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The Effectiveness of Use of Rewards And Punishments in the STAD Cooperative Learning Method to Increase Motivation And Science Learning Outcomes of Class 4 Students of Kolursari II SDN Bangil

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Abstract
This study investigates the importance of applying reward and punishment as stimuli to enhance student motivation and learning outcomes. The research was conducted using a quasi-experimental approach with a pretest-posttest control group design. The population consisted of 40 students, with class IV A (20 students) serving as the experimental group and class IV B (20 students) as the control group. The sampling technique applied was saturated sampling. Data on student motivation were collected using a motivation questionnaire, while learning outcomes were measured through pretest and posttest instruments. The data were analyzed using a One Way ANOVA test. The findings revealed that the use of reward and punishment significantly affected student motivation, as indicated by Fcount 23.37 > Ftable 4.10 at a 5% significance level, leading to the rejection of H0. Similarly, the use of reward and punishment significantly improved student learning outcomes, with Fcount 21.198 > Ftable 4.10 at a 5% significance level. These results suggest that implementing reward and punishment within the STAD (Student Teams Achievement Division) cooperative learning model effectively increases both motivation and science learning outcomes. In conclusion, reward and punishment can serve as valuable tools in fostering active engagement and improved academic performance among elementary school students.

Keywords: Reward and Punishment, STAD, Motivation, Learning Outcomes

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1. INTRODUCTION

Science learning taught in elementary schools requires effective and creative teaching methods. Learning methods are one of the important factors in learning used by teachers to achieve student learning success. Komalasari (2010) states that a learning method is a form of learning that is depicted from beginning to end which is presented uniquely by the teacher. In other words, a learning method is a container or packaging for the application of a learning approach, method and technique. According to Komalasari (2010), the cooperative learning method is one of the methods that researchers consider the most appropriate to apply in learning to improve student learning activities and outcomes, especially in science learning. According to Slavin (2005) cooperative learning is a type of cooperative learning method that can be applied in the classroom, namely the Student Team Achievement Division (STAD). The STAD type cooperative learning method is learning that requires students to study in groups. The study group consisted of four people with different levels of ability, gender and ethnic background. According to Slavin (2005) there are three important concepts in STAD type cooperative learning, namely group respect, responsibility, equal opportunities for success. STAD type cooperative learning is strongly influenced by the use of rewards and punishment

The use of rewards and punishment is something that must be considered in an effort to motivate student learning to achieve maximum learning results. According to Hamalik (2011), motivation really determines the level of success or failure in students' learning actions. Without motivation, students tend to find it very difficult to succeed in learning. Based on this statement, student learning motivation needs to be increased so that low student learning outcomes become better (Wahdati, D. S., Sulistiana, D., & Sofiyana, M. S. 2024).

One type of learning that requires interesting stimulation is Natural Sciences (IPA). The problem in science learning that often occurs is low motivation and student learning outcomes. Based on interviews regarding the science learning process in class IV conducted by researchers at SDN Kolursari II Bangil with 10 class IVA students and 10 class IVB students, the results showed that 70% of students answered that science learning was less interesting which resulted in science learning being difficult to understand, so that Students feel bored and bored quickly if they are not provided with interesting methods in the learning process. Based on the results of daily tests (UH) in classes IVA and IVB, there are 40% of students who have learning results below the minimum completeness criteria (KKM), while the results of learning motivation tests show that 70% of students think the learning they receive is less interesting. Low learning outcomes and student motivation can be shows the importance of using rewards and punishment in the STAD type cooperative learning method as a stimulus to improve learning outcomes and student motivation.

Based on previous research, it is clear that STAD type cooperative learning is very influential in the use of rewards and punishment in increasing motivation and learning

outcomes. Praminah's research (2012) showed that there was an increase in students' science learning outcomes in cycle I with an average score of 73, 63% completion level and in cycle II, the average score was 81, 89% completion level. Seno's research (2012) shows that there is an increase in science learning outcomes using the STAD learning method. In the pre-cycle the average value was 47.60, while in the first cycle the average value was 66.40 and in the second cycle the average value was 73.20. The minimum score in the initial condition was 30 in cycle I to 40 and cycle II to 50. The maximum score in the initial condition was 80 in cycle I to 90 and cycle II to 100. Other research conducted by Aris Chandra Wibowo (2012) showed that there was an increase in results learning science through reward and punishment in cycle I the average value was 74.93 and in cycle II the average value was 80.17. There was an increase in the percentage of learning outcomes in cycle I, 90% of which were completed and in cycle II, 100% of students had all completed it.

Based on the existing problems and considering the influence of using rewards and punishment in learning to increase students' learning motivation in previous research, the researcher took the research title "The Effect of Using Rewards and Punishments in the STAD Type Cooperative Learning Method on the Motivation and Science Learning Outcomes of Class IV Students at Kolursari Elementary School II Bangil".

2. LITERATURE REVIEW

2.1 STAD Type Cooperative Learning Method

Understanding STAD Type Cooperative Learning (Student Team Achievement Division) According to Slavin (2005), this learning method is the simplest and most appropriate learning method used by teachers who are just starting to use a cooperative learning approach. Slavin (2005) concluded that:

In STAD, students are divided into study teams consisting of four people with different levels of ability, gender and ethnic background. The teacher delivers the lesson and then the students work in their teams to ensure that everyone takes quizzes on the material individually, at which time they are not allowed to help each other. The students' quiz scores are compared with the average of their previous achievements, and each team will be awarded points based on the level of progress the students have achieved compared to their previous results. These points are then added up to obtain a team score, and teams that successfully meet certain criteria will receive a certificate or other award

2.2 Giving Rewards and Punishments

1. Understanding Reward and Punishment

   According to Djamarah (2005) rewards are a way to make students' learning fun and exciting, both at school and at home. The awards received will motivate students to be enthusiastic about learning. When students feel happy, they tend to be more focused so they can follow the learning process well. The most important

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thing in giving rewards is the result, namely the formation of awareness, a strong conscience/desire from students to always learn whenever and wherever they are.

According to Purwanto (2006) punishment is suffering that is given or caused intentionally by someone (parent, teacher, etc.) after a violation, crime/mistake occurs. Punishment as an educational tool, even though it causes suffering (distress) for the punished student, can also be a motivational tool, a driving tool to intensify student learning activities (increasing student motivation and learning outcomes). In addition, the fear that arises from punishment can have a beneficial influence on certain desires. With punishment, it is hoped that students will be able to realize the mistakes they have made so that students will be careful in taking action.

Reward and Punishment in the world of education is one of the factors that supports the emergence of children's motivation to learn. Both have an important role in growing student motivation. Rewards are given to motivate students to do something optimally, especially if supported by more tempting prizes. Meanwhile, Punishment is given to motivate students not to commit a mistake or violation, if they commit a violation they will receive sanctions or punishment. Forms of reward that can be given to students include, for example, giving praise to students who do good and responsible things, and recording the praise in a book to increase their motivation, giving gifts, smiling, applause, calling names and so on. Meanwhile, forms of punishment are warnings, advice, and actions such as cutting off breaks, moving students' sitting positions, and so on.

2. Natural Sciences for Elementary Schools

Natural Sciences as a scientific discipline and its application in society make science education important. Natural Sciences begin to be taught to children when they enter elementary school (SD). According to Iskandar (1994) there are various reasons behind why science subjects are included in the school curriculum, namely:

1. That science is beneficial for a nation, the welfare of a nation depends a lot on that nation's ability in the field of science. Science is the basis of technology which is often referred to as the backbone of development. One cannot become a doctor or engineer without a fairly extensive knowledge base regarding various natural phenomena.
2. Science is a subject that provides an opportunity to practice critical thinking. Children can draw conclusions from an experiment carried out.

3. METHODS

3.1 Research Design

This research uses a type of quasi-experimental research with a "pretest-posttest control group design", namely with a design where a group is given treatment, and then the results are observed (Sugiyono, 2017), so to find out whether the hypothesis is

accepted or not the researcher carries out testing hypothesis by processing data using parametric statistical methods and dividing this research stage into two stages, namely the planning stage and the treatment stage.

The conclusion produced later is whether the hypothesis being tested can be generalized or not. The pretest-posttest control group design pattern is presented in table 1.

Table 1. Pretest-posttest control group design pattern

	Pretest	**Treatment**	***Posttest***
R1	O1	X1	*O3*
R2	O2	X2	O4

Information:
XI = The treatment given to the experimental class is using the influence of reward and punishment in the STAD type cooperative method
X2 = Treatment (treatment) given to the control class that uses the STAD type cooperative method without being given the effect of reward and punishment use
O1 = Pretest experimental group
O2 = Pretest control group
O3 = Posttest experimental group
O4 = Posttest control group
R1 = Experimental group
R2 = Control group

3.2 Population, Sample, and Sampling

1. Population

According to Sugiyono (2017), population is a generalization area consisting of objects or subjects that have certain quantities and characteristics determined by researchers to be studied and then conclusions drawn.

The population in this study were all class IV students at SDN Kolursari II Bangil. Consisting of two classes, namely IV A and IV B, totaling 40 students with details in table 3.3 as follows

2. Sample

According to Sugiyono (2017), the sample is part of the number and characteristics of the population. If the population is large, and it is impossible for researchers to study everything in the population, for example due to limited funds, energy and time, then researchers can use samples taken from that population. For this reason, samples taken from the population must be truly representative. Based on this research, the researcher took a sample of 20 class A students as an experimental class.

3. Sampling

The sampling technique used in this research is saturated, purposive sampling with the condition that the sample classes must have equal abilities based on the class equality test (equality test results can be seen in Appendix 1). Based on the results of the equality analysis, the researcher used a research sample of students in class IV A as the experimental class and IV B as the control class.

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4. RESULTS AND DISCUSSION

4.1. Validity and Reliability Test Results of Learning Outcome Question Instruments

The results of the validity and reliability test of the questions in this study show a sig. of each factor is 0.000 where the sig value. less than 0.050. Sig value. This indicates that the entire question instrument is valid and can be used as a measuring tool for this research.

The reliability test results show a sig value. from the results of the correlation between test 1 and test 2 is 0.000 where the sig value. less than 0.050. Sig value. This indicates that the entire question instrument is relevant or appropriate and can be used as a measuring tool for this research.lursari II Bangil, totaling 40 students.

4.2. Initial Prerequisite Test Results

The results of the Homogeneity Test of Motivation Data and Learning Outcomes showed that the largest variance in learning motivation data = 26.99 and the smallest variance = 15.52. Thus, the results of the F test calculations that have been carried out get a value of 1.74, then the calculated f value is compared with the f table. the calculated f value is smaller than F table (1.74 < 3.59) with sig. 5%, and it is known that the largest variance in learning outcomes data = 104.34 and the smallest variance = 46.63. Thus, the results of the F test calculations that have been carried out get a value of 2.23, then the Fcount value is compared with Ftable, the Fcount value is smaller than Ftable (2.23 < 3.59) with sig. 5%. So it can be concluded that the variance of motivation data and learning outcomes that will be analyzed is homogeneous, so that the anova calcu 3. Hypothesis Test Results for Student Learning Motivation

The results of the Anova test from testing the reward and punishment hypothesis on student learning motivation show an F value of 23.37. This price is then compared with Ftable with dk in the numerator m - 1 and dk in the denominator N - m, thus dk in the numerator 2 – 1 = 1 and dk in the denominator 40 – 2 = 38. Based on these two dk, it can be seen that the Ftable price is for 5% = 4.10 and for 1% = 7.35. It turns out that the Fcount price of 23,377 is greater than Ftable (23,377 > 4.10 and 23,377 > 7.35). Because the Fcount value is much greater than the Ftable value, the proposed hypothesis 0 (Ho) is rejected and (Ha) is accepted, both for 5% and 1% error levels. So the conclusion from the results of the ANOVA test calculation above is that the rewards and punishments given to the experimental class have a significant influence on student learning motivation.lation can be continued.

Present the results of your work. Use graphs and tables if appropriate, but also summarize your main findings in the text. Do NOT discuss the results or speculate as to why something happened; that goes in the Discussion.The Anova test results from testing the reward and punishment hypothesis on student learning outcomes show Fcount of 21.198 which is greater than Ftable (21,198 > 4.10 and 21,198 > 7.35). Because the Fcount value is much greater than the Ftable value, the proposed hypothesis 0 (Ho) is rejected and (Ha) is accepted, both for an error level of 1%. So the

conclusion from the results of the ANOVA test calculation above is that the rewards and punishments given to the experimental class have a significant influence on student learning outcomes.

6. CONCLUSION

Based on the results of this research, it can be concluded that the use of rewards and punishment in the STAD (Student Team Achievement Division) type cooperative learning method has proven to be effective in increasing the learning motivation of class IV students at SDN Kolursari II Bangil with a calculated F value greater than the f table, namely 23.377 > 4.10 at the Sig level. 5% and 23.377 > 7.35 at the Sig level. 1%. The use of reward and punishment in the STAD type cooperative learning method (Student Team Achievement Division) has an influence on the learning outcomes of class IV students at SDN Kolursari II Bangil with the calculated F value being greater than the f table, namely 21.198 > 4.10 at the Sig level. 5% and 21.198 > 7.35 at the 1% significance level**.**

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