The Effect of the Talking Stick Learning Model on Student Learning Outcomes in Science Subject

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Abstract

This study aims to determine whether there is an influence of the Talking stick learning model on student learning outcomes in the science subject of class V SD Negeri Tondo. This research method uses a quasi-experimental research method, research design using a non-equivalent control group design. For research techniques using purposive sampling technique. The sample in this study amounted to 54 students, consisting of 27 VA class students as the experimental class and 27 students of VB class as control class. The research instrument is a multiple choice test with 18 questions. The data is statistically analyzed to find out significant achievements between the two groups, the experimental group used the talking stick learning model with the help of learning media obtained an average posttest score of 81.12 while the control class using the conventional model obtained an average posttest score of 49.95. Based on the significant value of the Paired Sample T Test is 0.000, because the significant value of the T-test <0.05 (0.000 <0.05) carried out at a significant level of 5% (0.05), then Ha is accepted and Ho is rejected. So it can be concluded that there is the influence of the Talking Stick learning model on science learning outcomes of V grade students at SD Negeri Tondo.

Keywords: The talking stick learning model, Learning Outcomes, Science subject

INTRODUCTION

Education in a broad perspective is all kinds of life experiences that encourage interest in learning to know and then be able to do something that is known. The main purpose of education in outline is as a means to improve the quality of various aspects of life in society.

One of the main assets of development is quality human resources (Aswar, Firman, & Mirnawati, 2021). The government's efforts to improve the quality of the nation through the national education system (UU No. 20 of 2003) are directed at fostering citizens who have love for the motherland, a strong sense of nationality, and a sense of social solidarity. In the world of education can not be separated from the teaching and learning process. Learning and teaching can foster self-confidence and be innovative as well as creative attitudes and behavior, so learning will create government efforts to improve the quality of the nation.

One of the factors that influence the learning system is the teacher. Teachers play an important role in determining the quality of planned teaching. According to Farida (2016) the teacher has a role as an activist who helps develop the potential and abilities of students to be better by designing learning that can achieve ideal quality conditions. So teachers as educators need to strive for a learning process that can create an active, effective and fun atmosphere, so that in the end it can affect the improvement of student learning outcomes.

The current learning process, in Elementary Schools (SD) uses the K13 Curriculum, which is applied in the form of themes, in a theme there are several sub-themes and in it there are several lessons. In one lesson there are several content, one of the learning content is Natural Sciences (IPA). IPA is a science that examines everything about phenomena that exist in nature (Kumala, 2016). Science learning is a series of activities that involve teachers, students, and science teaching materials in order to achieve changes in knowledge, understanding, attitudes and behavior, and skills. One of the achievements of educational goals, especially learning science, can be seen from the results of learning science obtained by students (Kumala, 2016).

In teaching and learning activities, especially science, teachers usually only use conventional learning which only uses lecture and assignment methods without using teaching aids so that students feel bored. According to Wirabumi (2020) states that the lecture method can be considered as a technique for delivering teaching material orally or through speech. The lecture method is a method that can be said to be a traditional method, because this method has long been used as a means of oral communication between teachers and students in the teaching and learning process.

According to Wirabumi (2020), each learning method that is given must have its own advantages and disadvantages, as well as the lecture method which has advantages and disadvantages. One of the advantages of the lecture method is that it is cheap and easy because it only uses oral media. In addition, the lecture method also has drawbacks, namely, the process of absorbing knowledge is lacking and students get bored quickly. Looking at science lessons, where the material is too dense and there are lots of foreign terms, it seems that students inevitably have to memorize the material. If the presentation of the material is only done using the lecture method, then student learning outcomes will not be maximized.

Student learning outcomes will be maximized if a supportive learning model is applied so that students don't get bored in participating in learning and can attract student focus. One learning model that does not make students bored in receiving lessons is the talking stick learning model. According to Tafonao (2020) the talking stick learning model can affect student learning outcomes, especially in the cognitive domain and demands activeness, creativity, for each student while participating in the learning process. This has become one of the researchers' interests in applying the talking stick learning model to find out whether there is a good influence on student learning outcomes when this learning model is applied. Then in order for science learning to become active and fun learning, the researcher chose the talking stick learning model because the talking stick learning model can arouse students' enthusiasm, where students are invited to learn while playing. This is in accordance with Nasroni's statement (2020) that the talking stick is a learning model that is oriented towards creating conditions and an atmosphere for active learning from students because there is an element of play in the learning process. So this learning model is very effective to apply to science subjects which have a lot of material by creating an active learning atmosphere for students.

Students consider science lessons to be a lesson that has a lot of material that must be memorized. This can have an impact on low student learning outcomes. Besides that, student learning in class shows that the learning patterns developed by teachers tend to focus on printed books and only convey material contained in printed books to students, in the teaching and learning process the teacher never uses learning models and other supporting facilities such as learning media. In general, science discusses the nature around us, there are many media or learning support tools that can make it easier for students to understand learning.

The talking stick learning model can have a positive influence on student learning outcomes. According to Tambunan (2018) there is a positive influence from the use of the talking stick type cooperative learning model on student learning outcomes in Social Sciences subjects. Likewise, according to Fadhillah (2019) said that the talking stick learning model has an effect on student learning outcomes, because during the learning process there are elements of games and group work between students, so as to foster a sense of competition between students and learning in class can be more interesting.

Based on the observational facts observed by researchers when learning took place at SD Negeri Tondo, that the teacher had not invited students to be directly involved in certain materials whose media were only in the school environment and only focused on books. This is also due to the incompleteness of school facilities in providing appropriate media for learning, causing low student learning outcomes.

Based on interviews conducted by researchers with SD Negeri Tondo teachers regarding the minimum completeness criteria (KKM) in science subjects, namely 74, where for the average score there are still many who have low scores and have not reached the minimum completeness criteria (KKM). From this, the efforts that must be made by the teacher to improve student learning outcomes are by using various learning models and methods in the delivery of a subject matter. the use of more varied learning models and methods is expected to provide a new atmosphere in the school learning process so that students can understand the lessons given.

The background of this research is students who are less active, the learning process makes students bored in science subjects and still tends to like to play, and the learning process is still dominated by the teacher. Therefore, the researcher is interested in using the talking stick learning model . Talking Stick is a learning model with the help of a stick, students who hold the stick must first answer questions from the teacher after students have studied the subject matter with the aim of seeing students dare to express their opinions and think critically and train children's mentality.

The reality in the field is that students still tend to play , lack enthusiasm and attention in participating in learning so that student learning outcomes are low. This is because the science materials in class V are quite complex, therefore the researcher adopts a learning model that inspires enthusiasm and tests students' focus in participating in learning. The Talking Stick learning model is one of the evocative and effective learning models used to help students accept the lessons given. Based on the description above, the researcher intends to conduct research on "The Influence of the Talking Stick Learning Model on Student Learning Outcomes in the Science Subject of SD Negeri Tondo".

METHOD

This research was conducted at SD Negeri Tondo with the type of research using quasi-experimental research (pseudo-experimental research). According to Sugiyono (2013) experimental research methods can be interpreted as research methods used to look for the effect of certain treatments on others under controlled conditions. The design used in this research is nonequivalent control group design. Sugiyono (2013) in his book says that this design is almost the same as the pretest-posttest control group design, only in this design the experimental group and control group are not randomly selected.

In this design, two groups were selected, then given a pretest to find out the initial conditions, whether there were differences between the experimental group and the control group. The experimental class was given treatment by applying the *talking stick model* , while the control class was not given treatment (only using conventional learning models). The results of the pretest are good if the values of the experimental group are significantly different as shown in Table 1.

Table 1. Research Design

Class	*Pretest*	Treatment	*Posttest*
Experiment	O_1	X_1	O_2
Control	O_2	X_2	O_4

Population and sample

The population is a generalized area consisting of objects/subjects that have certain qualities and characteristics determined by researchers to be studied and then conclusions drawn (Sugiyoni, 2013). So the population in principle is all members of groups of humans,

animals, events, or objects that live together in one place and are planned to become subjects/objects of a study. This study included all students of SD Negeri Tondo, Mantikulore District, totaling 296 students consisting of 145 female students and 151 male students.

According to Salim & Syahrum (2012) the sample is representative of the population. So the samples taken by the researchers in this study were fifth grade students at SD Negeri Tondo, Mantikulore District. Class V students whose total number is 54, consisting of 27 students in class VA and 27 students in class VB. The sampling technique used in this study was a *purposive sample*. According to Fauzy (2019) purposive sample, that is, sampling is carried out as needed. In order to facilitate research and not interfere with the learning process at school, two classes of samples were taken to be treated as research samples.

Data collection technique

Data collection techniques consist of interviews, tests and documentation. Interview is a process of collecting data for a study (Andriani, et al. 2020). So, the interview is a way of collecting data through question and answer to achieve the objectives of this research. The implementation of the first interview was conducted with the homeroom teacher of SD Negeri Tondo. The second interview process was carried out after the implementation of the posttest with Tondo public elementary school students in class V, both in the control class and in the experimental class, with students who had the highest, medium and low scores. The tests in this study were used to obtain data about student learning outcomes. The researcher uses a multiple choice test that can measure student learning outcomes. The data collection technique with documentation is the collection of data obtained through documents (Utami, et al. 2020). In this study using documentation as concrete evidence that supports the data collection process in the field. Documentation in this study was taken in the form of photos or pictures regarding the activities of researchers while conducting research in class V SD Negeri Tondo.

Data analysis technique

1. The normality test is used to find out whether the data obtained is normally distributed or not (Nuryadi, 2017). So the normality test is carried out to see whether the data obtained from the research results are normally distributed or not. The data in question are the values obtained by students in experimental class B and control class A. To test the normality of the data using the *liliefors method.*

2. Homogeneity test is a statistical test procedure that is intended to show that two or more groups of sample data come from populations that have the same variance (Nuryadi, 2017). So in this study a homogeneity test was carried out to find out whether the sample has a homogeneous variance or not in the learning in the experimental class and the control class. In carrying out the homogeneity test, first determine the hypothesis, after the hypothesis is carried out, the data is divided into two groups .

3. Hypothesis testing is a testing process to show whether it is right or wrong in a way that is free from the values and opinions of the researchers who compiled and tested it (Andriani, et al. 2020). So in this study the hypothesis is testing to test the truth of a statement statistically with the aim of drawing a conclusion whether to accept or reject the statement that has been made.

RESULTS AND DISCUSSION
Results

The results of the research conducted were obtained from pretest and posttest analysis data to draw conclusions. *The pretest* is an initial ability to determine students' initial abilities in understanding material on types of ecosystems and classifying animals based on the type of food they eat. Before being submitted to the experimental class with a total of 27 students and a control class with a total of 27 students, the questions given to students had been tested for validity and reliability. The results of the pretest analysis are presented in table 2.

Table 2. *Pretest Analysis Results*

Statistics	*Pretest* data	
	Experiment Class	control class
Means	39,43	38,84
Min score	22,2	16,6
Maximum score	55.5	55.5

Based on the results above, it can be concluded that the abilities of the experimental class and the control class are not much different. The experimental class *pretest* results obtained a minimum score of 22.2 and a maximum score of 55.5, while the control class obtained a minimum score of 16.6 and a maximum score of 55.5. Then the statistical results of the *posttest data* for the experimental class and the control class can be seen in the following table.

Table 3. *Posttest Analysis Results*

Statistics	*Posttest* data	
	Experiment Class	control class
Means	81,12	49.95
Min score	66,6	27,7
Maximum score	100	72,2

Based on the results of the analysis above, it can be concluded that the use of the *talking stick learning model* can affect the learning outcomes of fifth grade students at SD Negeri Tondo. The difference in the average *posttest scores* in the class shows that the use of *the talking stick learning model* is effective for improving learning outcomes in science subjects in class V SD Negeri Tondo.

Normality test

The test criteria used to measure normality in this study, if the Sig value is > 0.05, the data is normally distributed and if the Sig value is <0.05, the data is not normally distributed. The results of the data normality test in the experimental class and control class can be seen in table 3.

Table 3. *Pretest Normality Test Results* for Experimental and Control Classes

Class	Statistics	Df	Sig
Experiment Class	0.145	27	0.154
Control Class	0.139	27	0.194

Based on the table above, the results of the normality test using *liliefors* with the help of the IBM SPSS *Statistics* 25 program, show that all research data has a value of Sig > 0.05. The experimental class *pretest* value was (0.154 > 0.05), and the control class *pretest value was (0.194 > 0.05), so it can be concluded that the data is normally distributed.* All data is normally distributed so the analysis can be continued.

Homogeneity Test

The test criteria used to determine the homogeneity of this population is if the Sig value obtained $\geq$ the α set level of 5% (0.05) . The following describes the results of the data homogeneity test in the experimental class and control class which can be seen in table 4.5

Table 4. Homogeneity test results for experimental class and control class

Test Homogeneity if Variation				
Results	**Levene Statistics**	**df 1**	**df 2**	**Sig**
Based on Means	1,283	1	52	0.597

Based on the table above, the magnitude of the significant value in the experimental class and control class is 0.597 greater than the α set level (0.597 > 0.05). So it can be concluded that the experimental class data and the control class are both homogeneous.

Hypothesis testing

Hypothesis testing aims to find out a decision, namely to accept or reject a hypothesis that has been formulated. Testing the effect of the *talking stick learning model* on the learning outcomes of fifth grade students at SD Negeri Tondo uses the *Paired Sample T Test* analysis through the IBM SPSS *Statistics* 25 program . The hypothesis is carried out at a significant level of 5% (0.05) . The results of the *Paired Sample T Test* analysis with the help of IBM SPSS *Statistics* 25 calculations can be seen in table 4.6.

Table 5. Paired *Sample T Test Results*

		Paired Differences							
			std. Deviation	std. Error Means	95% Confidence Interval of the Difference				Sig. (2-tailed)
		Means			Lower	Upper	t	df	
Pair 1	PretestExperiemn - PosttestExperiemn	-41.3519	14.1522	2.7236	-46.9503	-35.7534	-15.183	26	0.000

Based on table 5 above, there is a significant value of *the Paired Sample T Test* which is 0.000, because the significant value of the T-test is <0.05 (0.000 <0.05) then Ha [is] accepted and Ho [is] rejected. So it can be concluded that there is an influence of the *Talking Stick* learning model on the science learning outcomes of fifth grade students at SD Negeri Tondo.

Discussion

This research was conducted at SD Negeri Tondo, Kec. Montikulore, Palu City, Central Sulawesi with the aim of knowing the effect of the talking stick learning model on student learning outcomes in science subjects, material on types of ecosystems and animal classification based on the type of food in class V SD Negeri Tondo. The stages of activity in the research carried out included testing research instruments, processing research instrument data, carrying out pretests in the experimental class and control class, teaching treatment of the experimental class and control class, and the last stage was the implementation of the posttest in the experimental class and control class.

In this study using a quasi-experimental research type. According to Sugiyono (2013) this type of research can be interpreted as a type of research used to look for the effect of certain treatments on others under controlled conditions. So from this understanding it is related to the researcher's goal, which is to find out whether there is an influence of the talking stick learning model on student learning outcomes in science subjects. In this study, researchers used the talking stick learning model to determine student learning outcomes after being given treatment. The treatment that the researcher uses in the experimental class is using the talking stick learning model which can help teachers to arouse students' enthusiasm in participating in learning so that students become more active and enthusiastic in the learning process, this is in accordance with Nasroni's statement (2020) that the talking stick is a model learning that is oriented towards creating conditions and an atmosphere for active learning from students because of the game elements in the learning process. Meanwhile, the control class uses a learning model that is usually carried out in schools, namely a learning model that is based on the teacher's textbook (conventional models). The purpose of this study was to determine the effect of the *talking stick learning model* on science learning outcomes in fifth grade students of SD Negeri Tondo.

From the results of the data it shows that the effect of *the talking stick* learning model on student learning outcomes on the types of ecosystems and the classification of animals based on the type of food in class V SD Negeri Tondo there is a significant difference in learning outcomes between students in the experimental class and students in the control class found in the material the IPAs. This is because there are differences in treatment between the experimental class and the control class. When learning in the experimental class the researcher used the talking stick learning model with presentation of the material using learning videos while in the control class used the conventional model, the lecture method and focused on printed books. This difference is because the lecture method is a learning method that does not involve students directly in learning and only focuses on books. As stated by Salamah (2019) in his journal, he said that lectures are often used in learning activities, there are no learning principles used, they rarely provide opportunities for students to ask questions and argue, there is no interaction between students and students in the form of cooperation.

Based on the results of the data analysis described earlier, it shows that the value of science learning outcomes, at the pretest or before being given treatment in the experimental class with an average value of 39.43 while the posttest score in the experimental class with an average value of 81.12. This is in accordance with the results of interviews with students in the experimental class using the talking stick learning model that students like the learning process in class, are more enthusiastic about participating in learning and students get new things that have never been obtained in the previous learning process. While the results of the pretest data analysis in the control class with an average value of 38.84 and the results of the posttest in the control class obtained an average value of 49.95 this is because according to the results of interviews with control class students that students quite like the learning process but tend to get bored and less enthusiastic about participating in learning because there are many new terms that are not understood in the reading texts in learning books.

From the learning outcomes measured by giving multiple choice questions and from interview data that there was a change in the level of student learning outcomes in the experimental class using the talking stick learning model compared to the control class. The talking stick learning model has an effect when used in the experimental class, because students are more active and enthusiastic about participating in learning and also get a new learning model that doesn't make them feel bored and focuses more on learning material and trains students to quickly remember material. This is consistent with the advantages of the talking stick learning model according to Kurniawati & Negara (2017), namely, this learning model can improve students' understanding of the material, test student readiness, train students to think quickly, get used to students reading and understanding material in a short time.

Learning in the control class using the lecture method did not experience a significant increase in learning outcomes because the provision of material was very limited, students only obtained material from books and the learning model used where the teacher was more active than students, so students tended to only get little information and students less active in learning. This is consistent with the weaknesses of the lecture method put forward by Ananda (2019) in his book stating that by applying the lecture method, the material that students can master as a result of lectures will be limited to what the teacher can master. This weakness is indeed the most dominant weakness, because what the teacher gives is what he is good at, so that what students master will depend on what the teacher knows.

Based on the results of the hypothesis, it can be concluded that the talking stick learning model on the material types of ecosystems and the classification of animals based on the type of food has a significant effect on student learning outcomes, this is evidenced by the results of the paired sample T-test hypothesis using the *application* program IBM SPSS Statistics 25 which shows that the significant value is 0.000 <0.05 so that it accepts Ha and rejects the Ho hypothesis. This means that there is a significant influence between the talking stick learning model and student learning outcomes.

CONCLUSION

Based on the results of research on the effect of the talking stick learning model on student learning outcomes in class V SD Negeri Tondo, the results of data analysis show that the significant value of the Paired Sample T-Test is 0.000, because the significant value of the T-test is <0.05 (0.000 <0.05) then Ha is accepted and Ho is rejected. The results of this study indicate that the experimental class using the talking stick learning model has a higher student learning outcomes in science subjects compared to the control class using the conventional learning model, namely the lecture method. So it can be concluded that there is an influence of the Talking Stick learning model on the science learning outcomes of fifth grade students at SD Negeri Tondo.

RECOMMENDATION

Implement the Talking Stick Learning Model: Educators should adopt the Talking Stick learning model in their classrooms to enhance student learning outcomes. This interactive approach fosters active student participation and enthusiasm, leading to a deeper understanding of the subject matter. By incorporating multimedia resources, group discussions, and problem-solving activities, teachers can create engaging learning environments that promote collaborative learning and critical thinking. Implementing the Talking Stick model will help create a dynamic and student-centered classroom atmosphere.

Teachers should emphasize active learning strategies to improve student engagement and comprehension. By incorporating hands-on experiments, group activities, and multimedia resources, educators can create opportunities for students to actively participate in their learning. These methods foster a deeper understanding of the material and enhance critical thinking and problem-solving skills. Encouraging active learning will create a more interactive and stimulating classroom environment, ultimately leading to improved learning outcomes.

To effectively implement innovative teaching methods such as the Talking Stick learning model, it is crucial to provide teachers with appropriate training and support. Professional development programs should focus on equipping educators with the necessary skills to create student-centered learning environments. Training sessions can help teachers design effective assessments, provide timely feedback, and facilitate collaborative learning. By investing in teacher training and support, educational institutions can ensure successful implementation of innovative teaching approaches and improve student learning outcomes.

While this study provides evidence of the positive influence of the Talking Stick learning model on student learning outcomes in science, it is important to conduct further research in different educational contexts and subjects. This will help validate the effectiveness of the model across a broader range of settings and provide more comprehensive insights into its impact on various learning domains. Encourage educational institutions and policymakers to invest in research on different teaching models and their impact on student learning outcomes. Continued research will help educators make informed decisions about adopting effective teaching methods and contribute to the advancement of teaching practices in the field of education.

this innovative teaching approach were instrumental in shaping the research findings. Their participation and willingness to explore new pedagogical methods are highly appreciated. This research would not have been possible without the support and collaboration of SD Negeri Tondo, and we express our deepest gratitude to all the stakeholders involved.

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