

OPTIMIZING CRITICAL THINKING SKILLS BY UTILIZING SOCIAL SCIENCE LEARNING E-MODULES

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Abstract

Critical thinking skills are an important thing for students to have, considering that these skills are one way for students to better understand each material being studied. This research was conducted to examine the use of social studies learning e-modules in order to optimize critical thinking skills. The research implementation refers to a mixed research approach or mixed method, with observation sheets and tests as data collection techniques. The results achieved are that the learning activities of students become more optimal after utilizing the social studies learning e-module, seen from the increasing category of students' critical level. Likewise, from the results of the tests carried out, it was found that the average value increased after the learning was held by using e-modules. This is evidence that students' critical thinking skills can be optimized by utilizing e-modules in social studies learning.

Keywords: Critical Thinking, E-Module, Social Studies Learning.

INTRODUCTION

Critical thinking, a term that is echoed continuously to this day. Humans as social beings should be critical of the conditions around them, critical in the meaning of caring, not just giving meaningless comments. As stated, to know critical thinking skills is to pay attention to the things someone does when facing problems and how to solve the problem (Hidayat, Sapriya, Hasan, & Wiyanarti, 2022). Efforts to optimize critical thinking skills in the community can be done from an early age such as habituation from school. At school, students are the school community who mingle among various differences, such as ethnicity, religion, race, and culture and other things.

Assimilation in the school environment is an important part in building critical thinking processes, because each person has their own perspective. Therefore, every student is required to think critically in addressing problems while still promoting tolerance for differences. Through effective learning, it is believed that critical thinking processes can be embedded in students. To achieve effective learning, it can be done in various ways, such as utilizing technology which is currently being integrated into learning. One of the integrations of technology in learning is the use of e-modules, which means that teaching materials are structured contextually and can be used anywhere and anytime. E-modules have characteristics that can be used independently by students (Daryanto, 2013).

E-modules as teaching materials that are integrated in a digital basis are systematically arranged according to the curriculum and packaged in the form of practical learning units (Purwanto, Rahardi, & Lasmono, 2007). Therefore, of course, the learning materials contained in the e-

module are material extracted from various sources that allow the complexity of the material to be more meaningful. The complexity and comprehensive discussion of a material in the e-module is believed to be able to train students to be able to think critically, especially in expressing contextually relevant arguments. As e-modules have succeeded in improving critical thinking skills in several other lessons, such as physics learning (Fadieny & Fauzi, 2021). Of course, to train students to optimize critical thinking skills through e-modules, students must also believe in their ability to think critically and appreciate every process in critical thinking (Stupple, Maratos, Elander, Hunt, Cheung, & Aubeeluck, 2017).

So, critical thinking skills in general have been tested through the use of e-modules in exact learning but are still minimal in testing social science learning. Therefore, critical thinking skills must also be optimized in social learning through teaching materials that have been proven previously to be implemented, namely by using e-modules. The purpose of using e-modules in social studies learning is to optimize students' critical thinking skills. In accordance with the meaning of critical thinking skills as a metacognitive process which through reflective assessment aims to increase the possibility of producing logical conclusions with arguments or solutions to problems (Dwyer, Hogan, & Stewart, 2014).

METHOD

The implementation of this study refers to the implementation of research with a mixed method approach. Mixed methods are used because the research process involves both quantitative and qualitative processes. As it is understood that mixed methods involve philosophical assumptions that provide direction in the process of collecting and analyzing the research process that occurs because of the mixture of qualitative and quantitative approaches in each phase (Creswell & Clark, 2007). Phase or stages the intended phase is data collection and data analysis in one study or a series of studies using both research methods (quantitative-qualitative). Participants or respondents in this study were determined by purposive sampling technique, which is a technique in determining the sample not randomly but intentionally by the researcher according to the needs and certain characteristics or qualities according to the research objectives (Etikan, Musa, & Alkassim, 2016).

In this study, there were three schools that became the object of research with a total of 104 students in class VIII. To obtain accurate data related to the process of optimizing students' critical thinking skills, observations (observation sheets) and tests (questions) were carried out. The analysis of the data obtained from the two data sources was carried out quantitatively (comparison between the values before using the e-module and after using the e-module), and interpreted qualitatively in accordance with the criteria that had been prepared to be described so that the research findings could have meaning.

RESULT AND DISCUSSION

The research is carried out systematically, in accordance with the proper stages of research. As stated that the research data obtained through observation and tests. Observation which means observing the activities of students in accordance with the criteria or observation indicators

relevant to critical thinking skills. There are eight points that become the focus of observing critical thinking skills, namely focusing on statements, analyzing arguments, asking questions and clarifying, considering the credibility of a source, observing and considering results, making and considering decisions, identifying assumptions, and deciding on an action (Komalasari, 2017).

From the data obtained, then an analysis is carried out so that it is known the critical level of students from the observations made. Overall, the information obtained about students' critical thinking skills can be seen in the following table.

Table 1: Categories of Students' Critical Thinking Skills

Final Value Range	Frequency		Percentage		Category
	P.1	P.2	%	%	
> 81,9	-		-	-	Very Critical
69,83 < X ≤ 81,9	5	16	4,81	15,38	Critical
57,76 < X ≤ 69,83	77	82	74,04	78,85	Critical Enough
45,69 < X ≤ 57,76	21	5	20,19	4,81	Not Critical
X ≤ 45,69	1	1	0,96	0,96	Very Uncritical
Amount	104	104	100	100	

Source: processed data, 2022

Referring to table 1, it is clear that from the overall research respondents there were no students who were included in the very critical category, both from observation 1 (P.1) and observation 2 (P.2). In the critical category, there is an increase in the number of students after learning by utilizing e-modules. Initially there were only 5 (five) students who were critical in learning, then it increased by 11 (eleven) people so that in the second observation there were 16 (sixteen) students who were categorized as critical. This is an indication that the use of social studies learning e-modules can optimize students' critical thinking skills. In the fairly critical category, initially there were 77 (seventy-seven) students, which later on the second observation became 82 (eighty-two) students.

So, overall seen from the category of critical thinking skills in the total respondents, there was an increase in skills that were originally not critical to be quite critical, as well as those that were originally still quite critical to become more critical in learning. Of course, the intended critical is in accordance with the observation indicators, which have relevance to the material being studied. To emphasize the achievements of each group of respondents, a comparison table of critical thinking skills among students is also presented as shown below.

Table 2: Comparison of Critical Thinking Skills

Category	SMP N 1 KA		SMP N 3 KA		SMP N 6 KA	
	P.1	P.2	P.1	P.2	P.1	P.2
Very Critical	-	-	-	-	-	-
Critical	2	5	2	4	1	7
Critical Enough	30	31	21	28	26	23
Not Critical	7	3	10	1	4	1
Very Uncritical	-	-	-	-	1	1
Amount	39	39	33	33	32	32

Source: processed data, 2022

Based on table 2, it can be seen that students in each school have the same characteristic tendencies. This can be seen from the number of students who fall into certain categories, such as critical, which in each school the students are relatively the same. Likewise, the increase that occurs between skills from critical enough to critical, and from uncritical to moderately critical. However, in one group of respondents there was still 1 (one) person who was still categorized as very uncritical. This is certainly a note for researchers and teachers, to explore the reasons for these students to become individuals who are not very critical in participating in learning. Of course, this is believed to have a certain background, which in this study has not been explored.

Apart from observations or observations made to determine students' critical thinking skills from their learning activities, researchers also explore critical thinking skills through cognitive aspects, namely giving test questions. The intended test is a test that is in accordance with the material being studied, it's just that the process of preparing test questions and answers that are expected to have certain criteria in accordance with the critical thinking skills that should be possessed. The indicators used by researchers in providing test questions are the existence of simple explanations (elementary clarification), building basic skills (basic support), the ability to conclude (inference), compiling further explanations (advanced clarification), and the ability to set strategies or tactics (strategic and tactics) (Komalasari, 2017). For this reason, the test questions are composed of 5 (five) questions with 12 (twelve) sub-questions, which are arranged to describe the ability of each indicator and sub-indicator.

Overall, the results obtained by students in answering test questions before learning to use the e-module (pre-test) and after using the e-module (post-test) can be seen in the following table.

Table 3: Comparison of Critical Thinking Skills (Pre-Post Test)

Score	Frequency		Percentage		Category
	Pre-Test	Post-Test	%	%	
86 – 100	-	4	-	3,85	Very good
70 – 85	66	98	63,46	94,23	Good
56 – 69	36	2	34,62	1,92	Enough
40 – 55	2	-	1,92	-	Not enough
0 – 39	-	-	-	-	Very less
Amount	104	104	100	100	

Source: processed data, 2022

Based on the results of the analysis of the data obtained through the test, in table 3 above it can be seen that in the pre-test there has not been a single student who has achieved the very good criteria, but when the post-test is carried out there are 4 (four) students or 3,85% of the respondents have achieved very good criteria in answering critical thinking questions. In this criterion, it has been seen that the use of social studies learning e-modules can optimize students' critical thinking skills. It can also be seen in the lack of criteria, previously there were still 2 (two) people but in the post-test there were no more students who obtained these achievements. In fact, even in the sufficient category, which was originally 34.62% to 1.92% when the post-test was carried out. This has an impact on increasing the achievement of the good group which was originally only 63.46% to 94.23% of students who already have good critical thinking skills in answering test questions. To confirm the achievement of the average value obtained by students based on the sample group (schools), it is also arranged in the form of the following diagram.

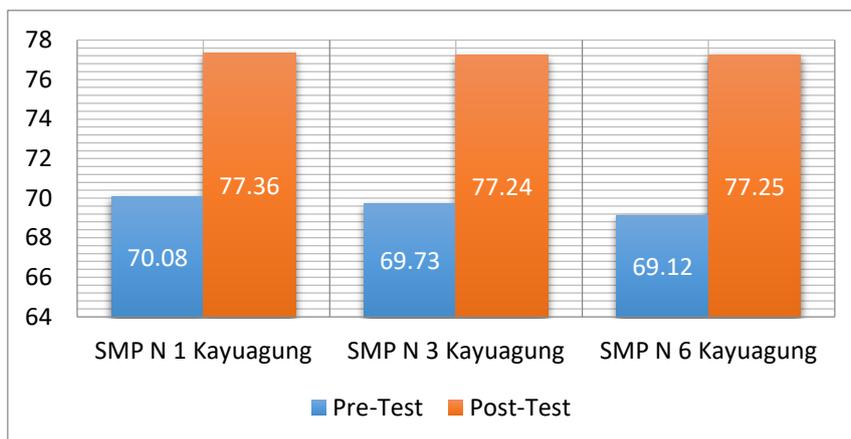


Figure 1: Comparison of the average values between sample groups

Based on Figure 1, it can be described that basically the critical thinking skills of students in SMP Negeri in Kayugung are relatively the same. This can be seen from the average value of critical thinking skills when the pre-test in each sample group is not significantly different, as seen the value is 70.08; 69.73 and 69.12. Even the difference between the highest and lowest

average values is only 0.96. This proves that the researcher has been right in determining the sample in the study, because the characteristics of the respondents are relatively homogeneous. Likewise for the post-test mean, the highest score was obtained by the sample group at SMP Negeri 1 Kayuagung, which was 70.08, while the lowest average score was achieved by the sample group at SMP Negeri 3 Kayuagung, which was 77.24. The difference in the average value of the two was only 0.12 points adrift. This means that students' critical thinking skills have been evenly distributed in every school. Another thing that can be revealed through these results is the increase in the average score from pre-test to post-test in each sample group is quite high. At SMP Negeri 1 Kayuagung, the increase occurred by 7.28 from only 70.08 (unfinished KKM) to 77.36 (completed KKM). Likewise with the sample group at SMP Negeri 3 Kayuagung, it increased by 7.51 and at SMP Negeri 6 Kayuagung it increased by 8.13. This means that the use of social studies learning e-modules is proven to be able to optimize students' critical thinking skills, especially at the State Junior High School in Kayuagung.

The results of the implementation of this study also support and confirm that e-modules can effectively optimize learning outcomes (Wijaya & Vidiанти, 2019). As in this study, the results showed that students' critical thinking skills can be optimized through the use of social studies learning e-modules, just as social studies learning is required as a comprehensive social learning, because in it there is a social life that should have attitudes and thinking skills. Critically, and even act critically when facing various forms of social problems (Tapung, Maryani, & Supriatna, 2018). As it is known that e-module is a hybrid or blended form of learning, because the implementation of learning can be done by students anywhere, of course when connected to the internet network. As part of blended learning in accordance with the characteristics of the e-module, namely learning independence, the achievement of increased learning outcomes is also one of the goals of the learning process that has proven results (Amalia & Sapriya, 2020).

This study also supports previous findings which state that critical thinking skills can be well developed through learning that utilizes e-modules (Rahmat, Arip, & Nur, 2020). It is also proven that e-modules with a problem learning base can improve students' critical thinking skills and have been proven significantly in hypothesis testing (Seruni, Munawaroh, Kurniadewi, & Nurjayadi, 2019). Therefore, e-modules should be used properly by every educator. Not only in social studies learning, e-modules should also be developed in other learning so that the quality of learning becomes better and the implications for the quality of education become more optimal in the future.

CONCLUSION

Based on the results of data analysis and discussion of each research finding, it is concluded that the social studies learning e-module can be utilized in order to optimize critical thinking skills. Judging from the activities of students participating in learning there was an increase and seen also from the test scores of critical thinking skills that students' achievements increased.

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REFERENCES

- Amalia, M., & Sapriya. (2020). The Effect of Applying Blended Learning using WhatsApp Group on Students Critical Thinking Skills in Online Learning in Elementary Schools (Pre- Experimental Study of Social Sciences in The Fourth Grade of SDN Cibabat 5). *International Conference on Elementary Education* (hal. 398-404). Bandung: Universitas Pendidikan Indonesia.
- Creswell, J. W., & Clark, V. (2007). *Designing and Conducting Mixed Methods Research*. Thousand Oaks: SAGE Publications.
- Daryanto. (2013). *Menyusun Modul Bahan Ajar untuk Persiapan Guru dalam Mengajar*. Yogyakarta: Gava Media.
- Dwyer, C. P., Hogan, M., & Stewart, I. (2014). An Integrated Critical Thinking Framework for The 21st Century. *Thinking Skills and Creativity*, Volume 12. 43-52.
- Etikan, I., Musa, S., & Alkassim, R. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, Volume 5 Nomor 1. 1-4.
- Fadieny, N., & Fauzi, A. (2021). Usefulness of E-module Based on Experiential Learning in Physics Learning. *International Journal of Progressive Sciences and Technologies (IJPSAT)*, Volume 25 Nomor 1. 410-414.
- Hidayat, K., Sapriya, Hasan, S., & Wiyanarti, E. (2022). Keterampilan Berpikir Kritis Peserta Didik dalam Pembelajaran Hybrid. *BASICEDU: Research & Learning in Elementary Education*, Volume 6 Nomor 2. 1517-1528.
- Komalasari, K. (2017). *Pembelajaran Kontekstual: Konsep dan Aplikasi*. Bandung: Refika Aditama.
- Purwanto, Rahardi, & Lasmono. (2007). *Pengembangan Modul*. Jakarta: Pustak Teknologi Informasi dan Komunikasi Pendidikan.
- Rahmat, M. R., Arip, A., & Nur, S. (2020). Implementation of Problem- Based Learning Model Assisted by E-Modules on Students' Critical Thinking Ability. *Indonesian of Educational Journal*, Volume 9 Nomor 3. <https://doi.org/10.23887/jpi-undiksha.v9i3.22410>.
- Seruni, R., Munawaroh, S., Kurniadewi, F., & Nurjayadi, M. (2019). Implementation of e-module flip PDF professional to improve students' critical thinking skills through problem based learning. *International Conference on Mathematics and Science Education 2019 (ICMScE 2019)*. IOP Publishing.
- Stuppel, E. J., Maratos, F., Elander, J., Hunt, T., Cheung, K., & Aubeeluck, A. (2017). Development of The Critical Thinking Toolkit (Critt): a Measure of Student Attitudes and Beliefs About Critical Thinking. *Thinking Skills and Creativity*, Volume 23. 91-100.
- Tapung, M. M., Maryani, E., & Supriatna, N. (2018). Improving Students' Critical Thinking Skills in Controlling Social Problems through the Development of Emancipatory Learning Model for Junior High School Social Studies in Ruteng City. *Journal of Social Studies Education Research*, Volume 9 Issues 3. 162-176.
- Wijaya, J. E., & Vidiyanti, A. (2019). The Effectiveness of Using Interactive Electronic Modules on Student Learning Outcomes in Education Innovation Course. *International Conference on Progressive Education (ICOPE 2019)* (hal. 86-89). Netherland: Atlantis Press.