematically to educate students. However, the reality in the field is that many problems hinder the learning process from being effective, such as students who struggle to engage, teachers who lack effectiveness in teaching, and the need for appropriate teaching models. (Dewantara & Nurgiansah, 2021) State that cooperation from all parties is necessary to ensure a successful and active learning process. Teachers, who play a crucial role, should be role models for students. As the future generation, students should actively participate in the learning process.

Active learning is an essential element for the success of any educational process. Students who actively participate in learning activities can develop their abilities. According to (Prasetyo & Abduh, 2021), active learning is a series of instructional activities that can develop students' potential and contribute to their academic achievements. Furthermore, according to (Aris et al., 2021), being actively engaged indicates success in the learning process, which involves students participating in discussions, problem-solving, asking questions, and more.

Based on observations and interviews with classroom teachers, it is known that both student engagement and learning outcomes in plane geometry are still low. Only 30% of students achieve mastery in understanding the concepts of plane geometry, while their level of engagement is currently at 40%. The low learning outcomes can be attributed to students not paying close attention to the instructional materials.

Recognizing the need for improvement and increased student engagement and learning outcomes, the researcher decided to use the Student Teams Achievement Divisions (STAD) instructional model. The STAD instructional model is a simple cooperative learning model that integrates various methods and emphasizes student activities such as interaction, communication, and mutual assistance within group activities (Setyaningrum, 2019). Research conducted by Salo (2018), (Soniah, 2021), (Sumilat, 2021) dan (Hazmiwati, 2018) indicates that the use of the STAD instructional model can enhance student engagement and learning outcomes.

The advantages of the Student Teams Achievement Divisions model include students being able to collaborate with their peers, develop individual skills, build self-confidence, and appreciate the differences and abilities of each student. However, the drawbacks of the Student Teams Achievement Divisions model are that it requires more time and readiness from both teachers and students to implement the model effectively (Ariani & Agustini, 2018). The aim of this research is to investigate and describe the improvement in student engagement and learning outcomes in the topic of plane geometry in fourth-grade elementary school.

Method

This study utilizes the Classroom Action Research method. Classroom action research observes all student activities, teacher and instructional practices, as well as student learning outcomes during the learning process (Sumilat, 2021). According to (Sanjaya, 2016), classroom action research is a process of examining classroom issues through planned actions and analyzing the effects obtained from each action. (Sani, 2020) states that classroom action research is the implementation of planned actions within the classroom to improve the learning process. Classroom action research is conducted by teachers with the aim of developing and improving the quality of learning within the classroom (Arikunto, 2021).

The subjects of this research are 20 fourth-grade elementary school students, consisting of 12 boys and 8 girls. Data collection is done through both test and non-test methods. The procedure for conducting classroom action research consists of four stages: 1) Planning stage, where the teacher prepares the lesson plans, syllabus, evaluation questions, and the development of observation instruments for student engagement. 2) Action implementation stage, where the actions are carried out based on the prepared lesson plans. 3) Observation stage, where the researcher observes the ongoing learning process. 4) Reflection stage, where conclusions are drawn based on the research findings.

Result

Learning Outcomes

The classroom action research conducted in this study consists of two cycles. The research was conducted in May 2022. The purpose of the research was to measure the students' success and determine the improvement in their learning outcomes using the STAD model. The following are the students' learning outcomes in the pre-cycle:

Table 1 *Pre-Cycle Learning Outcomes*

No	Category	Value	Frequency
1	Very good	90-100	0
2	Good	80-89	1
3	Pretty good	65-79	5
4	Not good	55-64	9
5	Very Less Good	<55	5

Based on Table 1, the highest frequency in the pre-cycle mathematics learning outcomes was the acquisition of scores of 55-64 of 9 children in the less good category. The results of learning flat wake material in cycle I can be seen in Table 2.

Table 2 *Learning Outcomes of Cycle I*

No	Category	Value	Frequency
1	Very good	90-100	0
2	Good	80-89	5
3	Pretty good	65-79	12
4	Not good	55-64	3
5	Very Less Good	<55	0

Table 2 shows that the acquisition of scores with the highest frequency is in the range of values 65-79, with a fairly good category totaling 12 children. The results of learning to wake up flat in cycle II can be seen in Table 3.

Table 3 *Learning Outcomes of Cycle II*

No	Category	Value	Frequency
1	Very good	90-100	6
2	Good	80-89	12
3	Pretty good	65-79	2
4	Not good	55-64	0
5	Very Less Good	<55	0

Table 3 shows that the acquisition of scores with the highest frequency is in the range of values 80-89 with a good category totaling 12 children. The least frequency is in the range of values 65-79, with a fairly good category.

Learning Activeness

The obtaining data on student learning activeness through activity observation sheets comprises six aspects. These aspects are, 1) Pay attention and listen to the teacher's explanation. 2) Active in groups. 3) Answer the teacher's questions. 4) The ability to remember the material delivered by the teacher 5) Presenting arguments to the teacher or friends. 6) Dare to ask – the following results from observing students' active learning during the pre-cycle.

Table 4 *Percentage of Pre-Cycle Activity*

No	Aspect	Activity Percentage
1	Pay attention and listen to the teacher's explanation	60%
2	Active in groups	66.25%
3	Answer the teacher's questions	68.75%
4	The ability to remember the material presented by the teacher	66.25%
5	Express opinions to teachers or friends	62.50%
6	Dare to ask	60%

Based on Table 4, the average condition of student learning activeness during the pre-cycle is 63.9%. Furthermore, the results of observing the activity of each aspect observed in cycle I can be seen in Table 5.

Table 5 *Percentage of Cycle I Activity*

No	Aspect	Activity Percentage
1	Pay attention and listen to the teacher's explanation	71.3%
2	Active in groups	70.8%
3	Answer the teacher's questions	75.8%
4	The ability to remember the material presented by the teacher	72.1%
5	Express opinions to teachers or friends	75.4%
6	Dare to ask	74.2%

Based on Table 5, it can be seen that the results of the observation of active learning cycles have not reached indicators of success. The average percentage of activity in cycle I was still below 80%, namely 73.3%. Then the observation results of learning activeness in cycle II can be seen in the following table.

Table 6 *Percentage of Cycle II Activity*

No	Aspect	Activity Percentage
1	Pay attention and listen to the teacher's explanation	85.8%
2	Active in groups	87.1%
3	Answer the teacher's questions	87.9%
4	The ability to remember the material presented by the teacher	89.6%
5	Express opinions to teachers or friends	91.3%
6	Dare to ask	85.4%

Following Table 6, it can be seen that the observation of active learning cycle II results has achieved success indicators. The average percentage of activity in cycle II was 87.8%.

Discussion

Learning Outcomes

The research conducted by Mausuli in 2019 analyzed that the STAD cooperative learning model has been proven to enhance students' activities, learning outcomes, and teacher performance. The similarity to this study is the implementation of the STAD cooperative learning model to promote students' engagement and learning outcomes. The difference lies in the subjects and the learning material used. This classroom action research was conducted in a fourth-grade class focusing on the topic of plane geometry. The research took place in May 2022 and consisted of two cycles, with four meetings in each cycle.

During the first cycle, the research followed four stages: planning, implementation of actions, observation, and reflection. The planning stage was carried out by the researcher in collaboration with the classroom teacher, involving setting the research timeline and obtaining permission for the study. In this stage, a lesson plan (RPP) was developed, incorporating the steps of the STAD model and creating plane geometry questions. The next stage was the implementation of actions, where the prepared lesson plan served as a guide. The core activities followed the syntax of the STAD learning model. First, the teacher presented the learning objectives. Second, the students were divided into heterogeneous groups of four. Third, the teacher delivered the lesson on plane geometry, and the students observed the presented geometric shapes. Fourth, the groups were assigned tasks that they worked on through discussions. Afterward, each group representative presented the results of their discussion to the class, and appreciation was given to students who volunteered to present. Fifth, the teacher evaluated the students' performance.

The observation stage focused on monitoring students' activities during the learning process in the classroom. In the first cycle, students showed sufficient attention to the teacher's explanations, displayed discipline, and became more active during the lesson. An assessment test was administered to the students during the fourth meeting. The test results indicated that the average score for the class in the first cycle was 73.10. The highest score obtained was 80, while the lowest was 60. Nine students successfully completed the test. Considering these results, the implementation of the STAD model in the first cycle did not meet the success indicators.

The final stage was reflection, which involved evaluating the effectiveness of the STAD learning model implementation. After conducting the actions over four meetings, the researcher interviewed the teacher. The interview results showed that the fourth-grade students were quite enthusiastic during the plane geometry lessons using the STAD model. However, some students still tended to play individually with their friends and occasionally lacked participation in group activities. This behavior was attributed to the students' initial exposure to the STAD learning approach, requiring some adaptation. The learning outcomes showed that only 45% of the students achieved mastery, with an average class score of 73.10. Considering the lack of success in the first cycle, a second cycle was conducted.

The stages in the second cycle are the same as the first cycle, but there are improvements in each stage. Here are the implementation stages of the STAD learning model in the second cycle. The planning stage involves preparing the STAD learning model. The teacher improves their explanation and implementation of the STAD model to enhance learning outcomes. In the action stage, the core activities align with the steps of the STAD model. First, the teacher states the learning objectives. Second, heterogeneous groups of four students are formed. Third, the teacher presents the lesson, and the students pay full attention to the explanation. Fourth, group assignments are given, and students discuss them with their group members while the teacher supervises the discussions. The results of the discussions are presented by representatives of each group. Fifth, the teacher evaluates the students.

The next stage is observation, where the activities and progress of the learning process are observed. In the second cycle, the teacher's explanation receives full attention from the students. Furthermore, the learning process using the STAD steps runs smoothly and appropriately. In the fourth meeting, the students take a learning outcome test. The test results show that the average class score in the second cycle is higher than the previous cycle, reaching 85.60. The highest score obtained is 100, and the lowest is 76. All 20 students in the fourth grade completed the test successfully. Considering the learning outcomes in the second cycle, the learning process has met the indicators of success. There are factors that influence learning outcomes, both internal and external. Internal factors originate from the students themselves, such as physical condition, psychological factors, and fatigue. External factors include family, school, and the environment (Karina et al., 2017). In the second cycle of learning, external factors have positively supported the learning process, leading to improved learning outcomes.

The final stage is reflection, which involves assessing and drawing conclusions to determine the effectiveness and success of the STAD learning model implementation. After implementing the actions over four meetings, the researcher conducts an interview with the teacher. The results of the interview conclude that there is an increase in student engagement. The implementation of the STAD learning model has been successful, with students showing courage in expressing their opinions and actively participating in discussions. The average learning outcome in the second cycle is 85.60, categorized as

good. All 20 students have achieved learning outcomes above the minimum passing grade of 75.

Learning Activeness

Active learners can shape students' thinking patterns. Students' comprehension stimuli can be obtained through active participation in learning, which in turn forms thinking patterns (Nurhayati, 2020). According to (Puspitaningdyah & Purwanto, 2018), students who actively engage in the learning process will gain valuable experiences and achieve higher learning outcomes.

Based on the results of the observation of student engagement in the first cycle, it is shown that one student falls into the category of less active, 17 students fall into the category of moderate, and two students fall into the category of active. During the observation, several issues were identified, such as insufficient time duration and students who were not fully prepared to implement the STAD model. The overall average student engagement in the first cycle of learning was 73.26%, categorized as moderately active. The students' discussion activities within their groups were considered moderately active. The participation of students in group activities showed their courage. However, in terms of understanding the material, students were not able to accurately remember the concepts taught by the teacher. There were mistakes in recalling the formulas for perimeter and area of plane figures.

To address these issues, field notes were taken, and student engagement assessment sheets were filled out. The results of the observation in the second cycle showed an improvement in student engagement. The average percentage of student engagement was 87.85%, categorized as active. The aspect that received the highest score was expressing opinions to both teachers and other students, with a score of 91.3%. On the other hand, the aspect with the lowest score was the willingness to ask questions, with a score of 85.4%. Students showed courage in expressing their opinions to their peers. Additionally, students demonstrated a proper and comprehensive understanding of the material.

Conclusion

Based on the research findings, it can be concluded that mathematics learning outcomes in the topic of plane figures can experience improvement with the STAD learning model. The aspect of student engagement, such as paying attention and listening to the teacher's explanations, showed improvement from Cycle I to Cycle II. The aspect of expressing opinions to the teacher or peers also experienced improvement in Cycle II, as students became more courageous and confident during the activities in Cycle II.

Reference

- Ariani, T., & Agustini, D. (2018). Model Pembelajaran Student Team Achievement Division (STAD) dan Model Pembelajaran Teams Games Tournament (TGT): Dampak terhadap Hasil Belajar Fisika. *Science and Physics Education Journal (SPEJ)*, 1(2), 65–77.
DOI: <https://doi.org/10.31539/spej.v1i2.271> diakses tanggal 9 Agustus 2022
- Arikunto, S. (2021). *Penelitian Tindakan Kelas Edisi Revisi* (Suryani (ed.); Revisi). Bumi Aksara.
- Aris, D., Widyasari, A., Pendidikan, F. I., Pendidikan, F. I., Article, H., Melalui, D., Cooperative, M., & Tipe, L. (2021). *Peningkatan Keaktifan Belajar Peserta Didik Melalui Model Cooperative Learning Tipe STAD Pada Pembelajaran Tema 9 Kelas V SD Negeri 1 Tamanrejo Tahun Pelajaran 2020/2021*. 1(2), 171–180.
- Dewantara, J. A. D., & Nurgiansah, H. (2021). *Peningkatan Keaktifan Belajar Melalui Penerapan Model Picture And Picture Dalam*. 11.
<https://ojs.unm.ac.id/pubpend/article/view/18267/pdf> diakses tanggal 17 Agustus 2022
- Hazmiwati. (2018). Model Pembelajaran Kooperatif Tipe STAD, Hasil Belajar IPA Siswa Kelas II Sekolah Dasar. *Jurnal Primary Program Studi Pendidikan Guru Sekolah Dasar Fakultas Keguruan Dan Ilmu Pendidikan Universitas Riau*, 7(1), 178–184.
: <https://primary.ejournal.unri.ac.id/index.php/JPFKIP/article/view/5359> diakses tanggal 10 September 2022
- Karina, R. M., Syafrina, A., & Habibah, S. (2017). Hubungan Antara Minat Belajar Dengan Hasil Belajar Siswa Dalam Mata Pelajaran IPA Pada Kelas V SD Negeri Garot Geuceu Aceh Besar. *Jurnal Ilmiah Pendidikan Guru Sekolah Dasar*, 2(1), 61–77.
- Novita, L., Sukmanasa, E., & Pratama, M. Y. (2019). Penggunaan Media Pembelajaran Video terhadap Hasil Belajar Siswa SD. *Indonesian Journal of Primary Education*, 3(2), 64–72.
- Pangestika, R. R., & Ratnaningsih, A. (2019). *Peningkatan Aktivitas Siswa melalui*
PiJIES: Pedagogik Journal of Islamic Elementary School

Pendekatan Kontekstual berbasis Alam dalam Pembelajaran Matematika di Sekolah Dasar. 1, 139-147.

<https://publikasiilmiah.ums.ac.id/xmlui/handle/11617/11192> diakses tanggal 5 Oktober 2022

- Prasetyo, A. D., & Abduh, M. (2021). Peningkatan Keaktifan Belajar Siswa Melalui Model Discovery Learning Di Sekolah Dasar. *Jurnal Basicedu*, 5(4), 1717-1724.
- Salo, Y. A. (2017). Pengaruh Metode Discovery Learning Terhadap Keaktifan Belajar Siswa (Studi Quasi Eksperimen Kelas Vii Smpn 6 Banda Aceh). *Jurnal Penelitian Pendidikan*, 16(3), 297-304. DOI: <https://doi.org/10.17509/jpp.v16i3.4825>
- Sani, R. A. (2020). *Panduan Praktis Penelitian Tindakan Kelas*. PT Remaja Rosdakarya.
- Sanjaya, W. (2016). *Penelitian Tindakan Kelas*. Prenada Media.
- Setyaningrum, D. (2019). Peningkatan Keaktifan Belajar Matematika Kelas VI SD Pada Materi Operasi Hitung Bilangan Bulat Melalui Model Pembelajaran Kooperatif Tipe STAD. *Social, Humanities, and Education Studies (SHEs): Conference Series*, 3(4), 9-25. DOI: <https://jurnal.uns.ac.id/shes>
- Soniah, P. (2021). *Model Pembelajaran STAD (Student Teams Achievement Divisions)*.
- Sumilat, J. M. (2021). Model Pembelajaran Kooperatif Tipe STAD (Student Teams Achievement Divisions) Untuk Meningkatkan Hasil Belajar Siswa Sekolah Dasar. *Edukatif: Jurnal Ilmu Pendidikan*, 3(3), 865-870.
- Utama, L. V., Widodo, N., & Wilujeng, E. C. (2019). Peningkatan Hasil Belajar Materi Keliling dan Luas Bangun Datar Melalui Model Discovery Learning Pada Siswa Kelas IV-A Sekolah Dasar. *Jurnal Pemikiran Dan Pengembangan Sekolah Dasar (JP2SD)*, 7(April), 52-59.