

# Effectiveness of Social Media-Based STM (Science, Technology, and Society) Learning Model with Case Study Learning Method in Class XI High School Sociology Material

Elisa Dourothun Nafis El Adibah<sup>1</sup>, Depict Pristine Adi<sup>2</sup>, Syafril Wicaksono<sup>3</sup>, M. Khoirul Hadi al-Asy Ari<sup>4</sup>

<sup>1</sup>Student Of the Islamic Tadris IPS Study Program at UIN Khas Jember, <sup>2</sup>Tadris IPS Lecturer at Kiai State Islamic University Haji Achmad Siddiq Jember, <sup>3</sup>Students of the Islamic Economics Law Study Program at UIN Khas Jember, <sup>4</sup>Doctoral Students at UIN Sunan Kalijaga Yogyakarta

Corresponding author

[dneaelisa@gmail.com](mailto:dneaelisa@gmail.com), [depictpristine@uinkhas.ac.id](mailto:depictpristine@uinkhas.ac.id), [syafrilwicaksono@gmail.com](mailto:syafrilwicaksono@gmail.com), [khoirulhadi1111@gmail.com](mailto:khoirulhadi1111@gmail.com)

**Abstract:** The use of social media in Indonesia has continued to grow significantly in the last decade, with evidence that Indonesia occupies the third position of the largest social media user in the world. This makes social media an inherent part of people's lives. In the context of education, social media can be an effective tool to enhance learning and adapt to the ever-changing changing world, especially in the 5.0 era which is characterized by technological sophistication and rapid social changes in everyday life. This inspired researchers to examine the effectiveness of the social media-based STM (Science, Technology, and Society) learning model with a case study learning method with a focus on sociology material in Class XI Senior High School. The STM learning model with the case study method has compatibility in the implementation of the learning process by prioritizing problems and linking science concepts with technology products that are developing in society. With a problem-oriented framework, it is ideal for class XI sociology material that addresses social problems in society. So with this, the researcher wants to examine three problem formulations, including: One is why the social media-based STM learning model with the case study learning method was chosen as a learning approach in class XI sociology material. Two, How to implement the social media-based STM learning model with the case study learning method in class XI high school sociology material. Three, how is the effectiveness of applying the STM Model with the case study method in teaching sociology material for class XI?. This research uses a descriptive qualitative approach through the literature study method. The results showed that the social media-based STM learning model with the case study method can increase student motivation and participation, facilitate discussion and collaboration between students, expand access to relevant information, and provide real learning experiences.

**Keywords:** Social Media-Based STM (Science, Technology, and Society) Learning Model, Case Study Method, Class XI Sociology Subjects

## Introduction

Education is the main door for humans to develop into complete humans who benefit themselves, society, nation, and state. Law no. 20 of 2003 states that education is a conscious effort to create good learning in order to realize students' potential in terms of personality, religion, ethics, intellectuals, and the skills needed (Pristiwanti et al. 2022)

However, education is currently still experiencing many obstacles to its implementation.

Based on research data by Fitria Nur Aulia Kurniawati, who reviewed the problems of education quality in Indonesia in 2022, one of the problems was that learning methods still needed to be more varied. Hence, the learning process could have been more enjoyable, and the quality of teachers could have been improved. (Kurniawati

2022) Dari permasalahan tersebut berhubungan dengan proses pembelajaran yang dirancang secara sistematis oleh guru dalam mewujudkan interaksi yang aktif guna mencapai tujuan pembelajaran. These problems are related to the learning process, which the teacher systematically designs to realize active interaction to achieve learning goals.(Widyanto and Wahyuni 2020) Before teaching, teachers should design adequate and appropriate strategies for the subject and students' abilities. This needs to be considered in order to create effective learning in the classroom.

Effective learning is an effort to ensure a comfortable, simple, and enjoyable learning process for students while still achieving the desired goals. The teaching provided can produce a quality learning process. Namely, students can participate well and capture the meaning obtained.(Junaedi 2019) The learning model is influential in implementing education. It is a learning process that is planned from start to finish and provided by the teacher. A learning model is a package of implementing approaches, methods, strategies, and learning techniques.

Therefore, when implementing the learning process, one must consider essential components that become the reference for expected success. Components that need to be considered are teachers, students, learning objectives, learning methods, learning strategies, learning media, materials, and evaluation. Based on general problems where the method applied is still monotonous, the author provides data related to problems or obstacles in the learning process with a focus on sociological material, including:

Teachers as Facilitators in Sociology Learning at SMAN 2 Batusangka. The research results explain the factors that hinder teachers as facilitators due to various things, including inadequate school facilities to support student learning resources; teacher factors are the center of obstacles because teachers do not carry out their learning activities by the RPP and lack of knowledge in understanding models and media. The learning that will be used in the learning process has yet to be ready to face advances in science and technology and is still the subject that dominates the classroom. Student

problems also result in a lack of interest in learning and low motivation.(Jannah and Junaidi 2020)

Second, research by Yorisa Y Marwa and Reno F, with the title Implementation of Learning Implementation Plans in Sociology Learning (Case Study of SMAN 3 Painan and SMAN 2 Bayang). The results of the data studied are that the implementation of lesson plans in Sociology learning with curriculum 13 at SMAN 3 Painan and SMAN 2 Bayang is still not optimal due to a lack of facilities and infrastructure as well as limited time in the learning process.(Yorisa Yora Marwa 2019)

Third, research by Yunus N Kautsar, with the title Problems in Sociology Learning (Study of SMA/MA equivalent Sociology Teachers in Lalabata District, Soppeng Regency), explains that the problems faced by teachers include the delivery of material that takes a long time, differences in student attitudes, the use of the lecture method, which is monotonous. The use of learning models and media still needs to be improved and more optimal, and there needs to be more books on sociology available in libraries.(Kautsar 2015)

These three previous studies are interesting to researchers; there are problems with teachers who have not fully mastered learning models and strategies, lesson plans that have not been fully implemented, and learning media that have not been maximized. Apart from teachers' lack of understanding regarding learning models, their lack of mastery of science and technology needs to be considered, which is a demand for developmental adjustments for teachers.

The teacher is the primary reference who plays a full role in creating suitable learning by what is expected, so he needs to be able to do various things in creating the learning process. Teachers can participate in training related to learning models, innovation in developing media, etc. In the era of society 5.0, the speed of existing technology requires education to adapt. In this case, teachers play a role in updating existing technology to create learning according to the times. From the problems above, there are learning approaches appropriate to current learning, namely science, technology, and societal approaches. This approach can provide several benefits for teachers with

technological limitations in designing and implementing learning. The benefits obtained by teachers are that science, technology, and society influence each other. Science and technology can influence society with changes, and society also influences development by articulating their respective needs. The STM approach will help teachers to stay up-to-date with the latest developments in educational technology.

Technological developments must be appropriately utilized, especially in the field of education. Related to this is the development of gadgets and the internet, which makes everything easier. For the younger generation in Indonesia, technological developments increasingly dominate especially social media. Social media, including Facebook, Twitter, Instagram, WhatsApp, and YouTube, have become everyday tools. One example is the ease with which news can go viral via social media, whether from TikTok or Instagram. Today's young generation is rapidly searching for the latest information. Students can use social media as a source of information and education. So with this, social media can be applied as a medium in the Science, Technology, and Society learning model, which is related to the daily lives of today's young generation and connects with increasingly sophisticated technological developments.

The science, technology, and society approach to learning is a learning process that connects the concepts of science, technology, and society and focuses on identifying and solving problems related to these concepts. In planning learning, the aspect of material suitability is prioritized. Material that aligns with approaches to science, technology, and society, one of which is social studies sociology material for Class XI SMA. Sociology class XI SMA discusses problems and conflicts in the social realm related to social groups, as well as efforts to build harmonious relationships. The connection to objects that focus on problems can be linked back to the learning method of case study. A case study is a learning method that uses material from a case; then, the case is discussed to find a solution.(Anggraeni 2020) This makes it attractive for the author to study the effectiveness of the social media-based STM learning model using the

case study method applied to class XI high school sociology learning material.

## Materials and Methods

This research uses a literature study method with a content analysis approach and concludes descriptively. The library study method collects data from previous studies, including books, journals, news, or related literature. It is used to understand theories with the data obtained. Data collection techniques through observation and documentation through several references from journals, books, and news relevant to what is being studied..(Adlini et al. 2022) The data that has been collected is analyzed using content analysis techniques, which means providing in-depth meaning regarding the information that will be provided in the research.(Nugraha 2021) The data obtained is analyzed and interpreted into a statement.

## Results and Discussion

### Social Media Based STM Learning Model with Case Study Method as a Learning Approach in Class XI Sociology Material.

The science of Technology and Society (STS) approach is a practical examination of how science and technology shape social processes and how social situations influence scientific and technological progress. Our proposed learning model with the STS approach is a practical tool that connects science, technology, and society through real-world topics. This approach is characterized by a focus on problem identification and solving, engaging many students in the learning process. Sabar Nurohman, "Penerapan Pendekatan Sains-Teknologi-Masyarakat (Stm) Dalam Pembelajaran Ipa Sebagai Upaya Peningkatan Life Skills Peserta Didik" 2, no. 1 (2006): 59–71.

STM learning that is related to technology can use social media as a tool to support learning. Social media is a technology that people in Indonesia widely understand. Based on information from We Are Social, it is stated that in

2023, there will be 167 social media users in Indonesia. (Widi n.d.) Social media is a tool used to interact online with various individual interests and as a platform that provides all information.

Based on research by Gallant Karunia Asidik on the Use of Social Media as an Alternative Learning Media Based on Interactive and Contemporary Digital Literacy, it was revealed that social media as a learning media is a current solution innovation to deal with hoax information and is used as a means of digital literacy for students to reduce adverse effects, from the use of social media. Social media can help spread current knowledge about social issues and bring learning to life through local events. This makes students socially sensitive and able to think critically. However, in the classroom implementation process, teachers must receive supervision regarding the media and information used. **Gallant Karunia Assidik, "Pemanfaatan Media Sosial Sebagai Alternatif Media Pembelajaran Berbasis Literasi Digital Yang Interaktif Dan Kekinian," Bahastra Volume 1, (2018): 242–46.**

Social media is widely used and known by the general public. The suitability of social media as a form of technology can support learning in science, technology, and society. The learning process also requires methods as a door to implementing the learning process. The STM approach can use and combine the case study method with social media. The case study method in learning is an aspect that presents a case as material, then discusses it and looks for a solution point.

The Social Media-based STM Learning Model with the Case Study method was chosen as an innovation in learning that aligns with the increasingly sophisticated technological era 5.0 and is very suitable when applied to science, technology, and society learning models. Class XI sociology material is used as an object in the application of learning because it explains social and societal problems in the realm of groups and is designed to create harmonious relationships between groups. So, in the Social Media-based STM learning model with the Case Study Method in Class, The object of the problem to be studied is taken from class XI sociology material, which contains related societal problems.

### **Implementation of the Social Media-Based STM Learning Model Through the Case Study Method in Class XI High School Sociology Material**

Science, Technology, and Society is a learning approach designed to link social and technological issues with students' lives as a reference for learning concepts. The relationship between knowledge, technology, and society is suitable for students. The STM learning model focuses on students being active in class with the process of building their knowledge through interaction with the environment, developing attitudes, processes, creativity, and application of the relationship between the knowledge learned.

Several aspects of a learning model support the learning process that will be implemented, including the objectives, steps, and foundations of the expected teaching model. (Sofiah, Suhartono, and Hidayah 2020) The STM learning model aims to make students understand scientific and technological literacy and care about problems in the surrounding environment. Poedjiadi's opinion divides the learning stages using the STM model into five stages: the first, introduction or what is called initiation (starting), and invitation (invitation for students to focus). Appreciation can also be done at the beginning as a warm-up by connecting the previous material. Second, concept formation is done by inviting students to learn concepts about the material using various methods, either through discussion, observation, etc. Third, apply the concepts from before, relate them to students' daily lives, and convey the results of their opinions. Fourth, strengthening concepts through teachers who provide appropriate teaching information by correcting students' inaccurate opinions. Fifth, evaluation or assessment to see the extent of student success in the material studied.

In applying the STM learning method, use class To study this material, use social media-based media which provides information on problems related to this material. The latest information about social conflicts can be obtained easily from social media, such as TikTok, Instagram, Twitter, YouTube, and WhatsApp. For Generation Z, social media is a guide in daily life so that viral information is easy to find. One media that is a center of information for students is Instagram,

which is used to exchange information.(Laili and Adi 2020)

The social media system also provides booming information that is easy to share openly and immediately. Learning media can be linked to information about social conflicts, problems, and ways to overcome social media that students know. In the learning implementation stage, you can use the case study method as a driving force for problem analysis and how to solve it through information from social media. The correspondence between the concepts of each focus object in this research provides support that the innovation of the STM learning model through this version can be applied. The following is the STM syntax for sociology material with social problems material.

### (Syntax for Learning Science, Technology and Society)

Material: Social Problems and Efforts to overcome them with the Creative Economy  
Class: XI SMA

Phase	Indicator	Activity Description
1.	Introduction	<ul style="list-style-type: none"> <li>a. The teacher presents the problem of unemployment through news videos on YouTube (<a href="https://youtu.be/Evw1kqPzsg">https://youtu.be/Evw1kqPzsg</a>).</li> <li>b. Students observe and provide responses regarding the problems in the news video.</li> <li>c. The teacher links the results of students' thoughts with the next material, namely about (Efforts to improve the Creative Economy)</li> </ul>
2.	Concept Formation	<ul style="list-style-type: none"> <li>d. Students are divided into 5 groups by educators, each group consists of 6 people.</li> <li>e. The teacher gives LKPD assignments to each group in the form of:               <ul style="list-style-type: none"> <li>1. Analysis of unemployment that occurs in the surrounding area?</li> <li>2. Explain the causes of unemployment?</li> <li>3. How is it implemented in developing the creative economy in the area to overcome the unemployment that occurs?</li> <li>4. Why is the creative economy related to unemployment?</li> </ul> </li> <li>f. Through group discussions, each student seeks information through relevant sources such as books, news, etc.</li> </ul>
3.	Concept Application	<ul style="list-style-type: none"> <li>g. The teacher guides each group in analyzing the assignments on the LKPD from the information obtained.</li> <li>h. Each group celebrates the results of the LKPD</li> </ul>
4.	Concept Strengthening	<ul style="list-style-type: none"> <li>i. The teacher provides appreciation and feedback on the results of the presentation from each group.</li> <li>j. The teacher provides reinforcement of core material related to efforts to improve the creative economy to overcome unemployment.</li> </ul>

### Effectiveness in Applying the STM Model with the Case Study Method in Teaching Sociology Material for Class XI

Based on previous research by Nadia Fitri Insani et al. with the title "Implementation of the Community Science and Technology Learning Model to Increase Scientific Literacy in Physics Learning," produces information that the STM learning process in physics material is going well with the teacher's ability to support it. (Suarni, Rizka, and Zinnurain 2021) Based on research by Dyoty Aulya Vilda Gashya with the title 'The Urgency of Developing Social Science Learning Dimensions Through Science, Technology and Society Approaches in Facing the Challenges of the Era of Globalization' provides a statement of the suitability of STM when combined with social science whose output is related to social society and is used as a learning that looks at the development aspect of globalization.(Dyoty Auliya Vilda Ghasya 2015)

Judging from the application of the STM model in sociological material, which exemplifies the social problem of unemployment using YouTube media and using the case study method as an object for understanding the problem and efforts to solve it, it provides the view that there is a match when applied in the learning process. According to the author, STM has characteristics that prioritize students with problem objects that are analyzed and attempted to find solutions to problems, which also prioritizes the relationship between knowledge, technology, and society. Social media is a technological support that can provide information about a social problem. Case study methods also assist in analyzing these social problems using the characteristics of STM to find a solution point.

### Conclusions

The Social Media-based STM Learning Model with the Case Study method was chosen as an innovation in learning that aligns with the increasingly sophisticated technological era 5.0 and is very suitable when applied to science, technology, and society learning models. Class XI

sociology material is used as an object in the application of learning because it explains social problems and social conflict in groups and is designed to create harmonious relationships between groups.

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