Cooperative Learning Method through Animal Food Board Demonstration for Improving Student Learning Outcomes in Natural Science Lessons

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Article Info	ABSTRACT
	Improving student learning outcomes is one of the goals of education. This study aimed to determine the effect of cooperative learning through animal food board demonstration for improving student learning outcomes in learning Natural Sciences (IPA) for class 4 MI Salafiyah Cirebon City, West Java, Indonesia. The approach used in this research is quantitative, while the method used is the pre-experimental method with the research design used is one group pre-test post-test design. The population in this study were all 4th-grade students of MI Salafiyyah Cirebon City. The sample of this study was 25 students. Data were collected through a test where there was a pre-test and post-test. Data were analyzed through statistical descriptive, normality, homogeneity, and Mann-Whitney statistical tests using SPSS version 16 for windows. Based on the study results, the pre-test score was 65.60, and the post-test score was 90.20. Based on the results of the Mann-Whitney test with = 0.05, a significance value of 0.000 was obtained. The results obtained were 0.000 <0.05 indicating a significant difference, there was a significant effect on the difference in the treatment applied, in other words, an increase in student learning outcomes by applying the Cooperative learning model by using animal food board demonstration of educative teaching aids in science subjects (Natural Sciences/IPA) significantly. **Keywords:** Cooperative Learning, Animal Food Board, Learning Outcomes, Natural Science.
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1. INTRODUCTION

Education is a planned primary effort to create a good learning atmosphere and learning process. Students actively develop their potential to have religious and spiritual strength, self-control, self-personality, noble character, and skills needed by themselves, society, nation, and state (Kurniawan, 2015). To achieve the goals of national education, it is necessary to have a process of interaction between students and educators and adequate learning resources in a learning environment (Abdullah, 2012; Fatimah et al., 2022; Umbara et al., 2019).

Learning is a process of delivering knowledge by pouring knowledge into students (Chang, 2019; Nawi et al., 2019). If learning is seen as a process, then learning is a series of efforts or teacher activities to make students learn (Fatimah et al., 2022). According to (Hisyam, 2004), the process starts with planning the annual teaching program, semester, and teaching preparations (lesson plan) along with the practice of complementary tools, among others, in the form of teaching aids and evaluation tools.

Learning is a process and a series of efforts or activities of teachers to make students learn (Meirink et al., 2009; Rizkiawan et al., 2022; Wingate, 2007). Learning is also a preparation for their future and their schools to live in the future society (Sahlberg, 2010; Voogt et al., 2013). Natural Sciences is a subject in SD/MI (elementary school/Islamic elementary school) that aims to give students organized knowledge, ideas, and concepts about the natural surroundings (Azizi & Prasetyo, 2018; Prasasti, 2017). That is obtained from experience through a series of scientific processes, including investigation, compilation, and presentation of ideas (Bhakti & Dwi Astuti, 2018; Hairida, 2016).

Science learning in elementary schools is known as natural science (IPA). The concept of science in elementary schools is integrated because it has not been separated separately, such as the subjects of chemistry, biology, and physics (Harefa & Sarumaha, 2020; Mahardi et al., 2019). The objectives of learning science in elementary schools in the National Education Standards Agency (BSNP) are (1) Gaining confidence in God Almighty's greatness based on His natural creation's existence, beauty, and orderliness. (2) Develop knowledge and understanding of helpful science concepts that can be applied in everyday life. (3) Develop curiosity, positive attitude, and awareness about the interplay of relationships between science, environment, technology, and society. (1) Develop process skills to investigate the environment, solve problems, and make decisions. (2) Increase awareness to participate in maintaining, safeguarding, and preserving the natural environment. (3) Increase awareness to appreciate nature and all its regularities as one of God's creations. (3) Obtaining knowledge, concepts, and skills in science as a basis for continuing education to junior high school (Alamsyah, 2017; Tias, 2017).

The objectives of elementary science learning are (1) to develop curiosity and a positive attitude towards science, technology, and society. (2) Develop process skills to investigate the environment, solve problems and make decisions. (3) Develop knowledge and understanding of scientific concepts that will be useful and can be applied in everyday life. (4) Develop awareness about the role and importance of science in everyday life. (5) Transfer knowledge, skills, and understanding to other teaching areas. (6) Participate in maintaining, safeguarding, and preserving the natural environment. Appreciate the various forms of God's creation in this universe to be studied (Indriani, 2015; Rahayu et al., 2012) ;Sulistyorini, 2007)

One of the problems experienced by SD/MI students during this hybrid learning is the poor student learning outcomes in science learning, science subjects closely related to the natural surroundings, directing teachers to use the environment as a learning resource. The existence of an environment around students that supports the science learning process is very beneficial for students to use it as a learning medium. Utilizing the environment as a science learning resource is hoped to improve the quality of student learning in the learning process. Because students are accustomed to studying at home, anxiety and concerns arise when they learn at school independently, so they will find it difficult. In addition, students will find it difficult to adjust to their classmates because, in online learning, students rarely interact directly with their classmates. That impacts student learning outcomes that are not good to carry out offline learning again.

The general objective of the research is to describe the improvement of student learning outcomes in science learning by using the Cooperative Learning Method through Animal Food Board Demonstration in class IV MI Salafiyah Cirebon City, West Java, Indonesia.

2. METHOD

This study aimed to determine the effect of cooperative learning through Animal Food Board Demonstration media on improving student learning outcomes in learning Natural Sciences (IPA) class 4 MI Salafiyah Cirebon City. The approach used in this research is quantitative, while the research method used is pre-experimental, with the research design used as one group pretest-posttest design (Knapp, 2016; R Nur Abdurakhman et al., 2022). The population in this study were all 4th-grade students of MI Salafiyyah Cirebon City. The sample of this study was 25 students. The characteristics of the students who were sampled in this study were heterogeneous, namely at the cognitive level. The instrument used a test in the form of essay questions totaling ten. The questions made in this study are divided into several cognitive groups, C1 to C5 (Hermansyah et al., 2019; Lin et al., 2020). The data analysis used in this research is quantitative, which is processed in the SPSS application. The data analysis carried out tests the data normality, homogeneity, and t-test.

The first research procedure is a pretest, giving questions to students before applying the cooperative learning method treatment, then a post-test is carried out. The post-test is to find an increase in learning outcomes by implementing the cooperative learning method using educational teaching aids (Animal Food Board Demonstration). Students are given questions by dividing students into three groups and then explaining the material using the animal food board educational teaching aids as a learning resource. Post-test and ask students to work on the post-test questions in groups and present them in front of the class using educational props such as animal feed boards.

3. RESULTS AND DISCUSSION

Table 1. Student Score Results

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	25	50	75	65.60	6.970
Postest	25	85	95	90.20	4.203
Valid N (listwise)	25				

Table 1 show the descriptive statistical test results show that the standard deviation is 6.70 > 4.203, whereas the pre-test > post-test. Thus, the distribution of data in the post-test is low. That happens because of the Cooperative Learning method or learning in groups so that students have the same value in one group. In comparison, the mean value is 90.20 > 65.60 where post-test > pre-test. It indicates a significant increase in learning outcomes after being given treatment by applying the Cooperative Learning method using Animal Food Board Demonstration.

Table 2. Results of Kolmogorov-Smirnov Test

		Unstandardized Residual
N		25
Normal Parameters[a]	Mean	0.0000000
	Std. Deviation	4.07547435
Most Extreme Differences	Absolute	0.166
	Positive	0.103
	Negative	-0.166
Kolmogorov-Smirnov Z		0.829
Asymp. Sig. (2-tailed)		0.498

a. Test distribution is Normal.

Based on the Normalias test in Table 2, the significance value is 0.498 > 0.05, and it can be concluded that the residual value is a normal distribution. In other words, the sample comes from a normally distributed population.

Table 3. Results of Homogeneity Test

Levene Statistic	df1	df2	Sig.
7.061	1	48	.011

Based on table 3, the homogeneity test obtained a significance of 0.011 < 0.05, the data distribution is not homogeneous, or the data group has an unequal or heterogeneous variance.

Table 4. Results of Mann-Whitney Test

	Natural Science (IPA) outcomes
Mann-Whitney U	0.000
Wilcoxon W	325.000
Z	-6.140
Asymp. Sig. (2-tailed)	0.000

a. Grouping Variable: Criteria

Table 4 shows the results of the Mann-Whitney statistical test with = 0.05, a significance value of 0.000 is obtained, the results obtained are 0.000 <0.05 indicating a significant difference, there is a significant effect on the difference in the treatment applied, in other words, an increase in the results. Student learning by applying the cooperative learning model by using educational teaching aids learning media (Animal Food Board Demonstration) in science subjects (Natural Sciences/IPA) significantly.

Applying the Cooperative Learning learning model with educational teaching aids for science subjects in class 4 MI Salafiyah significantly influences student learning outcomes. Cooperative learning affects this; students are divided into several groups to solve problems, making it easier for students. By studying in groups, students also have high learning motivation. According to the characteristics of cooperative learning, students are grouped with different or heterogeneous abilities. It can also train students' discussion skills, train students to lead discussions, and train students in making decisions. Trianto (2007) states that cooperative learning positively impacts students with low learning outcomes, so they can significantly increase learning outcomes. Cooperative Learning aims to increase student participation, facilitate students to experience leadership attitudes, make decisions in groups, and provide opportunities for students to interact and learn with students from different backgrounds.

4. CONCLUSION

The results of this study indicate that student learning outcomes have increased significantly after being given learning using the Cooperative Learning method with educative teaching aids (Animal Food Board Demonstration). The application of the Cooperative Learning method with educative teaching aids in science lessons is adequate to do. The cooperative Learning method with educative teaching aids media has implications for the learning process, namely developing students' critical thinking skills, encouraging students to be more active in learning, and training students to work together.

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