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SCIENCE TECHNOLOGY SOCIETY (STS) APPROACH FOR IMPROVEMENT CRITICAL THINKING IN CLASS IV STUDIES SOCIALS LEARNING

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Abstract. This research is based on the reality that social studies learning has not been adequate at improve students' abilities so that they can use their reasoning when decide every problem they face, because of the approach used by teachers are still considered less effective. The purpose of this research is to increase critical thinking in social studies learning class IV renewable resource material and non-renewable through the Science Technology Society (STS) approach. This study uses a qualitative approach. Data collection technique through observation, interviews with teacher informants and fourth grade students of MIMA NU 1 Karangkemiri. credibility of the data has been tested by technical triangulation with interactive techniques, namely data reduction, data display, and verification. Based data that has been collected, it was found that critical thinking in students' self-esteem began to improve after using the Science Technology approach Society (STS) in class IV social studies learning.

Keywords: Science Technology Society, Critical Thinking, Social Studies Learning

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INTRODUCTION

In the 21st century, technology is advancing and developing in both fields of education and in other fields. This causes technology to enter the world of education more rapidly, which has caused positive and negative impacts (Desrinelti et al., 2021). The positive impact of technology can make it easier to do work using the technological tools that for created. The negative impact is if we lack the knowledge to use this technology wisely, it will turn into misery for society.

IPS education should have an important role in preparing students to face these formidable challenges. One of them is by creating learning that can make students aware of the challenges they face and can overcome problems that arise in their daily lives. Strengthened by the Regulation of the Minister of National Education (Permendiknas) Number 22 of 2006, social studies learning requires students to be able to think critically, because social problems faced by students now and in the future need to be criticized wisely and consider various social dimensions (Permendiknas Nomor 22 Tentang Standar Isi, 2006).

But in reality, the learning process in the classroom is directed at the child's ability to memorize information alone without being required to understand the information he remembers for everyday life. Learning patterns developed by teachers tend to be teacher-centric so that students only become learning objects (Dharin et al., 2020). IPS cannot develop children's ability to think critically and systematically, because the learning approach to thinking is not being used properly in every learning process in class (Sanjaya, 2008). Coupled with a large number of students who are less motivated in learning because it is felt that social studies learning is very boring, and the teacher only lectures. this shows that the motivation of students to learn and think critically is very low. It is necessary to develop teaching materials through the right approach. One alternative is to use the Community Technology Science (STS) approach.

The Community Technology Science Approach (STS) gives meaning to social studies because learning is related to the lives of students or everyday people. In line with the thinking of S Jauhar (2018) The STS approach forms a learning process that emphasizes mastery of scientific concepts and emphasizes the role of science and technology in various societies. Community Technology Science (STS) is also an interdisciplinary knowledge, where understanding STS will raise concern for problems related to Science technology, and community welfare (Poedjiadi, 2007). The purpose of this (STS) approach is to produce students who are sufficiently equipped with a piece of knowledge, so that they can make important decisions about problems in society and take action concerning the decisions they have taken.

On the other hand, learning does not only transfer knowledge but also relates to how students can understand the impact of learning or learning outcomes so that the knowledge gained at school will be very beneficial when applied in society. Vygotsky, states "human learning presupposes a specific social nature and a process by which children grow into the intellectual life of those around them" meaning that building intellectual life and thought processes requires an introduction to the social environment (Vygotsky, 1978). This introduction should be made as early as possible starting from basic education so that students can think critically.

Based on this background, the researcher considers that the Community Science Technology (STS) approach is appropriate to apply to social studies learning to increase critical thinking, especially in class IV on Basic Competency (KD) to identify spatial characteristics and use of natural resources for community welfare from the city/regency level to provincial level on renewable and non-renewable natural resource materials. learning steps using the Community Technology Science (STS) approach through several stages (Asy'ari, 2006) include: (1) the invitation stage; (2) the exploration stage; (3) the solution stage; (4) the application stage. Students discuss in groups and then present the results of the discussion in front of the class. This activity is expected to increase critical thinking in social studies learning for fourth-grade students.

1.1. Social Learning

Gross (in Etin, 2005) states that the purpose of IPS is to prepare students to become good citizens in their lives in society. Another goal of IPS, according to Rintati Megawati and Tutuk Ningsih (2020), is to provide understanding, guidance, and development of student's potential so that they can: (1) create good individuals for the country and the world; (2) develop the basic knowledge of economics, history, geography, sociology, citizenship, and social society in an integrated manner (3) think critically wisely and develop inquiry skills in the process of understanding, analyzing a phenomenon to take action in solving social

national problems.

1.2. Science Technology Society (STS)

The definition of the STM approach is social studies learning with an emphasis on basic concepts and processes of science and technology, involving students in activities of identifying, analyzing, and finding solutions to issues or problems encountered in everyday life. According to Maslichah Asyari (Asy'ari, 2006), learning steps using the Science Technology Society (STS) approach are as follows:

1.1.1 The Invitation Stage conveys actual issues or problems that are currently developing in the surrounding community. Issues or problems are explored from the opinions or desires of students and those that are related to the Social Sciences concept to be studied.

1.1.2 Exploration Stage, at this stage students through their actions and reactions try to understand/learn new situations which are a problem for them. This can be reached by reading books, viewing news on social media, discussing with friends, conducting interviews with the public, or conducting direct field observations.

1.2.3. In the Exploration Stage, students analyze the phenomenon and discuss how to solve the problem. In other words, students get to know and build new concepts that are following local environmental conditions. To strengthen the concepts obtained by these students, the teacher needs to provide feedback and confirmation.

1.2.4. Application Stage, at this stage students get the opportunity to use the concepts that have been obtained to live their daily lives. Students can make short essays, posters, and caricatures, from solving a problem

1.3. Critical thinking

Critical thinking is an ability that goes beyond memorization. When students think critically, they should be able to question hypotheses, analyze events, and synthesize events. Critical thinking makes students go further by developing new hypotheses and testing them against facts (M. Karakoç, 2016). According to Jhonson in (Rahmatillah et al., 2017) critical thinking is a directed and clear process that is used in mental activities such as solving problems, making decisions, persuading, analyzing assumptions, and conducting scientific research. The directed and clear process in question is a well-organized or well-planned and real process. In line with Hananto (Hananto Purbonugroho et al., 2020) critical thinking is a mental activity carried out through interpretation, analysis, identification, explanation, and self-monitoring which is used to make decisions in problem-solving activities. The purpose of critical thinking according to Ifada Novikasari (Ifada Novikasari, 2009) is to achieve a deep understanding. Meanwhile, according to Facione (Facione, 2015) indicators of critical thinking include: Interpretation, Analysis, Evaluation, Explanation, Inference, and Self-regulation.

RESEARCH METHOD

This research was conducted in class IV MIMA NU 01 Karangkemiri. The approach used in this study is qualitative. This approach is intended to make improvements and enhance the learning process in a class. A qualitative approach is used because it is a research procedure that produces descriptive data in the form of written or spoken words and observed

behavior from people or sources of information (Bogdan & Biklen, 1992). The type of research carried out is descriptive qualitative research to describe a specific human or individual (Noeng Muhadjir, 1987). Data collection techniques used are interviews, observation, and documentation. Researchers conducted interviews with fourth-grade teachers and fourth-grade students. Then, researchers used observation by carrying out the observation process. Observations were made during the implementation and evaluation of learning. The documents used are in the form of teacher lesson plans, worksheets, photos, videos, and other documents related to social studies class IV material on renewable and non-renewable energy sources.

To test the credibility of the data, technical triangulation is carried out so that the data obtained is consistent, complete, and certain, namely by using various methods of collecting data from the same source (Sugiyono, 2013). The data analysis technique in this study was interactive, namely: (1) data reduction, by selecting the main points and focusing on matters related to discussion activities in social studies learning; (2) display data, by compiling and presenting relevant data so that the structure can be understood; (3) conclusion drawing/verification, conclusion drawing and verification of the collected data to be arranged systematically so that meaningful and comprehensive information is obtained.

RESULT AND DISCUSSION

1. Planning

Class IV teachers carry out KI/KD analysis and prepare lesson plans. KI/KD analysis is carried out to identify competencies that must be achieved through discussion activities. The analysis was carried out on theme 2 "Always Save Energy" sub-theme 1, lesson 6 contains material "Renewable and Non-Renewable Natural Resources. Basic Competency implemented regarding (KD 3.2) Identifying the characteristics of space and the utilization of natural resources for the welfare of the community from the city/district level to the provincial level; (KD 4.2) Presenting the results of the identification of spatial characteristics and the utilization of natural resources for the welfare of the community from the city/district level to the provincial level. With the following indicators: (3.2.1) identify natural resources and their utilization; (4.2.1) Presenting the results of the identification of natural resources and their utilization in written form.

After doing the KI/KD analysis, the class IV teacher then determines the approach and learning method. The learning approaches and methods chosen in the RPP must facilitate students in achieving target knowledge and skills and developing their character (Khusniati, 2012). The approach used is the Science Technology Society (STS) approach. The purpose of this Community Technology Science (STS) approach is to produce students who are sufficiently equipped with the knowledge, so that they can make important decisions about problems in society and take action regarding the decisions they have taken (Poedjiadi, 2007). Finally, in this stage, the class teacher arranges learning steps.

Implementation

1.1 Invitation Stage

The teacher's early learning activities explain classically the learning objectives that must

be mastered by students after carrying out teaching and learning activities. Then proceed with generating student schemas by asking for examples of renewable and non-renewable resources. Then the teacher conveys the material being studied at that time, namely about renewable and non-renewable resources found on page 20 of worksheets that students have previously read so that reading literacy skills are further honed. After that, the invitation step was carried out with questions and answers about any problems that exist in the environment related to renewable and non-renewable resources contained in the LKS.

1.2 Exploration Stage

This stage is in the form of organizing students into study groups, 18 students are divided into 4 study groups. Where the organization of these students is seen based on the basic scores obtained by students from the results of previous material tests. Based on the basic score, the teacher divides students into heterogeneous groups, where in each group there are students who have low, medium, and high academic abilities and gender variations. In the learning activity, each group was given 1 sheet of text containing an article entitled "Prices of Pertamax Going Up Ahead of Lebaran Homecoming" then students answered questions on student worksheets that had been provided by the teacher. These questions include: (1) why did the price of fuel oil (pertamax) increase ahead of Eid; (2) what is the economic condition of the community as a result of the increase in fuel oil (pertamax); (3) Solutions proposed by the group. The problems discussed are problems whose answers are not in the text, where students are required to think critically about social phenomena that arise in the community. From these 3 questions, various ideas emerged from students after they discussed them in their respective groups. Then their ideas/ideas are poured into the LKPD.

1.3 Solution and Action Stage

Discussion of solutions and actions, activities in the form of group representatives presenting the results of their discussions in front of the class, while other groups respond to the results of discussions that have been reported by their friends. The LKPD that has been made is collected, and the teacher gives rewards to representatives from each group who have dared to present it in front of the class by giving applause.

1.4 Application Stage

This stage asks students to think of other solutions to overcome the problem of renewable and non-renewable resources according to their knowledge and experience. And continued with questions and answers about students' experiences in preserving renewable and non-renewable resources and putting them in the form of posters and then putting them up in public places (still within the school environment).

2. Evaluation

Assessment is something that cannot be separated from the learning process. IPS learning assessment is carried out continuously during the learning process. According to Nana (Supriatna, 2004) assessment is giving consideration or price to something based on certain criteria. The assessment carried out by the teacher is by observational assessment. Observation is an authentic assessment that can be used in assessing student attitudes (Kamiludin & Suryaman, 2017). Based on the results of interviews with teachers, observation assessments about students' critical thinking using the Science Technology Society (STS)

approach have achieved learning objectives. The results of the observations showed that students dared to express opinions to overcome problems that occurred in society concerning renewable and non-renewable energy sources. In addition, evaluation is also carried out in the form of daily tests. The class average results during daily social studies learning tests increased, compared to before using the Community Science Technology (STS) approach.

CONCLUSION

Community Technology Science (STS) is an approach that can be used to develop social studies learning materials. By using the Science Technology Society (STS) approach, students: (1) are trained to have the courage to express opinions and ask questions in learning so that students have IPS process skills; (2) can teach students to be able to know and overcome problems that occur in their daily lives and be able to know technological developments from time to time; (3) training students' courage in expressing ideas, exchanging ideas, accepting friends' opinions, actively discussing, listening to friends' explanations properly, and avoiding the exclusion of friends. This is because in the group all students will work together for the success of the group. Based on this description, the Community Technology Science (STS) approach is efficiently applied to improve students' critical thinking. The class average results during daily social studies learning tests also increased, compared to before using the Community Science Technology (STS) approach.

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