Journal of Research in Instructional
e-ISSN: 2776-222X
Vol. 4(1) 2024, pp. 59 – 66
https://doi.org/10.30862/jri.v4i1.317

Implementation of STAD learning model to improve students' learning outcomes

Rolina Wati Sirait, Silvia Hanna Kusuma Sirait*, Jeni Jeni

Universitas Papua, Indonesia

Submitted: 18-12-2023

Accepted: 18-01-2024

Published: 22-01-2024

Abstract: The aim of the research was to decide the implementation of the Student Teams Achievement Division (STAD) learning model on the learning outcomes of students in class VII-A at State Junior High School 10 Manokwari. This was a classroom action research that used 16 students from class VII-A as subjects. This research consists of 2 cycles. Each cycle has four stages: Planning, Action Implementation, Observation and Reflection. The results showed that in cycle 1 the average percentage of student learning outcomes reached 63,75, in cycle 1 only 7 students obtained the criteria for completion with a percentage of 43,75% and 9 students who obtained the criteria for incomplete with a percentage of 56,25%. While in cycle 2 the average student learning outcomes have reached 79,37, in cycle 2 who obtained the complete criteria were 15 students with a percentage of 93,75% and only 1 student who obtained the incomplete criteria with a percentage of 6,25%. The research conclude that student learning outcomes can be improved by implementing the STAD learning model.

Keywords: Biology students, learning outcomes, STAD learning

Abstrak: Tujuan penelitian adalah untuk mengetahui implementasi model pembelajaran Student Teams Achievement Division (STAD) terhadap hasil belajar peserta didik kelas VII-A SMP Negeri 10 Manokwari. Penelitian ini adalah penelitian tindakan kelas yang menggunakan 16 peserta didik kelas VII-A sebagai subjek penelitian. Penelitian ini terdiri dari 2 siklus. Setiap siklus memiliki empat tahapan yaitu Perencanaan, Pelaksanaan tindakan, Observasi dan Refleksi. Hasil penelitian memperlihatkan bahwa pada siklus 1 rata-rata persentase hasil belajar peserta didik mencapai 63,75, pada siklus 1 hanya 7 peserta didik yang memperoleh kriteria tuntas dengan persentase 43,75% dan 9 peserta didik yang memperoleh kriteria tuntas dengan persentase sebesar 56,25%. Sedangkan pada siklus 2 rata-rata hasil belajar peserta didik telah mencapai 79,37, pada siklus 2 yang memperoleh kriteria tuntas sebanyak 15 peserta didik dengan persentase 93,75% dan hanya 1 peserta didik yang memperoleh kriteria tuntas dengan persentase 6,25 %. Penelitian menyimpulkan bahwa hasil belajar peserta didik dapat ditingkatkan dengan implementasi model pembelajaran STAD.

Kata kunci: Siswa biologi, hasil belajar, pembelajaran STAD

*Corresponding author: h.sirait@unipa.ac.id

INTRODUCTION

State Junior High School 10 Manokwari is one of the receptacles of education in Manokwari city which has produced many alumni learners. The learning process is conducted in State Junior High School 10 Manokwari in order to achieve the learning objectives with the hope that learners get the best science as much as possible. The success of Education involves many parties, including teachers and learners (Baransano et al., 2017; Mirzuandi et al., 2024; Nasir et al., 2020; Yomaki et al., 2023). The ability of teachers to transfer science to influential learners is important in the learning process (Nasir et al., 2023; Yunita et al., 2023). Properly transferred science will bring high learning results for learners (Damopolii et al., 2019; Sirait et al., 2022). The process of transferring knowledge can be carried out in various ways, for example using appropriate strategies, methods or learning models (Atsani & Hadisaputra, 2024; Gonibala et al., 2024; Safitri et al., 2021;

Welerubun et al., 2022. When conducting observations through discussions with one of the teachers, it was discovered that there were problems in the class, namely: student learning outcomes were low because the learning models used were not yet varied. Teachers tend to choose lecture methods without using an innovative learning model. Exam for science subjects, the highest score of 16 learners in a class, VII-A class, gets only 50 out of minimum completeness criteria of 65. Therefore, teachers need to use a more effective learning model to enhance learning outcomes.

The cooperative learning model known as STAD (Student Teams Achievement Division) is one of the many learning models that can be used in a learning process. According to Kaharuddin and Liasambu (2019), and Werimon et al. (2017), the STAD learning is a straightforward cooperative learning model or method that can enhance learning outcomes, activities, and student reactions. Teachers' involvement in learning management, learners' engagement during the learning process, and learners' learning outcomes have all increased with the introduction of STAD learning (Pardiyana, 2020). The application of the STAD cooperative learning paradigm in the construction cost estimating course can enhance student learning outcomes (Mardizal & Tarmizi, 2021).

The following are some benefits of STAD learning: 1) Learners collaborate to achieve objectives by maintaining group norms; 2) Engaged learners support and inspire the desire to succeed collectively; 3) Active learners serve as peer tutors to further enhance group success; 4) Learners interact as their reasoning skills advance; 5) Strengthen individual prowess; 6) Increase group proficiency; and 7) Have no sense of resentment. However, there are disadvantages to STAD as well. First, low-achieving students' contributions decrease (making them feel less), and second, high-achieving students will grow dissatisfied since those who participate more actively in the group will receive less attention (Nur Syamsu et al., 2019). Cooperative learning using the STAD model works well in the classroom. According to STAD-style cooperative learning, it was superior to conventional learning (Gunawan et al., 2022).

The STAD model can be used by biology as a science to aid in its learning process. This is so that STAD may actively contribute to the success of the group by acting as a peer tutor. Improving group learning effectiveness can also enhance students' traditional learning objectives. Based on the above description, the researcher chose to incorporate the STAD model into the biology curriculum for classes VII–A. Higher student learning results are the result of this research's application of the STAD paradigm.

METHOD

This two-cycle study had 16 students in class VII-A at State Junior High School 10 Manokwari participating in classroom action research. Cycle I was completed in the following four (4) stages:

1. Planning

Researchers created Student Worksheets, a Learning Implementation Plan to assist teachers in implementing lessons in the classroom, and assessment tools, which took the form of test questions for each cycle, at each meeting. Before being utilized in the learning process, all assessment and learning aids are subjected to expert validation.

2. Implementation

The following is how the cooperative learning model of STAD type was implemented during the learning process:

a. Joint prayer, apperception, delivery of basic competencies, motivation and learning objectives by teachers.
b. Students were split up into four to five member small groups.
c. Brief presentation of lesson material.
d. The teacher invites each group to have a discussion to work on the Student Worksheets.
e. At the cycle I meeting, an assessment test was administered to students in order to ascertain their learning outcomes.
f. The teacher gives awards to the group that gets the highest score.
g. Together, both teachers and students sum up the subject content.

3. Observation

During the observation stage, teachers' and students' activities during the application of learning in the classroom were assessed. Evaluation was carried out on events that occur during the implementation of learning in class and reflection material was taken based on the problems that arise.

4. Refletion

At this stage, researchers analyze teacher and student activities as well as learning outcomes and obstacles in the learning process which are then used as reflection material for improvements in the next cycle. This aims to improve in cycle II.

Cycle II of the research was conducted if the learning outcomes do not meet expectations. Cycle II follows the same stages as cycle I. In order to ascertain the rise in teacher and student activity as well as student learning outcomes, researchers can distinguish between cycle I and cycle II data at this point.

Class action success criteria

Indicators of success in this research included improving student learning outcomes, which were defined as:

1. Students achieve minimum completion criteria with a minimum score of 65.
2. Classical completeness of 75% is achieved

The following formula was used to determine the learning outcomes for every single student:

$$\text{Individual student grades} = \frac{\text{score obtained}}{\text{maximum score}} \text{ x } 100 \quad (1)$$

Data analysis technique

To evaluate the improvement in learning outcomes that took place the percentage of learning completeness in cycles I and II of the STAD type cooperative learning model implementation was compared. The percentage of learning completion was calculated by multiplying the total number of students by 100 and comparing the number of students who have finished their studies.

$$\% \text{ completeness} = \frac{\text{the amount of students who have completed learning}}{\text{maximum amount of students}} \text{ x } 100 \quad (2)$$

RESULTS AND DISCUSSION

Student activities

A comparison between students activities of cycle I and II can be seen in Figure 1.

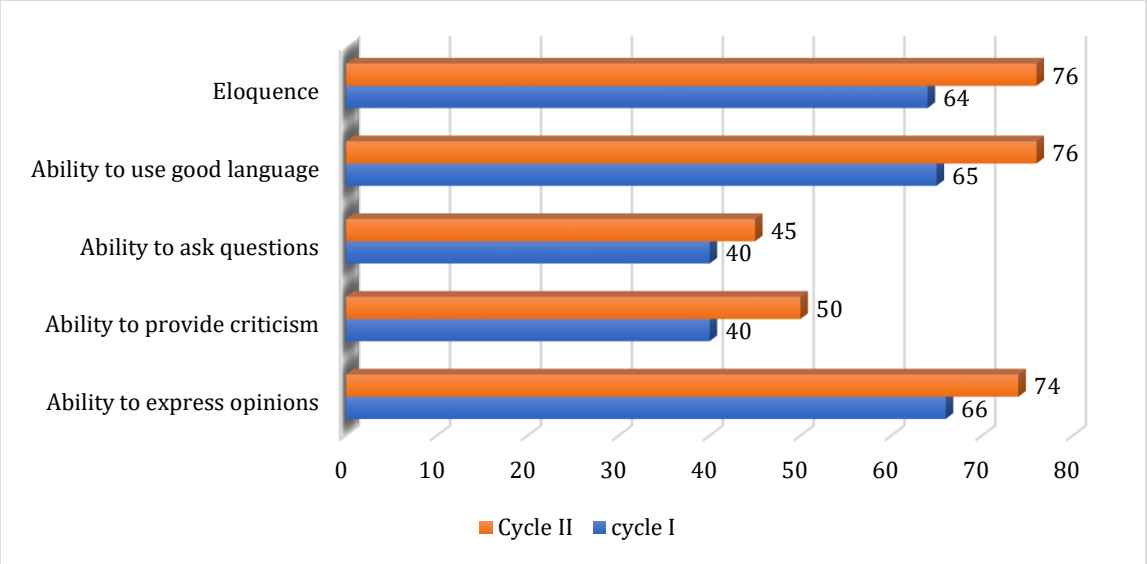

Fig. 1. Student activities of cycle I and II

In cycle I, the average student activity percentage when using the STAD learning was 55%. This is because the new learning model was implemented by researchers in class VII-A. Students had to learn to adapt as a result of new learning models being used in classroom activities (Jumini, 2022; Agustyaningrum et al., 2022). This initial process of adaptation was seen when most students found it difficult to learn to discuss in groups.

In cycle II, the average student activity percentage rose to 64.2%. Students have adapted to the implementation of the STAD learning model. One of them was characterized by the ease with which students carry out discussions in groups. Thus, there was a 9.2% improvement in the outcomes from cycle I to cycle II based on student activity observations.

Student learning outcomes

Figure 2 shows a comparison of the learning outcomes of students in cycles I and II. One student was in the very good category with a learning outcomes percentage of 6.25%, according to the results of the learning test with multiple choice questions consisting of 10 questions, based on the students' learning outcomes of cycle I on the classification of living creatures material. There are four students in the fair category with a learning result percentage of 25%, and two students in the good category with a percentage of 12.5%. Afterwards, nine students with a 56.25% achievement in school percentage were classified as low. So in cycle I, there were 7 students who got the criteria for completing it with a percentage of 43.75%, while there were 9 students who got the criteria for not completing it with a percentage of 56.25%.

The results of the learning test, which comprised ten multiple-choice questions, show that five students met the learning outcomes of cycle II on the classification of living creatures material. Their learning outcomes percentage was 31.25%, placing them in the good category. There are five students with a learning achievement percentage of 31.25%, then in the sufficient category there are five students with a percentage of 31.25% and there is one student with a poor category of 6.25%. So in cycle II there were fifteen students who obtained the complete criteria of 93.75% and one student who received the incomplete criteria of 6.25%.

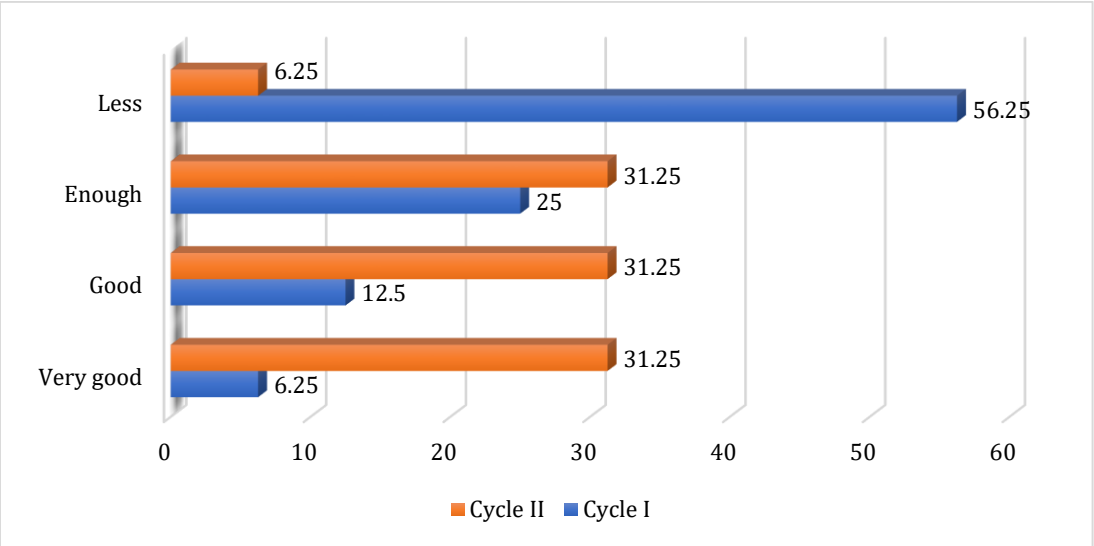

Fig. 2. Students learning outcomes of cycle I and II

The percentage of classical completion for class VII-A at SMP Negeri 10 Manokwari can be seen in Figure 3.

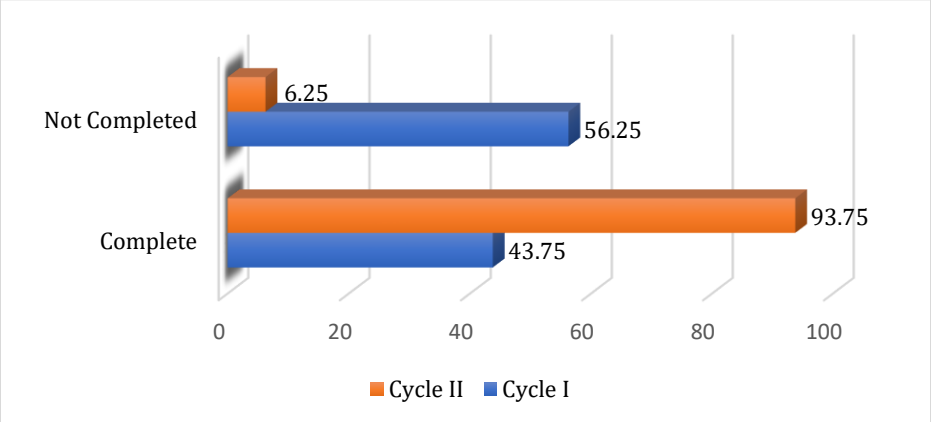

Fig. 3. Classical completeness of cycle I and II

Figure 3 illustrates the decline in non-completion from cycle I (43.75%) to cycle II (6.25%). From cycle I to cycle II, classical completeness improves as a result 43.75% of students finished it in cycle I, and 93.75% of students did so in cycle II.

Student activities influence the success of a learning process. By implementing the right learning model, it can help increase students' learning activities (Annisa & Marlina,

2019; Anggara & Rakimahwati, 2021; Fadhilatunisa et al., 2020). This was in line with the results of this research where there was an improvement in student activity. In the five activities observed during learning, it was found that in cycle I student activities get an average percentage of 55% and then increased in cycle II to 64.2%. The second cycle of reimplementation familiarizes students with every assignment in the STAD type cooperation model's syntax. Cooperative learning helps students to actively become peer tutors so that the increase in students interacting was in line with the increasing ability to demonstrate their abilities. Increasing the ability to express opinions can improve individual and group skills.

Activity influences students' learning outcomes, high activity produces high learning outcomes (Putri et al., 2019; Novianti et al., 2020; Pujiastuti & Fitriani, 2021; Roosyanti & Suryarini, 2024). The learning results in cycle I were not as expected because the STAD model was still unfamiliar to students. So based on the evaluation results of cycle I the research was continued to cycle II. Students' engagement and learning outcomes both rose as a result of cycle II's continued implementation of the STAD model. Students are able to voice their opinions, learn about the material they have learned, and develop their communication skills in the cooperative learning model of the STAD type. Each group member bears responsibility for the group's success, including information exchange (Anisensia et al., 2020).

Based on cycle II improvement outcomes, it is evident that State Junior High School 10 Manokwari students in class VII-A have achieved minimum completeness by using the STAD learning, which has led to higher scores. Therefore possible to conclude that the implementation of the STAD cooperative learning model contributed to the improvement in student learning outcomes. Research by Winanti (2022), Anisensia et al. (2020), and Suardiana (2021) lends credence to this. STAD learning is a straightforward cooperative learning model or method that can enhance activities, learning outcomes, and student responses (Kaharuddin & Liasambu, 2019).

CONCLUSION

Drawing on the issues and findings of two cycles of action research, it can be said that the implementation of the STAD learning model to material classification of living creatures in class VII-A of State Junior High School 10 Manokwari can improve student learning outcomes.

REFERENCES

Agustyaningrum, N., Pradanti, P., & Yuliana. (2022). Teori perkembangan Piaget dan Vygotsky : Bagaimana Implikasinya dalam pembelajaran matematika sekolah dasar? *Jurnal Absis: Jurnal Pendidikan Matematika Dan Matematika*, *5*(1), 568–582. https://doi.org/10.30606/absis.v5i1.1440

Anggara, A., & Rakimahwati, R. (2021). Pengaruh model quantum learning terhadap aktivitas dan hasil belajar peserta didik dalam pembelajaran tematik di sekolah dasar. *Jurnal Basicedu*, *5*(5), 3020–3026. https://jbasic.org/index.php/basicedu/article/view/1265

Anisensia, T., Bito, G. S., & Wali, M. (2020). Penerapan model pembelajaran kooperatif tipe STAD untuk meningkatkan hasil belajar matematika pada siswa kelas V SDI Blidit

Kabupaten Sikka. *Prima Magistra: Jurnal Ilmiah Kependidikan*, *1*(1), 61–69. https://doi.org/10.37478/jpm.v1i1.351

Annisa, F., & Marlina, M. (2019). Penerapan model pembelajaran kooperatif tipe index card match terhadap aktivitas dan hasil belajar matematika peserta didik. *Jurnal Basicedu*, *3*(4), 1047–1054. https://doi.org/10.31004/basicedu.v3i4.209

Atsani, L. G. M. Z., & Hadisaputra, P. (2024). Promoting harmony and renewal: The transformation of peace education within the islamic education curriculum. *Journal of Research in Instructional*, *4*(1), 1–11. https://doi.org/10.30862/jri.v4i1.303

Baransano, A. Y., Yohanita, A. M., & Damopolii, I. (2017). Penerapan model pembelajaran picture and picture untuk meningkatkan hasil belajar biologi siswa kelas XI IPA SMA YABT Manokwari. *Prosiding Seminar Nasional MIPA II Universitas Papua Tahun 2017*, 273–280.

Damopolii, I., Botutihe, V. T., & Nunaki, J. H. (2019). The contribution of science process skill towards students cognitive achievement through guided inquiry-based learning. *Journal of Physics: Conference Series*, *1317*, 012184. https://doi.org/10.1088/1742-6596/1317/1/012184

Fadhilatunisa, D., Fakhri, M. M., & Rosidah, R. (2020). Pengaruh blended learning terhadap aktivitas belajar dan hasil belajar mahasiswa akuntansi. *Jurnal Pendidikan Akuntansi Indonesia*, *18*(2), 93–106. https://doi.org/10.21831/jpai.v18i2.35345

Gonibala, A., Latjompoh, M., & Ahmad, J. (2024). Meaning learning model: Implementation, activities and responses of science students. *Journal of Research in Instructional*, *4*(1), 49–58. https://doi.org/10.30862/jri.v4i1.321

Gunawan, A. I., Nurtiyasari, D., & Sukiyanto, S. (2022). The development of STAD cooperative learning tools to improve student learning outcomes on sequences and series topic. *Jurnal Pendidikan Matematika (Kudus)*, *5*(1), 53. https://doi.org/10.21043/jpmk.v5i1.14056

Jumini, J. (2022). Flipped classroom dalam pembelajaran matematika sebagai alternatif blended learning: Sebuah kajian literatur. *Idealmathedu: Indonesian Digital Journal of Mathematics and Education*, *9*(1), 51–62. https://doi.org/10.53717/idealmathedu.v9i1.329

Kaharuddin, A., & Liasambu, L. (2019). Penerapan model STAD dalam meningkatkan hasil belajar dan aktivitas siswa SMP. *Jurnal Pendidikan Matematika Raflesia*, *4*(2), 29–37. https://doi.org/10.33449/jpmr.v4i2.9750

Mardizal, J., & Tarmizi, M. (2021). Efforts to improve student learning outcomes by applying the STAD-type cooperative learning model. *Jurnal Inovasi Penelitian*, *2*(6), 1677–1684. https://doi.org/10.47492/jip.v2i6.958

Mirzuandi, A., Abdurrahmansyah, A., & Nazaruddin, N. (2024). Strategy for improving teacher pedagogic competence through ummi method certification at SD Islam Al Alifah Palembang. *Journal of Research in Instructional*, *4*(1), 12–26. https://doi.org/10.30862/jri.v4i1.294

Nasir, N. I. R. F., Arifin, S., & Damopolii, I. (2023). The analysis of primary school student's motivation toward science learning. *Journal of Research in Instructional*, *3*(2), 258–270. https://doi.org/10.30862/jri.v3i2.281

Nasir, N. I. R. F., Damopolii, I., & Nunaki, J. H. (2020). Pengaruh pembelajaran inkuiri terhadap level berpikir siswa SMA. *Bioilmi: Jurnal Pendidikan*, *6*(2), 112–119.

https://doi.org/10.19109/bioilmi.v6i2.6948

Novianti, A., Bentri, A., & Zikri, A. (2020). Pengaruh penerapan model problem based learning (PBL) terhadap aktivitas dan hasil belajar siswa pada pembelajaran tematik terpadu di sekolah dasar. *Jurnal Basicedu*, *4*(1), 194–202. https://doi.org/10.31004/basicedu.v4i1.323

Nur Syamsu, F., Rahmawati, I., & Suyitno, S. (2019). Keefektifan model pembelajaran STAD terhadap hasil belajar matematika materi bangun ruang. *International Journal of Elementary Education*, *3*(3), 344. https://doi.org/10.23887/ijee.v3i3.19450

Pujiastuti, H., & Fitriani, E. (2021). The effect of learning activities and disciplines on students' mathematics learning outcomes*. Math Didactic: Jurnal Pendidikan Matematika*, *7*(3), 195-204. https://doi.org/10.33654/math.v7i3.1351.

Putri, F. E., Amelia, F., & Gusmania, Y. (2019). Hubungan antara gaya belajar dan keaktifan belajar matematika terhadap hasil belajar siswa. *Edumatika: Jurnal Riset Pendidikan Matematika*, *2*(2), 83. https://doi.org/10.32939/ejrpm.v2i2.406

Roosyanti, A., & Suryarini, D. Y. (2024). Science problem solving in elementary schools through the application of project-based learning. *Journal of Research in Instructional*, *4*(1), 27–38. https://doi.org/10.30862/jri.v4i1.278

Safitri, M., Aziz, M. R., Wangge, M. C. T., Jalal, N. M., Louk, M. J. H., Budiana, I., Ratnaningsih, P. W., Tambunan, H., & Damopolii, N. (2021). *Model pembelajaran inovatif*. Media Sains Indonesia.

Sirait, S. H. K., Kurniawan, R. P., Jeni, J., & Damopolii, I. (2022). Motivasi belajar biologi siswa selama pandemi. *Journal on Teacher Education*, *3*(2), 112–119. https://doi.org/10.31004/jote.v3i2.3203

Suardiana, I. M. (2021). Penerapan model pembelajaran kooperatif tipe STAD untuk meningkatkan hasil belajar matematika. *Journal of Education Action Research*, *5*(3), 176–186. https://doi.org/10.23887/jear.v5i3.34677

Welerubun, R. C., Wambrauw, H. L., Jeni, J., Wolo, D., & Damopolii, I. (2022). Contextual teaching and learning in learning environmental pollution: The effect on student learning outcomes. *Prima Magistra: Jurnal Ilmiah Kependidikan*, *3*(1), 106–115. https://doi.org/10.37478/jpm.v3i1.1487

Werimon, S., Damopolii, I., & Nunaki, J. H. (2017). Pengaruh model pembelajaran STAD dipadu media pembelajaran komik materi sistem pencernaan manusia terhadap hasil belajar siswa. *Jurnal Eksakta Pendidikan (JEP)*, *1*(2), 33–40. https://doi.org/10.24036/jep.v1i2.52

Winanti, D. E. (2022). Penerapan model pembelajaran kooperatif tipe STAD untuk meningkatkan hasil belajar IPS pada siswa kelas V. *Kalam Cendekia: Jurnal Ilmiah Kependidikan*, *10*(2), 434. https://doi.org/10.20961/jkc.v10i2.65759

Yomaki, E. K., Nunaki, J. H., Jeni, J., Mergwar, S. D. I., & Damopolii, I. (2023). Flipbook based on problem-based learning: Its development to bolster student critical thinking skills. *AIP Conference Proceedings*, 020022. https://doi.org/10.1063/5.0126212

Yunita, S., Susilawati, S., Riniawati, R., & Fajriah, ustika N. (2023). Exploring college students' technostress phenomenon in using ed-tech. *Journal of Research in Instructional*, *3*(2), 242–257. https://doi.org/10.30862/jri.v3i2.280