

Learning Innovation Opportunities Using Interactive Multimedia to Facilitate Sociological Learning in Improving Collaboration Skills

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Abstract: The advancement of technology has revolutionized education, particularly through digital learning media, enabling students to engage with sophisticated technology actively. This study focuses on sociology education, emphasizing the importance of collaborative skills for students' social development. With its diverse interactive features, interactive multimedia holds promise for facilitating collaborative learning. However, many schools lack adequate facilities for technology-enabled collaborative learning. Conducted through a survey method, the study involves 202 tenth-grade students. Data collection methods include questionnaires and interviews, with analysis encompassing four stages: data collection, reduction, withdrawal, and presentation of results. Findings indicate the pressing need for integrating interactive multimedia into sociology education to enhance collaborative skills. Notably, a significant portion of students (50.2%) have not engaged in interactive multimedia collaborative activities, while 95.5% express the need for such tools to improve their understanding of sociological concepts. Additionally, 95.5% of students utilize technology for educational purposes. The study underscores the potential for optimizing technology utilization to foster collaborative learning and academic excellence in public schools. Interactive multimedia emerges as a pivotal tool for enhancing collaborative skills among students in sociology education.

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INTRODUCTION

Information and communication technology has made many contributions to broader society. The existence of technology, which is increasingly developing rapidly, means that humans are required to be able to master various types of skills. Skills development will continue to adapt to new things and align with technological and social changes (Dishon & Gilead, 2021). This is because technological developments have reached the digitalization stage. Digitalization can take the form of various digital media features optimized to support successful skill mastery. The following skills are currently being developed, one of which is in the field of education, namely 21st-century skills. In 21st-century learning, digital technology transforms traditional learning and mobilizes the skills needed in an emerging digital environment (van Laar et al., 2017). 21st-century learning combines knowledge dominated by creativity, communication, critical thinking, and group work tests to give students the means to complete assignments and live their lives successfully. In this regard, 21st-century learning can be encouraged using learning technology, assessment practices, and student-centered learning methods (Peña-Ayala, 2021).

21st-century skills are described in several sections, such as learning skills and innovation in education (the 4Cs, namely critical thinking, communication, collaboration, and creativity). In the 21st century, schools must provide opportunities for students to develop these skills to empower students to find solutions to unexpected and unresolved problems. Collaboration is an essential 21st-century skill that all students must possess and learn (Andersen & Rustad, 2022). Collaboration skills refer to working

interdependently and harmoniously as part of a work team (Varas et al., 2023). Collaboration in learning focuses on students working together in groups to improve their ability to collaborate with other people. The aspect of collaboration skills on the quality of student interaction must be the focus of learning activities. One of the products of learning activities is intellectual gain and increased academic knowledge. However, collaboration skills emphasize the nature and quality of collaborative activities and interactions between group members (Evans, 2020).

Sociology learning fosters an understanding of multiculturalism in students through social interactions such as collaboration and cooperation (Sujarwo & Rejekiningsih, 2023). Based on sociological learning, collaboration skills are essential in social life. Through collaboration skills, humans can differentiate between individual interests as individual creatures and collective interests as social creatures. A person will be able to control his ego, socialize, be sensitive to the surrounding environment, and hone to appreciate every potential other people have (Pujiati et al., 2022; Notari et al., 2014). Because of these things, it is necessary to develop personal and collaboration skills to support students in becoming part of a good society by applying rules and solving problems in their social environment.

The results of observations and interviews with Madrasah Aliyah students show that sociology learning carried out in class does not fully support students in developing themselves in the field of collaboration skills. Learning is carried out by providing material and then assigning assignments to students. Teachers are limited in using learning models because school media facilities do not fully support students' learning processes for developing collaboration skills. It is critical for educators to continue to innovate with digital curriculum delivery systems and the use of practical digital tools (Crittenden et al., 2019). Teachers are required to be more creative innovative, and not to be the only source of the learning process, and not to place students only as learning objects but also as learning subjects, which will eventually lead to a fun, joyful, and democratic learning process that can respect every opinion until finally the substance of the learning is genuinely internalized (Ujang et al., 2022). In addition, a responsive curriculum must adapt to local and global needs and developments so that students can develop a deep understanding of the skills needed to participate in society. (Rini et al., 2023).

Based on the problem of lack of school facilities and technological sophistication through the availability of today's technological needs, contemporary educators must be equipped to provide ICT-based learning direction to students. The learning activities must be designed using ICT and Global Technology so that students not only get the core lessons but also the basic and essential needs that must also be included (Nithyanantham et al., 2019; Joshi et al., 2013). Learning media can be an alternative to support sociology learning by developing students' collaboration skills. The following are some practical uses of media, including a) making unclear material clear; b) teachers can present rare content that students need to know; c) media can provide a more memorable learning experience and stimulate students to wake up to describe actual events in absolute terms; d) not constrained by space and time in implementing learning (Suminar, 2019). There are various types of learning media, including learning media that is integrated with mobile or is often called mobile learning. Mobile learning is a term that denotes learning that involves using mobile devices. This term is learning through social interaction and content using personal electronics (Crompton & Burke, 2018). Interactive multimedia is media that can be integrated with mobile learning. Interactive multimedia can support multiple representations of information from the same work in various formats. Using images, audiovisuals, animation, text, and video makes many of the senses more involved in the knowledge transfer process, making learning more effective. The key to effective learning is utilizing multimedia elements for real learning (Cairncross & Mannion, 2001). As learning about society, sociology will be studied more optimally with interactive multimedia to improve students' collaboration skills. Through interactive multimedia, students will be directly involved in learning related to collaboration. Active student involvement is necessary and essential to improve students' understanding of the material the teacher presents (Astuti et al., 2020).

There has been much previous research regarding interactive multimedia in learning. Dikshit et al. (2013), in their research, stated that interactive multimedia makes it easy for students to use it, and the multimedia display is interested in making this media superior. Apart from that, Hwang et al. (2012) also said that interactive multimedia functions can explain complex and dynamic concepts more clearly, make remembering content easier, improve topic content from a student's perspective, and make students more

interested in learning. Khan & Masood, Chachil et al. (2015) state that interactive multimedia is an appropriate alternative learning medium for classroom learning situations, with learning strategies designed and developed to facilitate and increase students' interest in learning.

METHOD

The method used in this research is the survey research method. This research will identify and describe the needs analysis of interactive multimedia to facilitate sociology learning in improving collaboration skills. Interactive multimedia is an alternative to practical learning solutions in the digital world, dominated by mobilization. Needs analysis is carried out by observation, interviews, and using questionnaires. The first stage, namely observation, is carried out by observing the implementation of sociology learning that has been taking place so far in class. Observation activities were conducted to determine the conditions at the research location, namely Madrasah Aliyah. The flow diagram research is presented in Figure 1.

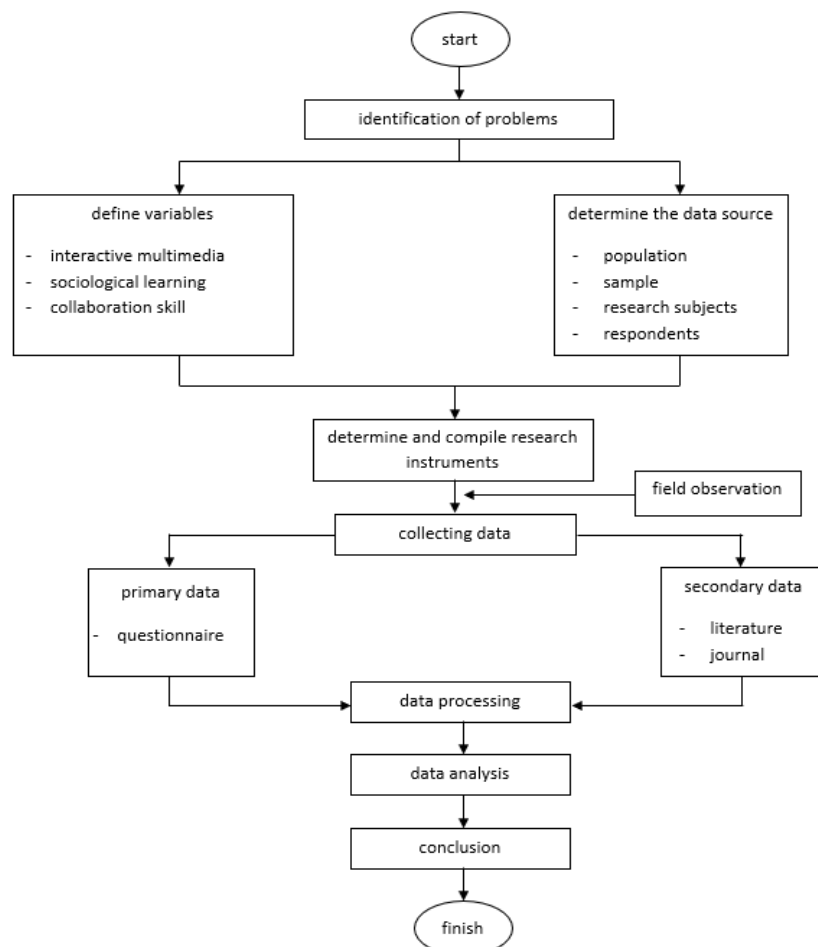


Figure 1. Research flow diagram

The grid of observation guidelines includes (1) Sociology learning activities, (2) Sociology teaching module, (3) Teachers, (4) Students, and (5) School facilities. Apart from that, there are also interviews with sociology teachers. Interviews were conducted by asking questions directly to the Sociology teacher at Madrasah Aliyah. The following is an interview guideline regarding (1) The teaching and Learning Module, (2) Sociology learning activities, (3) and School facilities used in learning. Then, the final stage is filling out the questionnaire. All Phase E students filled out the questionnaire via Google Form by asking eight questions related to the following: (1) learning methods applied by the teacher in the classroom; (2) Learning media used in the classroom; (3) Teaching materials used in learning; (4) Use of technology for learning; (5) Ownership of a smartphone to support learning; (6) Facilities owned by the school; (7)

Application of student collaboration activities in learning; (8) The need for interactive multimedia to improve collaboration skills in studying sociology material. The research subjects were class X Madrasah Aliyah students, totaling 202 students. This is due to the suitability of the research objectives regarding collaboration skills with teaching materials in Sociology learning, namely for Class X students. Data collection methods are through interviews and surveys. Data analysis used descriptive analysis to analyze the need for interactive multimedia to improve collaboration skills in sociology learning.

RESULT AND DISCUSSION

This study has been done with several students as Madrasah Aliyah respondents. Research results show that interactive multimedia is needed to enhance skills and collaboration in learning sociology in studies beginning analysis need. Interactive multimedia will help students support learning sociology and one of the facilities for effective learning for results that expect learning to be optimal. Students expect their skills and possible collaboration to be applied in life to solve the problems of social issues that exist in society. Research results show that students have an Android smartphone for activities related to learning sociology. Android smartphone ownership data is presented in Table 1, number 1.

Based on table 1, number 1 shows that 93.1% of students have an Android smartphone that can be used to support students in getting information, means communication, and well supports the learning process effectively. Next, most students utilize convenience technology to support activity learning, as presented in Table 1 number 2. Based on Table 1, number 2 shows that 95.5% of students utilize technology to support their studies. Schools allow students to use technological media such as laptops and smartphones for activities, study, and teaching in class. The result of an interview with one student explains that inside the class, there is a facility box the cell phone will be used if the cell phone is not utilized for learning. After the whole cell phone is finished and used for activity learning, the cell phone will be entered into a box and locked. The teacher who teaches in the class will bring the key, and the essential cell phone box will be returned to the students when they return home from school.

Questionnaire data results from answering students, and there are results of interviews with teachers who implement learning sociology. During the activity process of learning, teachers use smartphones to access students in view learning videos and image media. Teachers also use smartphones to utilize students to look for reference alternative answers as well as teaching materials at the moment there is an assignment from the teacher. However, smartphone use is not optimal because students only study independently without continuous collaboration and discussion to learn sociology optimally. In learning sociology, interaction and collaboration can give students an understanding of the material studied in an intact way. Sociology is material knowledge focused on a social object in public study. In life, there are various phenomena related to social problems social. Sociology is the knowledge that there are efforts and methods in solving societal problems with understanding mark and rule life socially. Table 1, number 3, shows data regarding once-done activity collaboration in learning sociology. As many as 50.2% of students answered that they had not done activity collaboration in learning sociology.

Implementation activity learning No will occur optimally if the facility school does not fully support students in the study. Based on data in Table 1, number 4 has served the completeness condition of the learning media-owned school. The data shows that 51.5% of students answer that learning media conditions at school are incomplete. Capable media must be optimized for enhancement skills collaboration to learn draft sociology. Finally, Table 1 number 5 presented data regarding the provision of interactive multimedia for learning sociology. As many as 95.5% of students answer that interactive multimedia is required to increase skills in collaboration. Students can build a draft studied sociology through activity collaboration, so material can, in a way, be applied in life students compared to only depending on book text print. Following the overall data presentation table served in Table 1 regarding identification analysis interactive multimedia needs for increased skills collaboration.

Table 2. Identification of Analysis Survey Results Interactive Multimedia Needs for Increase Skills Collaboration

No	Survey results
1.	93.1% of students have an Android smartphone
2.	95.55% of students use technology for learning
3.	50.2% of students No do activity collaboration in learning sociology
4.	51.5% of students state that the condition of the learning media-owned school is not complete
5.	95.5% of students need interactive multimedia to increase collaboration skills in learning material sociology

Related to learning, teachers use methods of learning in the classroom, such as method lectures, asking answers, discussions, experiments, and study tours. Figure 1 shows the method of learning used by teachers. As many as 76.7% of students use the method ask answer in learning sociology. 72.8% use method discussion, 56.4% of students use method lectures, 17.3% use method experiments, and finally, as many as 5.9% use the study tour method.

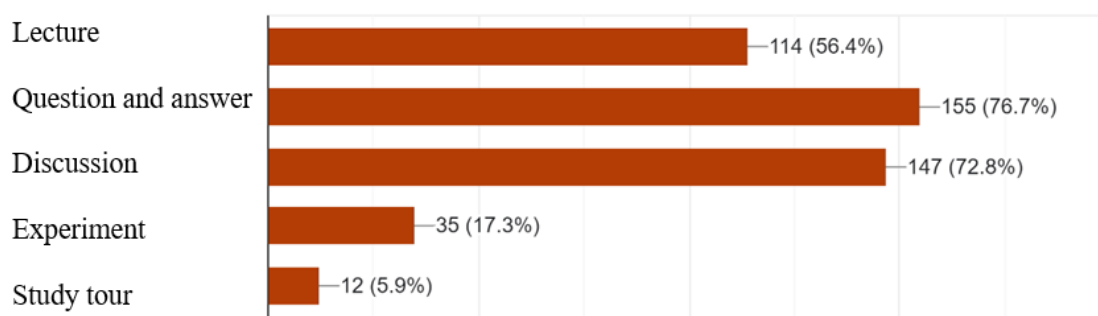


Figure 2. Learning Methods Used by Teachers

Of course, applying the learning methods above is balanced with using media in learning activities. Based on the data presented in Figure 2, the teacher uses learning media such as PowerPoint, image media, learning videos, and whiteboards. As many as 93.1% of students answered that teachers use whiteboard media, 61.9% use PowerPoint media, 26.7% use learning video media, and 21.3% use image media in sociology learning activities.

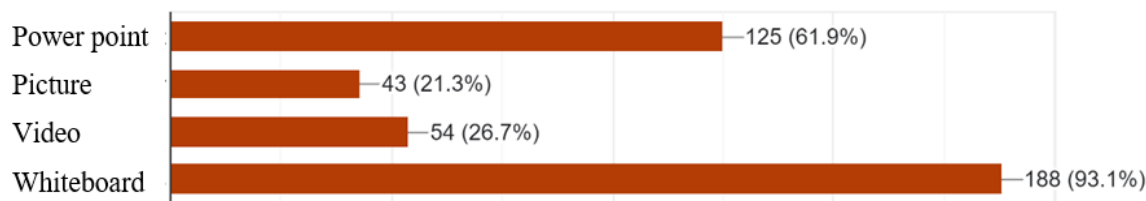


Figure 3. Learning Media Used by Teachers

The companion to learning media is the teaching materials used during the teaching and learning process. Teachers use textbooks, student worksheets, printed modules, infographics, and electronic teaching materials. Data regarding the use of teaching materials is presented in Figure 3. As many as 64.4% of students answered that teachers use printed module teaching materials, 39.6% use textbook teaching materials, 34.2% use electronic teaching materials, 32.2% use worksheets students, and finally 3.5% use infographics.



Figure 4. Teaching Materials Used by Teachers

Apart from questionnaire data resulting from student answers, there are results of interviews with teachers related to the implementation of sociology learning. During learning activities, teachers use smartphones to provide students access to learning videos and image media. Teachers also use smartphones so students can look for alternative references and teaching materials when there are assignments from the teacher. However, smartphone use is not optimal because students only study independently without continuous collaboration and discussion for optimal sociology learning activities. Some sociology lessons require interaction and collaboration to provide students with a complete understanding of the material being studied. Sociology is social science material whose focus is the object of study, namely society. In social life, there are various social phenomena related to social problems. Sociology is a science in which there are efforts and ways to solve societal problems by understanding the values and rules of social life.

The learning process can be used to realize skills in collaboration with students through content. Relevant learning is one of them, as in learning sociology (Nnebedum, 2019; Ratama et al., 2021). As Spencer (Andayani et al., 2020) explained, in sociology, there is a system of mutual social interaction and socialization to create social connections. Attention: Main sociology is concerned with responding to social phenomena and social issues and solving public problems. This matter makes necessary skills collaboration that will bring usefulness in deepening material sociology and later applied in life social. If skills collaboration is fulfilled with good in learning sociology, then learning sociology will be meaningful for life and the social public.

Support environment study will influence skills collaboration among students. One of the supports is the utilization of technology in learning. Media use is already broader not only in this world of work but also in the world of education. That matters because learning speeds up the development and utilization of information and communication media in education. Teachers are sued for increasing education quality and creating an atmosphere of effective and innovative learning (Rachmadtullah et al., 2018). Technology information and communication in learning are essential for expediting the delivery of material by the teacher to students, and its application can impact and potentially increase the quality of learning. One of the developments in technological information is the birth of the Android operating system, starting from gadgets, tablet PCs, smartphones, and applications with Android operating systems. Mobile devices, significantly Android, have changed function tool communication to become a tool for entertainment and learning (Amir et al., 2018). Facility schools are needed to enhance the quality of the learning process in schools, including in matter technology. Based on the data, 51.5% of facilities schools, such as learning media, are not yet complete. Circumstances will make smooth understanding and learning hampered. On the other hand, as many as 95.5% of students use technology for their studies. Barriers to the learning process other than the use method teacher dominated learning, asking answers as much as 76.7% and the use of learning media 93.1 % used board media.

Optimization technology can overcome obstacles to facilitate learning sociology and increase collaboration skills. The role of technology in field education There are four: (a) technology entered as part of curriculum; (b) as a system delivery instructional (c) as a means for help instructions; (d) as a tool for increasing the entire learning process. Blessing education technology has changed from passive and reactive to interactive and aggressive (Raja & Nagasubramani, 2018). The role of digital technology in influencing the involvement of students is a field to be paid attention to because technology has become a feature in experienced education students (Selwyn, 2016). Through facilitation involvement, students in technology can create community learning where students can interact in a way that collaborates with others to build connections with influential peers with or without technology, which is very valuable (Bond

& Bedenlier, 2019).

Optimization technology can utilize interactive multimedia in learning sociology to increase skills in collaboration. Collaboration skills are used in every involved activity group to build connection, mutual social profitability, respect, and work—the same in reaching objectives (Geisinger, 2016). Multimedia technology can help the student build solid thinking, combining various senses, so it can help the student to do and understand his knowledge. Through integration, various media sources (such as words, graphics, sounds, or visuals) can produce increased results and the ability to serve draft abstracts or complex in increasing students' understanding (Pang, 2015). According to the data on the needs presented, most students answered that interactive multimedia increases collaboration skills in learning material sociology by as much as 95.5%. So, by needs, there is an opportunity for innovation with interactive multimedia to facilitate students' learning of sociology and increase collaboration skills.

Research Limitations, Advantages, and Recommendations

Based on research that has been carried out, this limitation is that the scope ranges from little research because the study was only conducted at Madrasah Aliyah. Besides that, the study is only aimed at students in class X at Madrasah Aliyah and cannot applied throughout the high school level. Next, related to collecting research data, research uses survey techniques. The Google form provided researchers, so the researcher cannot get digital information from students involved in giving information analysis interactive multimedia needs.

On the other hand, research their superiority or excess among them, that is, study this focusing on analyzing future interactive multimedia needs. If followed up, study development with interactive multimedia products can be done. Product that can used to support means study students in learning sociology. Furthermore, it is hoped that research related to interactive multimedia development will take place in the next one so that it can be validated and tried out by students to fulfill students' media needs in learning. Teachers are expected to increase their abilities along with the development of technology from technical, theoretical, conceptual, or skills facets. Students are expected to increase their skills through collaboration, which can be beneficial when applied in the public environment. Finally, for the reader expected to study, this can describe the analysis of the beginning fulfillment needs of students in learning media.

CONCLUSION

Research results show a significant opportunity to utilize interactive multimedia in learning sociology. Interactive multimedia can solve the lack of learning media facilities for skills collaboration among students in school and improve their skills. Students naturally support That matter by utilizing sophisticated technology like Android smartphones to help them learn. As one of the related research with education, implications from the study show that students and teachers can optimize the utilization of technology with the development of interactive multimedia that can be used to reach objective expected learning that is increasing skills collaboration among students and become more students excel and do well in school nor the environment public.

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