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Improvement of Learning Outcomes of Animal Life Cycle Materials Using Stad-Type Cooperative Learning for Grade 4 MIN 6 Students of Kota Padang

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Abstract:
This research aims to improve student learning outcomes in the material "Animal Life Cycle" in grade IV MIN 6 Padang City by using a cooperative learning model of the STAD (Student Teams Achievement Divisions) type. The STAD cooperative learning model is designed to increase students' active involvement through mutually supportive group work in understanding the material. This study uses a quasi-experimental method with pre-test and post-test designs. The subjects of the study were grade IV students who were divided into small heterogeneous groups. The results of the study showed a significant improvement in student learning outcomes after the implementation of the STAD model. The average score of pre-test and post-test students has increased, which indicates that the application of STAD-type cooperative learning can improve students' understanding of animal life cycle materials. In addition, the STAD model also improves students' social skills and cooperation in groups. Thus, STAD-type cooperative learning can be used as an alternative in improving student learning outcomes in the "Animal Life Cycle" material, as well as encouraging students to participate more actively in learning. This research is expected to be a reference for educators to develop more effective and fun learning strategies.

Keywords: Improvement Of Learning Outcomes, Animal Life Cycle, Cooperative Learning, STAD.

INTRODUCTION

Education is essential in developing quality human resources, requiring schools to facilitate students in acquiring knowledge, skills, and attitudes. Mastery of science concepts, including the Animal Life Cycle, is crucial for understanding ecosystems. However, observations at MIN 6 Padang City indicate that many fourth-grade students struggle with this topic due to teacher-centered learning, which limits engagement. To address this, the Student Teams Achievement Divisions (STAD) cooperative learning model is proposed, emphasizing teamwork to enhance understanding and social interactions. This study examines whether STAD improves learning outcomes, engagement, and social skills. Traditional methods still dominate, leading to low participation and ineffective learning. This research employs a pretest-posttest experimental design, comparing control and experimental groups through tests, observations, and questionnaires. Data analysis will assess STAD's impact. Prior studies, such as Rahmatullah (2021) and Kurniawan & Santoso (2020), confirm STAD's effectiveness in improving student performance and social skills. Yuniarti (2020) also found that STAD fosters motivation and independent learning. This research aims to provide further evidence of STAD's benefits, particularly in teaching complex concepts like the Animal Life Cycle.

METHODS

This study uses a pretest-posttest control group experimental design to compare learning outcomes between Grade IV students at MIN 6 Padang City taught with the STAD cooperative model and those taught with conventional methods. The process includes preparation (developing lesson plans and materials), implementation (pretest, STAD application in the experimental group, conventional teaching in the control group, and posttest), and data collection (pretest-posttest scores, observations on student participation, and questionnaires on motivation). Data analysis involves descriptive statistics, normality and homogeneity tests, and a t-test to determine the effectiveness of STAD. Qualitative analysis of observations and questionnaires further explores student engagement and motivation. This study aims to provide valid findings on the impact of STAD on learning outcomes in the Animal Life Cycle material.

RESULTS

This study aims to determine the effect of applying the Student Teams Achievement Divisions (STAD) cooperative learning model on students' learning outcomes in the Animal Life Cycle material in Grade IV at MIN 6 Padang City. Based on data collection through pretests, posttests, and observations during the learning process, it was found that there was a significant improvement in the learning outcomes of students who used the STAD model compared to those who used conventional teaching methods. The pretest results showed that the average scores of students in both groups were almost the same, indicating that their initial understanding of the material was still low. However, after implementing the STAD learning model, the posttest results of the experimental group showed a higher increase in scores than the control group. Additionally, observations revealed that students in the experimental group were more actively engaged in group discussions, collaborated to solve problems, and demonstrated greater enthusiasm in the learning process compared to the control group students, who tended to be passive. This study employed a quasi-experimental design with a pretest-posttest control group approach. Data were collected through learning outcome tests, observations, and questionnaires to assess students' responses to the STAD model. The normality and homogeneity tests indicated that the data were normally distributed and had homogeneous variance, allowing for the use of parametric statistical analysis. The t-test results showed that the calculated t-value of 5.32 was greater than the t-table value of 2.00 at a 0.05 significance level, indicating a significant difference between the learning outcomes of the experimental and control groups. Descriptive analysis revealed that the average pretest scores of students ranged from 57 to 58, and after implementing STAD, the experimental group experienced an average score increase of 27.2 points, whereas the control group only improved by 14.6 points. The questionnaire results indicated that 85% of students felt more motivated and found it easier to understand the material through STAD-based group discussions. In addition to enhancing learning outcomes, this model also helped students develop social skills such as communication, teamwork, and responsibility in completing group tasks.

DISCUSSION

The results of this study show that the application of the Student Teams Achievement Divisions (STAD) cooperative learning model significantly improves student learning outcomes in the Animal Life Cycle material compared to conventional methods. This finding aligns with Rahmatullah (2021), who stated that STAD encourages active student participation, ultimately enhancing their understanding of the material. The pretest and posttest results confirm that students in the experimental group demonstrated greater improvement than those in the control group, indicating that small-group collaboration in the

STAD model facilitates a better grasp of animal life cycle concepts. Besides academic improvement, STAD also positively impacts students' attitudes and social skills, as observed in active discussions, mutual assistance, and knowledge sharing among experimental group members. These findings support Kurniawan and Santoso (2020), who highlighted that cooperative learning enhances social skills such as teamwork, communication, and responsibility, creating a learning environment that fosters stronger social interactions alongside cognitive development. However, challenges arise in STAD implementation, particularly for lower-achieving students who tend to rely on higher-achieving peers, as noted by Yuniarti (2020), who pointed out the risk of unequal group participation. This underscores the teacher's role in guiding discussions to ensure balanced contributions from all students. Despite these challenges, STAD effectively boosts student motivation, as evidenced by questionnaire responses indicating that students found learning more engaging and interactive, consistent with Yusron (2021), who reported that STAD increases motivation by fostering peer support and a dynamic learning environment. This study also highlights the importance of using varied learning methods in elementary education, as conventional teacher-centered approaches can lead to passive learning. Student-centered methods like STAD actively engage learners, making them more involved in the learning process. Specifically, for the Animal Life Cycle material, STAD allows students to explore topics such as metamorphosis in frogs and butterflies through collaborative discussion, deepening their conceptual understanding. These findings suggest that cooperative learning is particularly effective for teaching complex, concept-driven subjects, as peer discussions reinforce comprehension. Overall, this research contributes positively to education by advocating for interactive learning models in elementary schools, demonstrating that STAD not only enhances academic achievement but also fosters social development and motivation. However, limitations exist, particularly in the time required for cooperative learning and the study's limited sample size, which may affect the generalizability of results. Future research with larger samples and diverse subjects is needed to determine whether similar outcomes can be replicated across different schools and conditions. Nevertheless, this study underscores that the STAD model is a promising alternative for improving elementary education quality, particularly for concept-based subjects like the Animal Life Cycle.

CONCLUSION

The conclusion of this study is that the application of the Explicit Instruction learning model can improve the learning outcomes of grade II students of SD Negeri 282 Tornaincat on the compatibility material between movements and prayer readings. Based on the results of tests, observations, and interviews, this model has proven to be effective in helping students understand the material in a clearer and more structured way. A significant increase can be seen from the average test score of students who have increased from 62 in the first cycle to 80 in the second cycle. In addition, students also become more active and participate in learning, showing that this model has succeeded in creating a more interactive and engaging learning atmosphere.

However, despite the significant improvement, the study also identified several challenges, such as differences in students' ability to absorb material and low student motivation at the beginning of learning. For this reason, a more personal and creative approach is needed in managing the classroom so that every student can participate in learning optimally.

Overall, the Explicit Instruction model can be used as an alternative learning method that is effective in improving student understanding, especially in materials that require step-by-step instructions, such as in PAI learning material compatibility between movements and prayer readings. Therefore, it is recommended to continue to develop and implement this model by paying attention to the individual needs of students, as well as considering the challenges that exist in the learning process.

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