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Optimizing Student Learning Outcomes through Talking Stick Model Innovation Assisted by Audio-Visual Media

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Abstract
The purpose of this study is to examine the effectiveness of the application of the talking stick learning model with the help of audio visuals to optimize the learning outcomes of science subjects for grade V students at SDN Kampungdalem 6, Kediri, East Java. The methodology applied uses a quantitative approach through a quasi-experimental design with a nonequivalent control group design format. The research subjects included all grade V students of SDN Kampungdalem 6, totaling 88 people. Using the purposive sampling technique, two groups of classes were selected as samples – a VA class with 30 students as an experimental group and a VB class with 30 students as a control group. Data on science learning outcomes are collected through essay test instruments. The results of descriptive statistical analysis and independent sample t-test showed a significance level of 0.000 < 0.05, indicating that the implementation of the talking stick learning model with the help of audio-visual had a positive impact on student learning outcomes. In conclusion, this learning model has proven to be very effective because it is able to increase students' motivation and interest in learning, which ultimately has an impact on improving their academic achievement.

Keywords
Effectiveness, Talking Stick, Learning Outcomes

INTRODUCTION

Education is a lifelong learning process that aims to equip humans with the ability to meet their life needs independently (Sholeh, 2021, p. 77). Furthermore, education has a strategic function in the formation of quality human resources (Ayu et al., 2018, p. 185). The quality of human resources is the output of the educational process that involves learning, interaction between teachers and students. In the process, education provides opportunities for students to broaden their horizons and develop various skills necessary to optimize their potential through structured learning activities. In education, one of the most important things is learning. Learning activities are a structured combination consisting of human elements, facilities, equipment, materials, and procedures that are interrelated to achieve learning objectives (Hamalik, 2017, p. 42).

Natural Science or Science in Indonesian is known as Natural Science (IPA), which is a branch of science that studies the phenomena of the universe to produce basic concepts and principles. In the view of Syaflin (2023, p. 13), science has three main aspects, which include scientific processes, products, and attitudes. Meanwhile, Susanto (2019, p. 177) stated that science is a human effort to understand the universe through a series of observations and procedures that are then analyzed using reasoning to produce conclusions. This view is in line with the educational curriculum, which emphasizes that the science learning process must provide direct experience to develop students' competencies in understanding the natural environment scientifically. Thus, science

learning needs to be based on appropriate learning principles so that student learning outcomes can be achieved optimally.

The learning outcomes of students in natural science subjects are still not optimal, with one of the main factors being the weak ability to solve problems. This situation arises because the learning process is still dominated by the lecture method from the teacher, while students tend to be passive as listeners and observers. The lack of active participation of students in this learning results in a less interesting learning atmosphere (Anindita et al., 2018, p. 10).

To create an optimal science learning atmosphere, teachers need to design learning effectively. One of the learning models that can be applied is talking sticks, which is a group learning model using sticks as a medium (Molan et al., 2020: 178). Furthermore, Susilowati stated that the talking stick model can be an alternative for teachers in improving the four skills of students, especially speaking skills, through fun learning activities using sticks that are rotated alternately (Asri et al., 2019: 227).

Learning effectiveness can be improved through a combination of the right learning models and media. Audio-visual media is one of the options that can be integrated with the talking stick learning model. Audio-visual media is a media that combines sound and image elements (Antari, 2020, p. 139). The use of audio-visual media has advantages that are in line with the principles of Piaget's theory of constructivism, due to its ability to stimulate students' motivation and interest in learning, which ultimately contributes to improved learning outcomes (Rahmadhani & Quro, 2022, p. 1143).

Based on observations, the science learning process still faces several challenges. Learning that is still dominated by teachers (teacher-centered) and the use of media and learning models in schools has not been maximized is the main obstacle. When innovative learning models and learning media are not optimally utilized, this has an impact on students' low motivation to learn, which then affects their learning outcomes. Seeing this problem, a more in-depth study is needed to find the right solution.

METHOD

This study adopts a quantitative approach using a quasi-experimental design. This design was chosen because of the difficulty in obtaining a control group for research (Sugiyono, 2022). This study uses a form of nonequivalent control group design, the study involves two groups: the control class and the experimental class. Both classes are given a pretest to measure students' initial abilities. Furthermore, the experimental class received special treatment in the form of the application of the talking stick learning model with the help of audio-visual aids, while the control class continued to use the conventional learning model. After the treatment, both classes were given a posttest to measure the students' final ability.

This research was conducted at SDN Kampungdalem 6, Kediri, East Java, in the even semester of the 2023/2024 school year. Referring to Hartono (2019), the population is the entire research subject that is the source of data, which in this study includes all grade V students of SDN Kampungdalem 6 with a total of 88 students.

Table 1. Research population

Class	Gender		Sum
	Man	Woman	
VA	13	17	30
VB	12	18	30
VC	10	18	28
Total			88

Meanwhile, according to Sugiyono (2021), a sample is a part taken to represent the population using a specific technique. The sample used in this study consisted of VA class students as an experimental group who received the treatment of a talking stick model with the help of audio-visual, and the VB class, who acted as a control class.

Table 2. Research sample

Class	Gender		Sum	Information
	Man	Woman		
VA	13	17	30	Experimental classes
VB	12	18	30	Control class
Total			60	

The research on the effectiveness of the talking stick learning model with the help of audio-visual aids in science learning was designed with several stages of treatment. The research procedure is divided into three main stages: the initial stage (pretest), the treatment stage (treatment), and the final stage (posttest). Data is collected through tests, observation, and documentation methods.

Arikunto (2019) defines a test as an instrument or tool to measure the knowledge, skills, abilities, or talents possessed by individuals and groups. The research instrument was tested using content validity and construct validity.

In the data analysis, Faradita (2018) explains that the normality test aims to find out whether the residual value is normally distributed. Meanwhile, according to Kusumawati & Andrianu (2018), homogeneity tests were performed to ascertain whether the variance of the sample came from the same or nearly the same population. For hypothesis testing, the t-test (independent sample t-test) is used, which is a decision-making method based on data analysis (Tati et al., 2022).

RESULT AND DISCUSSION

Results

The research was carried out in the context of Theme 7 Subtheme 2, which focuses on Basic Competencies (KD) 3.7 regarding the analysis of the effects of heat on changes in temperature and the shape of objects in daily life. This study compares two learning approaches at SDN Kampungdalem 6; the implementation of the talking stick model with audio-visual media in the VA class as an experimental group, while the VB class acts as a control group with conventional learning. The evaluation of science learning outcomes includes four students' abilities: the ability to explain, apply, give examples, and analyze,

which is reflected in the test instruments. The research data were processed using Microsoft Excel and SPSS version 23 software for descriptive statistical analysis.

Table 3. Descriptive data

	N	Min.	Max.	Mean	Std. Deviation
Pretest experiment	30	40	75	55.33	10.902
Posttest experiment	30	75	95	84.50	5.469
Pre-test control	30	45	75	60.00	7.428
Post-test control	30	65	85	76.17	6.254
Valid N (listwise)	30				

The results of the descriptive analysis using SPSS showed that there was a difference in the average learning outcomes between the two groups compared. The experimental class obtained a higher average score of 84.50, while the control class achieved an average score of 76.17. Through this descriptive statistical comparison, it can be seen that the highest learning outcomes achievement was found in the experimental class with an average of 84.50.

1. Normality test

Based on Sipahutar et al. (2022), the normal distribution of the data obtained can be determined through the normality test. In this case, the method used is the Kolmogorov-Smirnov test, where the data is considered to have a normal distribution if the significance value exceeds (>) 0.05. The results of the normality test can be seen in the following table.

Table 4. Normality test results

		Kolmogorov-Smirnov		
	Class	Statistics	Df	Sig.
Student learning outcomes	Pretest experiment	.128	30	.200
	Posttest experiment	.170	30	.027
	Pretest control	.183	30	.012
	Posttest control	.174	30	.021

Based on the analysis of the data shown, the results of the normality test showed a normal distribution in both groups. The data showed that the significance value for the experimental class was 0.200 in the pretest and 0.027 in the posttest. Meanwhile, in the control class, a score of 0.012 was obtained for the pretest and 0.021 for the posttest. This study compares two learning approaches applied in grade V of SDN Kampungdalem 6, namely the talking stick learning model combined with audio-visual media and conventional learning methods.

2. Homogeneity test

To find out the similarity or difference in the level of data variant from the two groups, homogeneity testing was carried out. This analysis uses Levene's test of homogenity of variances available in the SPSS 23 program. In decision-making, the data is

declared homogeneous if the significance value is greater than 0.05. The results of the complete calculation of the homogeneity test on student learning outcomes can be seen in the table below.

Table 5. Homogeneity test results

		Living Statistic	Df1	Qf2	Sig.
Student learning outcomes	Based on the Mean	.756	1	58	.388
	Based on the Median	.467	1	58	.497
	Based on Median and with adjusted df	.467	1	56.808	.497
	Based on the trimmed mean	.791	1	58	.378

Based on the analysis conducted through the Homogeneity of Variance Test using SPSS, the results showed a significance value of 0.388, which was greater than 0.05. This indicates that the two groups analyzed have homogeneous or equivalent variants.

3. Hypothesis test

To compare the learning outcomes between the experimental and control groups, the analysis was performed using the Independent Sample t-Test with the help of SPSS software version 23. In testing this hypothesis, there is a decision-making criterion, namely, Ho is rejected if the significance value (2-tailed) is less than 0.05, while Ho is accepted if the significance value (2-tailed) is greater than 0.05. The results of the test using the t-test for independent samples can be seen in the table presented below.

Table 6. Independent samples test

		t-test for Equality of Means						
		T	Df	Sig. (2-tailed)	Mean difference	Std. error difference	95 % confidence interval of the difference	
							Lower	Upper
Student learning outcomes	Equal variances assumed	5.494	58	.000	8.333	1.517	5.297	11.370
	Equal variances not assumed	5.494	56.989	.000	8.333	1.517	5.296	11.371

Based on the results of the analysis, the significance value of the posttest showed a figure of 0.000, which was smaller than the significance level of 0.05. Thus, the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted. These results

indicate a significant difference in mean values between the experimental group and the control group.

Discussion

The results of the study showed significant effectiveness of the implementation of the talking stick learning model with the help of audio-visual aids in improving student learning outcomes. The students display enthusiasm and active participation during the learning process in the classroom using this method. The success of this approach can be attributed to the high involvement and enthusiasm of students in participating in learning. This is corroborated by the research of Sinaga et al. (2022), which emphasizes that the talking stick learning model, with the help of audio-visual aids, is an effective alternative in achieving learning goals. This method has proven to be useful in developing students' courage to express their opinions, encouraging the spirit of learning, and creating a pleasant learning atmosphere through game elements, which ultimately contributes to the optimization of learning outcomes.

Audio-visual media is an important support in learning, in addition to the use of innovative learning models to increase students' learning activities and motivation. According to Destini & Khairani (2022), audio-visual media with their attractive appearance can increase children's focus on learning. This media also helps students' understanding of learning materials because it provides meaningful experiences, so that it can increase their enthusiasm for learning. This is in line with Piaget's theory of constructivism, which explains that learning becomes easier when abstract concepts can be transformed into concrete ones, which ultimately encourages students' independent learning activities.

Susanto (2019) defines learning success as the changes experienced by students covering three aspects—cognitive, affective, and psychomotor. The achievement of learning goals that have been set by educators is an indicator that students have succeeded in their learning process.

Likewise, based on research by Palguna & Putra (2020), the comparison of the average score between the experimental and control groups, which is 0.56 to 0.35, shows that the experimental group has a better understanding. Furthermore, the research carried out by Antari (2020) showed the results of the t-test with an average score of 24.83 in the experimental class and 21.73 in the control class, which indicates that the application of the talking stick model with the help of audio-visual has a positive effect on the science learning outcomes of students in grades IV-V of elementary school.

Referring to previous research studies related to learning outcomes, there are several similarities and differences that can be identified. The study conducted by Palguna and Antari shows alignment with this research in terms of the use of a talking stick learning model combined with audio-visual media, as well as the selection of research samples that both involve elementary school students. The difference lies in the focus of learning outcomes that are specific to science subjects.

Based on research conducted at SDN Kampungdalem 6, the use of the talking stick learning model combined with audio-visual media has been proven to be more effective in improving the learning outcomes of grade V students compared to conventional learning methods. The increase in the average score in this experimental class is supported by the

use of appropriate audio-visual media, where the combination of sound and image elements makes it easier for students to understand the material. In addition, the application of the talking stick model with the help of audio visuals creates a more dynamic learning atmosphere, characterized by increased students' courage in expressing their opinions and their active participation in the learning process. This approach also succeeds in creating a fun and varied learning atmosphere through the integration of game elements in the process.

The use of the talking stick learning model in teaching and learning activities allows teachers to increase students' active participation in the classroom. This model encourages students to dare to express their opinions, which can ultimately improve learning outcomes significantly. Based on observations at SDN Kampungdalem 6, especially in science subjects in class V, the application of the talking stick model combined with audio-visual media has proven to be more effective than conventional learning methods.

CONCLUSION

Based on the description of the test and the discussion that has been presented, the results of the study show that the talking stick learning model, with the help of audio visuals, has been proven to be effective in improving the science learning outcomes of grade V students of SDN Kampungdalem 6. This conclusion is supported by statistical analysis using an Independent sample t-test, which yields a significance value of 0.000 (less than 0.05). In accordance with the established test criteria, a significance value smaller than 0.05 resulted in Ho being rejected and Ha being accepted. Thus, there is strong statistical evidence that the application of the audio-visual assisted talking stick learning model has a significant influence on student learning outcomes in science subjects in grade V of SDN Kampungdalem 6.

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