The Effect of Quantum Learning Model on Social Studies Learning Outcomes of Grade V Elementary School Students

Riska Mutia Afifa Azzahra[1*] , Ika Lestari[2] , Herlina Usman[3] , and Taofik [4]

[1,2,3,4]Universitas Negeri Jakarta, 12910 Jakarta, Indonesia

*riskamutiaa@gmail.com

Abstract. This study aims to determine the effect of the quantum learning model on the learning outcomes of fifth grade students in social studies subjects. The method used in this research is experimental quantitative method with True Experimental Design research design. The population in this study were all fifth grade students of SDN Cipinang Melayu 04 morning, with a research sample of 32 students of class V-C as the experimental class and class V-D as 32 students as the control class. The results showed a significant increase in social studies learning outcomes in the experimental group using the quantum learning model, with an average score before treatment of 69.38% and after treatment 83.13%. This finding is supported by previous research which also found the effectiveness of quantum learning model in improving social studies learning outcomes of elementary school students. The success of this model is due to the creation of a learning environment that is fun, interactive, and involves all the senses of students, in accordance with the principles of learning constructivism. In addition, the provision of positive reinforcement and motivation in the quantum learning model also contributes to increasing student motivation and learning outcomes. Efforts that can be made to improve social studies learning outcomes through this model include creating a conducive learning environment, using varied learning methods and involving students' active participation, accommodating students' diverse learning styles, and providing positive reinforcement and motivation to students.

Keywords: Quantum Learning, Learning Outcomes, Social Studies.

1 Introduction

Education plays an important role in preparing high quality human resources. Qualified human resources should have good social skills, thinking skills and self-confidence. Education affects all aspects of an individual's personality and life, including physical, mental/mind, behavioral, emotional, social and ethical development. Education is a conscious and planned effort to create a learning atmosphere so that students are active in learning.

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develop their potential to have spiritual strength, self-control, personality, intelligence, morals and noble character, as well as skills needed by themselves, society, nation and State (Elsinora, 2019).

Susanto (2013) suggests that social studies education in elementary schools is a subject that studies humans in all aspects of life and interaction in society. Where the environment is a place where students grow and develop in various community activities, and faced with various problems that occur in the community. Rochmadi (2008:5) suggests that social studies is a combination of s o c i a l science concepts with educational concepts studied systematically, psychologically, functionally in accordance with the level of student development. With the learning of social studies in elementary school is expected that students are able to cope with what is happening in their environment. NCSS explains (in Ruminiati, 2010) that the purpose of learning social studies to bring the younger generation as the nation's successor in developing its ability to become a knowledgeable human being. Social studies learning outcomes ideally include various aspects that include knowledge, understanding, attitudes, and behavior. Encourage students' ability to understand basic concepts, apply this knowledge in real situations, and show a positive attitude and good behavior in facing challenges and problems in everyday life.

However, based on a preliminary study conducted by Yetni Marlina (2021) at SD Negeri 133 South Halmahera from the data on the value of social studies learning outcomes, it was found that the teacher still used the lecture and question and answer method only. This method forms students to be less active and even often leave the class when the learning process takes place. During the learning process, students seem bored and often do not pay attention to the teacher, so that student learning outcomes are found that grade V students of SD Negeri 133 South Halmahera are still below the KKM.

The results of preliminary observations conducted on the learning process of teaching and learning activities of social studies class V students at SD Negeri Cipinang Melayu 04 Pagi, East Jakarta it turns out that most of the students learning outcomes can not reach the Maximum Completeness Criteria (KKM) determined that for social studies subjects the minimum completeness criteria set is 78. Based on the results of interviews conducted with grade V teachers and some grade V students, there are several problems encountered in learning social studies, among others: 1) Teachers have not been able to present a pleasant learning atmosphere for students, the method used by teachers is still very monotonous, namely the lecture method. This causes the loss of motivation of students in social studies lessons and students' assumptions of social studies lessons are boring lessons increasingly attached to their minds. (2) Student interest in learning social studies is still low. This can be observed from the behavior of students who are less enthusiastic during the learning process and there is no reciprocity such as asking questions or answering with their own awareness.

Based on the above problems, it is necessary to apply an innovative learning model in social studies learning. This is done to maximize the activeness and role of students in learning (Trianto,

2009). One of the innovative learning models that should be applied in social studies learning is the Quantum Learning model. This model demands freedom, relaxed, amazing, fun, and exciting (DePorter, 2009). In its aspect will balance between the right brain and the left brain, service to the visual learning style; auditorial; and kinesthetic, experiential learning and simulation / games. In line with that, teachers are expected to have the ability and skills and learning (DePorter & Mike, 2000). This model also emphasizes the level of pleasure of students in learning so as to increase the memory of students to achieve good learning outcomes (Herman, 2013).

DePorter and Hernacki (2016) in their book mention that the Quantum Learning model presents learning steps/stages that can hone students' understanding and memory through a fun learning process. For this reason, the presentation of learning with this model must be challenging, impressive and can foster student creativity. The active role of students in learning is reflected in the active group discussions, as well as the responses shown during the learning process. That way the learning objectives of social studies will be more easily realized.

The level of student success in the learning that has been done is expressed by the learning outcomes. According to Thoirin in (Rahman, 2021: 297) says that learning outcomes are the abilities that students have achieved after carrying out learning activities. Learning outcomes are the results given to students in the form of an assessment after following the learning process by assessing knowledge, attitudes, skills in students with changes in behavior.

The previous research that strengthens this research is research conducted by Nur Kamar (2018) entitled "The Effect of Quantum Learning Method on Social Studies Learning Outcomes of Class IV Students of SD Inpres Panggentungang Utara District Somba Opu Gowa Regency" shows that the application of the Quantum Learning method affects the social studies learning outcomes of class IV students of SD Inpres Panggentungang Utara District Somba Opu Gowa Regency, then put forward suggestions to educators researchers and prospective researchers to make the Quantum Learning method as one of the methods in learning by applying to other materials to find out whether other materials are suitable for this learning model in order to achieve the expected learning objectives.

Another study was conducted by Diana Putri Simanjuntak (2020) with the title "The Effect of the Quantum Learning Model on the Learning Outcomes of Class V Students of SD Negeri 060970 Belawan" the results of research in class VA (as an experimental class) using the quantum learning model had an average pre-test value of 60.55 then after treatment the average posttest value was 86.05. And the results of research for class VB (control class) using conventional learning models have an average pretest value of 61.35 after treatment the average posttest value is 70.875. From the t-test results obtained tcount = 6.615 while ttable = 0.024 because tcount> ttable (7.105>2.024) then H0 is accepted. Through the t-test, it was found that the quantum learning model affects student learning outcomes. Based on the research results and

Based on the data analysis that has been done, it can be concluded that there is a significant influence between the quantum learning model on the learning outcomes of fifth grade students of SD Negeri 060970 Belawan.

Therefore, in this study researchers wanted to see the effect of Quantum Learning learning model on social studies learning outcomes of grade V elementary school students.

2 Research Methods

2.1 Research Approach

The research method used in this research is the experimental method. Experimental research is research used to seek the effect of certain treatments on others in controlled conditions, controlled conditions mean that the results of the study are converted into numbers, for the analysis used is to use statistical analysis (Sugiyono, 2011). This research is one type of quanti- tative research that strongly measures cause and effect (Prasetyo, 2008).**Sample Heading (Third Level).** Only two levels of headings should be numbered. Lower level headings remain unnumbered; they are formatted as run-in headings.

2.2 Research Design

The research design used is True Experimental Design and the form of design chosen is Pretest-Posttest Control Group Design. In the application of this research design, student learning outcomes will be assessed through two stages, namely the initial stage (pre-test) and the final stage (post-test).

Table 1. Research Design

Group	Pretest	Treatment	Posttest
Experiment	O1	X1	O2
Control	O1	X2	O2

Description:

O1 : Pretest is a test question given to students before treatment O2 :

Posttest is a test question given to students after treatment

X1 : Treatment (learning using the Quantum Learning model)

X2 : Treatment (learning using Cooperative Learn- ing model).

2.3 Population and Sample

The population used in this study is an affordable population. The affordable population is a population that can be observed by researchers because it is limited by place and time. The affordable population in this study is SDN Cipinang Melayu 04 Pagi, Kec. Makasar, East Jakarta. While the sampling technique used in this study is random sampling because taking sample members from the population is done randomly without paying attention to the strata in the population (Sugiyono, 2011: 81-82). The sampling method in simple random sampling is very simple, namely by lottery or shuffling. After shuffling all fifth grade classes at SDN Cipinang Melayu 04 Pagi, the class selected as the experimental class was class VC and class VD as the control class. Each class has 32 students.

2.4 Data Collection Technique

The data collection technique used in this study i s in the form of test questions given at the beginning and at the end of learning. In the initial stage (pre-test) all students from the experimental class and control class will be given a test instrument in the form of a question to determine the student's learning outcomes before treatment. After that, researchers conducted different treatments between the experimental class and the control class. The experimental class received treatment in the form of using the Quantum Learning model, while the control class was given treatment using the Cooperative Learning model. Furthermore, researchers gave the test again at the final stage (post-test) using the same test instrument used in the initial stage test (pre-test) whose purpose was to determine the effect on student learning outcomes after receiving different treatments.

2.5 Validity and Reliability

The data validity test is carried out to ensure that each item in the instrument is valid or able to measure what should be measured. The validity test was carried out using the point biserial correlation formula. After testing, the results obtained were that all items in the social studies learning outcomes test instrument had an r-count value greater than the r-table (0.349 for N = 32 and $\alpha = 0.05$). This indicates that each item is valid and can be used in research.

After conducting a normality test, the researcher conducted a data reliability test to determine the consistency of the social studies learning outcomes test instrument. Reliability test in this study using the Cronbach Alpha formula. Reliability testing on the social studies learning outcomes test instrument obtained the Alpha Cronbach coefficient value of the social studies learning outcomes test instrument is 0.660 greater than 0.6 which is the minimum limit to be said to be reliable. Thus, the test instrument used in this study was declared reliable.

2.6 Data Analysis Technique

Before conducting further data analysis, researchers conducted a data normality test first to determine whether the social studies learning outcomes data from both groups (experimental and control) were normally distributed or not. The normality test in this study used the Lilliefors test with a significance level of 0.05.

Table 2. Data normality test

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelas	Statistic	df	Sig.	Statistic	df	Sig.
Hasil Belajar	Pretest Eksperimen	,136	32	,141	,942	32	,087
	Posttest Eksperimen	,183	32	,008	,875	32	,002
	Pretest Kontrol	,149	32	,069	,939	32	,072
	Posttest Kontrol	,151	32	,063	,911	32	,012

a. Lilliefors Significance Correction

Based on the table above, it can be seen that the significance value (Sig.) >0.05 indicates that the data is normally distributed. After it is known that the data is normally distributed, the next step is to conduct a test.

homogeneity to determine whether the data variance of the two groups is homogeneous or not. The homogeneity test in this study used the *Levene* test with a significance level of 0.05.

Table 3: Data Homogeneity Test

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance		Mean	Std. Error	95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Difference	Difference	Lower	Upper
Hasil Belajar	Equal variances assumed	3,492	,066	-1,842	62	,035	,070	-9,063	4,920	-18,897	,772
	Equal variances not assumed			-1,842	53,507	,036	,071	-9,063	4,920	-18,928	,803

The table above shows that the significance value (Sig.) of the *Levene* test is 0.066 greater than 0.05. This indicates that the variance of social studies learning outcomes data from both groups is homogeneous. By achieving the assumptions of normality and homogeneity of data, the next data analysis can be done using the *Paired Sample T Test.*

Table 4. Paired Samples T Test

Paired Samples Test

		Paired Differences					t	df	Significance	
					95% Confidence Interval of the Difference					
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			One-Sided p	Two-Sided p
Pair 1	Pretest - Posttest	-13,750	12,378	2,188	-18,213	-9,287	-6,284	31	<,001	<,001

The significance value of the t test is 0.001 <0.05. This means that there is a significant difference in the average social studies learning outcomes between the experimental group and the control group. In other words, the application of the *quantum learning* model has a positive effect on improving the social studies learning outcomes of grade V elementary school students.

3 Results and Discussion

Based on the results of research that has been conducted on grade V students of SDN Cipinang Melayu 04 Pagi, it shows that there is an effect of quantum learning model on the learning outcomes of grade V students in social studies subjects. In this study, data were collected from 64 fifth grade students who were divided into two groups, namely the experimental group of 32 students who were taught using the quantum learning model and the control group.

32 students who were taught with a cooperative learning model. Social studies learning outcomes data were taken through test questions given before and after treatment. The average student learning outcomes using the quantum learning model before using the quantum learning model was 69.38% and after using the quantum learning model increased to 83.13%. This shows that there is an increase in student learning outcomes after using quantum learning models and it can be concluded that quantum learning models can improve student learning outcomes in social studies subjects.

This research is supported by research conducted by Irfan (2020) on grade V students of SD Negeri 1 Bantul showed that the application of quantum learning models can significantly improve students' social studies learning outcomes. The results showed that the average posttest score of the experimental group using the quantum learning model was 82.5, while the control group using conventional methods only reached an average of 75.2. However, the results of research conducted by Wijaya (2021) on grade V students of SD Negeri 3 Surabaya showed that there was no significant difference in social studies learning outcomes between the group taught using the quantum learning model and the group taught with conventional methods.

The quantum learning model is proven effective in improving the learning outcomes of grade V students in social studies subjects because this model emphasizes the creation of a fun, interactive learning environment, and involves all students' senses in the learning process. In line with constructivism learning theory, students' active involvement in learning can help them to build knowledge independently through meaningful learning experiences. This is supported by Siregar's research (2019) which found that the quantum learning model can improve students' social studies learning outcomes because it creates a pleasant learning environment and involves active student participation. Another factor that makes the quantum learning model effective is the positive reinforcement and motivation given to students. This can improve

students' confidence and enthusiasm in learning, so that they are more actively involved in the learning process. Suryani (2020) states that the provision of positive reinforcement and motivation in the quantum learning model has a positive effect on student motivation and social studies learning outcomes.

Efforts that can be made in improving student learning outcomes in social studies through the application of quantum learning models, teachers should ensure the creation of a pleasant and conducive learning environment. When students feel comfortable and interested in the learning environment, they will be more actively involved in the social studies learning process. Then, teachers need to use varied learning methods that involve active participation of students. The use of methods such as educational games, group discussions, and presentations in the quantum learning model has proven effective in improving the understanding of social studies concepts in elementary school students. Furthermore, teachers should accommodate students' diverse learning styles. By accommodating different learning styles, students will more easily absorb information and build a deeper understanding. Then, giving positive reinforcement and motivation to students is an important aspect in the quantum learning model. Widodo's (2019) research shows that positive reinforcement, such as praise or reward, can increase students' confidence and motivation to learn in social studies subjects. When students are motivated, they will be more engaged and excited in the learning process, which in turn can improve learning outcomes.

4 Conclusion

Based on the results of the research and discussion that has been presented, it can be concluded that the quantum learning model is proven effective in improving student learning outcomes in social studies subjects in class V SDN Cipinang Melayu 04 Pagi which shows an increase in student learning outcomes after the application of the quantum learning model. The effectiveness of the model

quantum learning in improving social studies learning outcomes is caused by several main factors, namely: (1) the creation of a learning environment that is fun, interactive, and involves all students' senses in the learning process. (2) the use of varied learning methods, such as educational games, group discussions, and presentations. (3) accommodation o f students' different learning styles, whether visual, auditory, or kinesthetic, making it easier for students to absorb and understand information. (4) providing positive reinforcement and motivation to students, which can increase students' confidence, enthusiasm, and engagement in the learning process.

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