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Improving Critical Thinking Skills Through Problem-Based Learning Assisted By youtube For Class XI IPS Students Of SMAN 1 West Sumatera

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Abstract. *This research is motivated by the low critical thinking skills of students in sociology learning. Sociology learning does not only emphasize material understanding but forms students' critical thinking skills. This study aims to determine the increase in critical thinking skills of class XI IPS students at SMAN 1 West Sumatra through problem-based learning assisted by YouTube. This type of research is Classroom Action Research (CAR), which consists of two cycles. Each cycle consists of four stages, namely planning, implementing, observing, and reflecting. The research subjects were students of class XI IPS at SMAN 1 West Sumatra for the 2022/2023 academic year, with a total of 25 students. Data collection techniques used are observation, interviews, and tests. Data were analyzed using qualitative analysis techniques. The results of the study reveal that problem-based learning assisted by YouTube can improve students' critical thinking skills. In the first cycle, all students' critical thinking skills (100%) were in the uncritical criteria and in the second cycle, there was an increase, namely all students (100%) were in the minimum critical criteria. The six indicators of students' critical thinking have increased. The action in cycle I is to give problems to students in the form of orders to analyze YouTube videos about social problems with the YouTube link that has been provided in the LKPD. The actions in cycle II were slightly different from cycle I, namely students were instructed to look for videos of social problems on their own to analyze. The next action is to give rewards to students who experience increased critical thinking skills.*

Keywords: *Problem Based Learning, Critical Thinking, YouTube*

INTRODUCTION

Critical thinking or critical thinking is one of the 21st century skills that students must have to face the challenges of the nation's future. Robert Ennis, who is one of the contributors to the development of the critical thinking tradition, defines critical thinking as reasonable and reflective thinking that focuses on deciding what to believe or do (Fisher, 2009: 4). Critical thinking in the opinion of Johnson (2014: 183) 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. Critical thinking allows students to find the truth among the many events and information contained in society. Emily R. Lai in Restu Fristadi (2015) also states that critical thinking is a component consisting of skills in analyzing arguments, skilled in making conclusions using logical thinking, able to carry out an assessment or evaluation, and able to make

decisions or in solving problems. The development of critical thinking skills is related to the skills to identify, analyze, and solve problems logically so that decisions can be made that can be trusted.

Critical thinking skills are very important in the era of modern education. Learning to think critically is useful for improving students' skills and at the same time preparing them for success in living their lives. In line with the objectives of the 2013 curriculum, namely to prepare Indonesian people to have the ability to live as individuals and citizens who are faithful, productive, creative, innovative and affective and able to contribute to the life of society, nation, state and world civilization.

Arikunto (2010: 138) identifies five systematic indicators in critical thinking, namely: Analyzing Skills, Synthesizing Skills, Recognizing and Solving Problems, Concluding Skills, and Evaluating or Judging Skills. Another opinion regarding critical thinking indicators conveyed by Wowo (2012: 198) is as follows: Identifying the focus of problems, questions, and conclusions, Analyzing arguments, Asking and answering, Observing and assessing observation reports, Concluding and assessing decisions, and Considering reasons without allowing disagreement or doubts that interfere with thinking (thinking that is supposed to be right). According to Ennis in Hendra (2021) there are 12 indicators of critical thinking which are summarized in 5 groups of thinking skills, namely giving simple explanations, building basic skills, concluding, making further explanations, as well as strategies and tactics.

So vital is the ability to think critically that's why the government emphasized in Permendikbud Number 36 of 2018 concerning Development of the 2013 Curriculum by perfecting mindsets including strengthening critical learning patterns that are integrated into learning in schools, including Sociology.

Sociology is the study of society and emphasizes its interactions. Critical thinking skills are needed in learning Sociology, because learning Sociology in high school does not only aim to increase students' knowledge, but also aims to increase curiosity, sharpen social analysis, and broaden students' views of life in society (Nasution, 2010: 24)

Based on the results of the author's observations on Sociology learning class X IPS SMAN 1 West Sumatra for the 2021/2022 academic year, the students' critical thinking skills are still relatively low. Observations were made using observation guidelines for critical thinking skills. The observation results show that out of 25 students, the number of students whose critical thinking skills are in the minimum critical category is 5 people or 20%. The average class X IPS students at SMAN 1 West Sumatra for the 2021/2022 academic year are not critical in learning Sociology.

At the time of observation made, learning is more centered on the teacher. The teacher explains the material conventionally and students only passively listen and take notes on the material. The teacher tries to attract the attention and thoughts of students, but only a few people respond. Students look shy and not confident to express opinions. Students do not try to connect material with reality in society and are fixated on the material in the book, so that no questions arise from students. When the teacher asked students back about the material by asking real examples in people's lives and explanations, none of the students answered correctly.

The low critical thinking skills of students in the learning process can also be seen in the learning outcomes obtained by students. Data on the Sociology evaluation scores of students in class X IPS at SMAN 1 West Sumatra were taken from the last daily assessment in class X in the even semester of the 2021/2022 academic year. As many as 17 students did not complete and only 8 students who completed with a KKM score of 80. The low condition of students' critical thinking skills in Sociology learning was reinforced by the results of interviews with the Sociology teacher who taught in the class who stated that in the learning process students tend to passively receive information from the teacher and are more textbook in nature. Students are only able to read what they get from the book without being able to explain further. So that at the time of the test, students were only able to answer rote questions and were unable to answer questions that required higher order thinking skills or HOTS (High Order Thinking Skills).

The object of study of Sociology as its position as a social science is society seen from the point of view of human relations and the processes that arise from these human relations in society (Soekanto, 2014: 21) Sociology learning will not achieve its goals if the teacher is unable to present the object of study, namely society with its social reality into class. Therefore problem-based learning by presenting real problems in society is very appropriate to be used in Sociology learning.

The low ability of students' critical thinking in learning Sociology hinders the achievement of learning objectives. Where Sociology learning which examines society and the phenomena that occur in it is not mere memorization, but rather on understanding and analyzing social reality so that students must be more involved in discovering the realities that are actually happening in society to be connected with learning materials that require critical thinking skills. Problem-Based Learning or problem-based is a form of contextual approach that uses real-world problems as a context for students to learn through critical thinking and problem-solving skills in order to gain knowledge and concepts that are the essence of subject matter (Karim, 2015)

Problem-based learning is believed to be able to improve students' critical thinking skills. Evidenced by the many studies that examine the improvement of critical thinking skills using problem-based learning from various branches of knowledge and levels of education. Problem-based learning according to Barrow in Huda (2017: 271) is learning that is obtained through a process towards understanding the resolution of a problem.

Kristanto Yosua Moubata's research (2020) with the title "Implementation of Problem-Based Learning to Build Critical Thinking Skills of Class XI Students in Sociology Learning". The results of his research show that there is a positive impact in building students' critical thinking skills which can be seen from critical questions and submission of concrete ideas. Deri Indra Hadi and Junaidi (2018) entitled "Efforts to Improve Students' Critical Thinking Skills Through the Application of Problem-Based Learning Strategies in Sociology Learning Class XI IPS2 SMA Negeri 1 Pariaman. The results of his research show that the implementation of problem-based Sociology learning can improve students' critical thinking skills.

There are many similar studies at the levels of primary education, secondary education, and higher education. The results of previous research can be concluded that problem-based learning can improve

students' critical thinking skills. Based on previous studies, the authors are interested in conducting similar research on Sociology learning for class XI SMA Negeri 1 West Sumatra in the 2022/2023 academic year by further developing strategies in the learning process. The strategy that will be developed in this research is to add YouTube as a learning medium. Where in previous research, researchers have not found YouTube media in problem-based learning to improve students' critical thinking skills in Sociology learning. Through this YouTube platform, real world problems can be presented in the learning process as learning media.

According to Snelson in 2011 in Pratiwi, & Hapsari (2020). YouTube is one of the most popular video sharing services on the internet today. YouTube as a video sharing website (video sharing) that allows users to upload, search for videos, watch, discuss/question and answer and share video clips for free. YouTube as an optimal learning resource according to Burke and Snyder (2008) in Suwarno (2017) can be operated by students with easy steps.

Based on this background, researchers need to conduct a study that aims to improve students' critical thinking skills with the title "Improving Critical Thinking Skills Through Problem-Based Learning Assisted By Youtube For Class XI IPS Students of SMAN 1 West Sumatra".

METHOD

The research entitled "Improving Sociological Critical Thinking Skills Through YouTube-Assisted Problem Based Learning of Class XI IPS Students of SMAN 1 West Sumatra" is a Classroom Action Research (CAR). Classroom Action Research is able to offer new ways and procedures to improve and increase educational professionalism in the teaching and learning process in the classroom by looking at the real conditions of students (Arikunto, 2017: 191). The research model used in this study is to adapt the PTK Kemmis and Mc. Taggart. The Kemmis and Taggart models consist of four components, namely planning, action, observation, and reflection (Arikunto, 2017: 195).

The data collection technique used is the test and nontes technique. The test technique is used at the end of each cycle to measure students' critical thinking skills, while the non-test technique is carried out by observing each learning meeting and interview. The data analysis technique used is qualitative data analysis. This analysis starts from the beginning to the end of data collection. Data formed by words or sentences from observations and interviews were processed into meaningful sentences and analyzed qualitatively. The data analysis techniques performed are data reduction, data presentation, and drawing conclusions

RESULTS AND DISCUSSION

Results

A. Cycle I Research Results

1. Planning

The planning phase carried out by the researcher included a request for permission from the Principal of SMAN 1 West Sumatra to conduct research in class XI Social Sciences, which was the only Social

Sciences class XI in the school. The next step taken by the researcher was to observe and interview sociology teachers to obtain preliminary data regarding the problems that occur in sociology learning in that class.

The next stage after knowing the problems that occur in sociology learning in class XI IPS SMAN 1 West Sumatra is the researcher examines the basic competencies, indicators, and research subject matter. Researchers compiled syllabus, Research Implementation Plan (RPP), Student Worksheets (LKPD), evaluation questions, assessment rubrics, learning media that support the learning process of students. The researcher also compiled a rubric for observing students' critical thinking skills during the learning process.

2. Acting

At the acting stage, learning activities are carried out in three meetings with the time allocation for each meeting is 4 x 45 minutes (4 hours of lessons). The implementation of the action is carried out on the material of social problems with the basic competency being to analyze social problems in relation to social grouping and the tendency of social exclusion in society from a sociological point of view and approach.

Meeting I in the first cycle was held on Friday, 15 July 2022 with a time allocation of 4 x 45 minutes (4 JP). Learning indicators learned in the first meeting are explaining the meaning of social problems and classifying the types of social problems.

The second meeting in cycle I was held on Friday, 22 July 2022 with a time allocation of 4 x 45 minutes (4 JP). The learning indicators studied in the second meeting were explaining the causes of social problems and explaining sociological theories about social problems. The third meeting in cycle I was held on Friday, 29 July 2022 with a time allocation of 4 x 45 minutes (4 JP). The learning indicators studied in the second meeting were explaining the impact of social problems and analyzing social problem solving using YouTube-assisted problem-based learning.

The learning steps were carried out by the researcher according to the problem-based learning syntax assisted by YouTube. The teacher orients students to problems and motivates students to engage in problem solving activities. The teacher distributes worksheets containing video links about social issues on the YouTube platform. Students are organized to learn by grouping students into heterogeneous groups. The teacher guides students in carrying out investigations in groups to get problem solving. Students analyze the videos that have been provided and answer the questions given in the Student Worksheet. Furthermore, students develop and present their findings in group presentations. The teacher helps students evaluate the results of discussions in groups. The teacher and students conclude the learning material.

3. Observing

Observations were made to see students' critical thinking skills obtained from data on the results of observation sheets for critical thinking skills. Researchers are assisted by observers who are colleagues. Table 1 is the result of calculating the average critical thinking ability of students after being given action in cycle I.

Table 1: Observation Data of Cycle I Critical Thinking Ability

Indicator	Cycle I Meeting						Average	Criteria
	1		2		3			
	Score	Criteria	Score	Criteria	Score	Criteria		
Analyze arguments	1,76	Not Critical	2,0	Quite Critical	2,4	Quite Critical	2,1	Not Critical
Able to ask	1,0	Very Uncritical	1,9	Not Critical	2,2	Quite Critical	1,7	Not Critical
Able to answer questions	1,0	Very Uncritical	1,8	Not Critical	2,2	Quite Critical	1,7	Not Critical
Solve the problem	1,0	Very Uncritical	1,8	Not Critical	1,7	Not Critical	1,5	Very Uncritical
Make a conclusion	1,0	Very Uncritical	2,0	Quite Critical	1,9	Not Critical	1,6	Very Uncritical
Skills to evaluate and assess the results of observations	1,8	Not Critical	2,1	Quite Critical	2,3	Quite Critical	2,1	Not Critical

Based on the information in table 1, it can be seen that on average each indicator experienced an increase at each meeting in cycle I. It can be concluded that of the six indicators, two of them are in the criteria of sufficiently critical and the other four are in the criteria of not critical and very uncritical.

4. Reflecting

Based on observations from the learning process in cycle I, there are several deficiencies that need to be corrected in cycle II. At the first meeting, the majority of students were still embarrassed to ask questions and express opinions. Students are still not confident, so that during the presentation they only read reports on the results of group work and no question and answer activities. When the teacher threw a question, only one student dared to answer, even without a valid reason. Furthermore, at the second and third meetings, the problem of time allocation was encountered. Some students were more active in providing arguments and the question and answer went quite long, so that the implementation of the cycle I evaluation test had to be postponed to the next meeting.

B. Cycle II Research Results

1. Planning

Planning in cycle II is the researcher preparing everything that is used in research. Researchers examine basic competencies, indicators, and subject matter. Researchers compiled a syllabus, Learning Implementation Plan (RPP), evaluation questions, assessment rubrics, and learning media. Researchers also prepared Student Worksheets (LKPD). The difference between the actions of this second cycle and the previous first cycle is in the Student Worksheet instructions. In cycle I students were asked to analyze and answer the questions provided based on the YouTube video link that had been provided and divided into groups, while in cycle II students were asked to search in groups for videos on YouTube related to determined social issues to then analyze and answer, given question. In addition to fostering enthusiasm and motivation of students, researchers promise rewards for students who are actively involved in learning.

2. Acting

At the implementation stage, learning activities are carried out in three meetings with the time allocation for each meeting is 4 x 45 minutes (4 hours of lessons). The first meeting in cycle II was held on Saturday, August 13 2022 with a time allocation of 4 x 45 minutes (4 hours of lessons). Learning indicators learned in the first meeting are explaining social injustice and social inequality. The second meeting in cycle I was held on Saturday, August 20 2022 with a time allocation of 4 x 45 minutes (4 JP). The learning indicator learned in the second meeting is explaining crime. The third meeting in cycle I was held on Saturday, 3 September 2022 with a time allocation of 4 x 45 minutes (4 JP). The learning indicator learned in the third meeting is explaining poverty.

The learning steps were carried out by the researcher according to the problem-based learning syntax assisted by YouTube. The teacher orients students to problems and motivates students to engage in problem solving activities. The teacher distributes Student Worksheets which instruct students to look for social problem videos on the YouTube platform. Students search, compare, analyze videos of social problems that they find on the YouTube platform. The teacher guides students in carrying out investigations in groups to find solutions to problems. Students analyze the videos that have been provided and answer the questions given in the Student Worksheets. Furthermore, students develop and present their findings in group presentations. The teacher helps students evaluate the results of discussions in groups. The teacher and students conclude the learning material.

3. Observing

Observation of students' critical thinking skills when participating in the learning process is carried out using observation sheets. Table 2 is the result of calculating students' critical thinking skills during the learning process.

Table 2: Observation Data of Cycle II Critical Thinking Ability

Indicator	Cycle II Meeting						Average	Criteria
	1		2		3			
	Score	Criteria	Score	Criteria	Score	Criteria		
Analyze arguments	2,77	Very Critical	3,0	Very Critical	2,88	Very Critical	2,87	Very Critical
Able to ask	2,20	Quite Critical	2,30	Quite Critical	2,25	Critical	2,26	Quite Critical
Able to answer questions	2,50	Critical	2,90	Very Critical	2,88	Very Critical	2,76	Very Critical
Solve the problem	2,10	Quite Critical	2,50	Critical	2,75	Very Critical	2,45	Critical
Make a conclusion	2,40	Critical	2,80	Very Critical	2,75	Critical	2,64	Critical
Skills to evaluate and assess the results of observations	2,50	Critical	2,80	Very Critical	2,83	Very Critical	2,70	Very Critical

The data in table 2 shows that based on the categories of the average score, it can be concluded that of the six indicators of critical thinking ability, all are in the criteria of being quite critical and above.

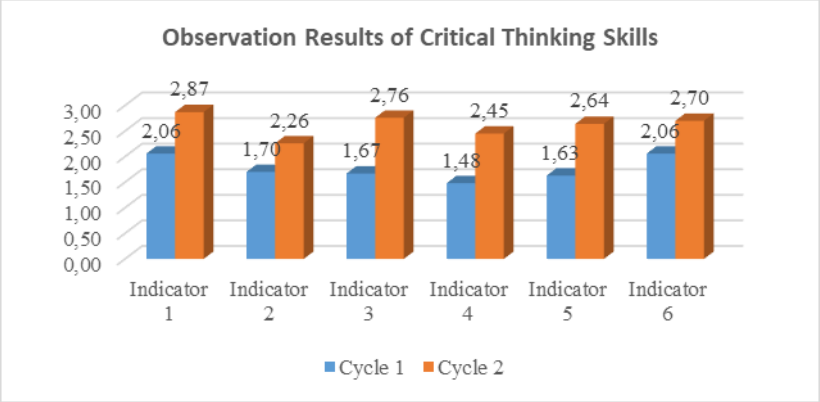
4. Reflecting

Overall, the learning activities are in accordance with those listed in the lesson plan. Students' critical thinking skills have increased at each meeting on each indicator. Based on the analysis of learning outcomes and the six indicators of students' critical thinking skills above, it can be concluded that cycle II was stopped at the third meeting because the increase in students' critical thinking skills had reached the minimum target set, namely 85% of students were in a minimally critical position. The data in Figure 4.18 shows that all students or 100% of students are in a minimally critical position.

Discussion

Graph1 is illustrating the results of observation research on critical thinking skills from cycle I to cycle II. The results of this study were obtained from the results of observations as outlined in the observation sheet checklist filled in by the observer

Figure 1: Results of Observation of Critical Thinking Ability Cycle I and Cycle II



The data in figure 1 shows that each indicator of critical thinking has increased from cycle I to cycle II. This improvement in students' critical thinking skills is inseparable from the application of YouTube-assisted problem-based learning. Thus, this problem-based learning provides opportunities for students to explore, collect, and analyze data in full to solve the problems they face. The goal to be achieved in this lesson is to improve students' critical thinking skills. (Sanjaya, 2016: 216). YouTube-assisted problem-based learning helps students to think more openly. Learning according to the theory of cognitivism involves a very complex thought process (Nugroho, 2015: 290).

The action taken in cycle I was to utilize YouTube media in problem-based learning. Students are instructed to analyze videos of social problems that have provided links to the LKPD. Piaget (Rahyubi, 2012: 126) developed cognitive theory by observing children's development and concluded that learning would be successful if it was adjusted to the stage of cognitive development. Based on the theory presented by Piaget, students in class XI IPS are in the formal operational stage which occurs at the age of 11/12 years and over. The main characteristic of its development is that children begin to think hypothetically, abstractly and logically. Therefore, YouTube is the right media to use in teaching sociology in class XI. In line with the theory of cognitivism which encourages learning to use concrete media because children cannot think abstractly (Nurhadi, 2018: 9).

YouTube media provides various forms of social problem videos that students can analyze by thinking critically. YouTube is a social media that is very close to today's youth, including class XI IPS students at SMAN 1 West Sumatra, so YouTube media can help improve student learning outcomes.

Actions in cycle II are still assisted by YouTube by adding new policies. Students are instructed to present the results of group work with different indicators for each student. So that students must be prepared with whatever indicators they get. In addition, the researchers also promised rewards for students whose critical thinking ability scores increased at each meeting. The success of this action research is in line with the theory of behaviorism. Thorndike stated that learning is defined as a change in behavior as a result of the interaction between simulation and response, namely the human process to give a certain response based on a stimulus that comes from outside (Asfar et al, 2019). Based on the theory of behaviorism, students in class XI IPS SMAN 1 West Sumatra have experienced changes in behavior, namely students' critical thinking skills from very uncritical to very critical. The stimulus given by the researcher was YouTube-assisted problem-based learning which elicited student responses which at the beginning of the meeting were still very uncritical and then continued to increase at each meeting, until in the end the students reached the very critical criteria. Thorndike's theory is also called connectionism theory (Slavin, 2000). According to

Thorndike, learning is an event where associations are formed between events called stimulus (S) and response (R).

CONCLUSIONS AND SUGGESTIONS

Based on the results of the research that has been carried out in each cycle, it can be concluded that the application of problem-based learning assisted by YouTube can improve the critical thinking skills of students in class XI IPS SMAN 1 West Sumatra in the 2022/2023 school year on social issues. In the first cycle, all students (100%) were in the criteria of not critical and in the second cycle, there was an increase, namely all students (100%) were in the minimum criteria, quite critical.

Empowered critical thinking skills in sociology learning are expected to be able to produce students who not only understand cognitive aspects but also have good analytical and problem-solving skills. The results of this study can be used as a source or reference for other researchers who will conduct further classroom action research in order to improve students' critical thinking skills in sociology subjects.

For sociology teachers, especially those who will implement YouTube-assisted problem-based learning, it is recommended that they first provide understanding to students to use the internet wisely in a healthy way, to minimize the possibility of internet abuse during the learning process.

REFERENCES

Arikunto, Suharsimi, Suhardjono, Supardi. 2017. Penelitian Tindakan Kelas. Jakarta: Bumi Aksara.

Arikunto, Suharsimi. 2010. Prosedur Penelitian Suatu Pendekatan Praktek. Jakarta: Rineka Cipta.

Asfar, A. M. I. T., Asfar, A. M. I. A., & Halamury, M. F. (2019). Teori Behaviorisme. Makasar: Program Doktoral Ilmu Pendidikan. Universitas Negeri Makassar.

Ennis, R. H. 1996. Critical Thinking. New Jersey: Prentice-Hall, Inc.

Ennis, R. (2011). Critical thinking: Reflection and perspective Part II. Inquiry: Critical thinking across the Disciplines, 26(2), 5-19.

Fisher, Alex. 2009. Berpikir Kritis Sebuah Pengantar. Jakarta: Penerbit Erlangga.

Hadi, D.I. and Junaidi, J., 2018. Upaya Meningkatkan Kemampuan Berpikir Kritis Melalui Penerapan Model Pembelajaran Berbasis Masalah Pada Pembelajaran Sosiologi Kelas Xi IPS 2 SMA Negeri 1 Pariaman. Jurnal Socius: Journal of Sociology Research and Education, 4(1), pp.22-30.

Hendra, H. (2021). Pembelajaran Kontekstual (CTL) terhadap Kemampuan Berpikir Kritis Peserta didik dalam Pembelajaran IPA pada Kelas IX di Sekolah Menengah Pertama. Prosiding Magister Pendidikan Ilmu Pengetahuan Alam, 1(1).

Huda, Miftahul. 2017. Model-Model Pengajaran dan pembelajaran. Yogyakarta: Pustaka Pelajar.

Johnson, Elaine B. 2014. CTL Contextual Teaching & Learning. Bandung: Penerbit Kaifa.

Karim, Abdul. 2015. Pembelajaran IPS. Pati

Moubata, K.Y., 2020. Penerapan pembelajaran berbasis masalah untuk membangun keterampilan berpikir kritis peserta didik kelas XI pada pembelajaran Sosiologi (Doctoral dissertation, Universitas Pelita Harapan).

Nasution. 2010. Sosiologi Pendidikan. Jakarta: Bumi Aksara

Nugroho, P., 2015. Pandangan Kognitifisme dan Aplikasinya dalam Pembelajaran Pendidikan Agama Islam Anak Usia Dini. ThufuLA: Jurnal Inovasi Pendidikan Guru Raudhatul Athfal, 3(2), pp.281-304.

Nurhadi, N., 2020. Teori Kognitivisme serta Aplikasinya dalam Pembelajaran. EDISI, 2(1), pp.77-95.

Pratiwi, B. and Hapsari, K.P., 2020. Kemampuan berpikir tingkat tinggi dalam pemanfaatan YouTube sebagai media pembelajaran bahasa Indonesia. Jurnal Ilmiah Sekolah Dasar, 4(2), pp.282-289.

Rahyubi, Heri. 2012. Teori-Teori Belajar dan Aplikasi Pembelajaran Motorik. Bandung: Nusa Media.

Restu Fristadi dan Haninda Bharata, "Meningkatkan Kemampuan Berpikir Kritis Siswa Dengan Problem Based Learning," Seminar Nasional Matematika Dan Pendidikan Matematika UNY, Universitas Lampung, (2015), 598

Slavin, R.E. 2000. Educational Psychology: Theory and Practice. Sixth Edition. Boston: Allyn and Bacon

Soekanto, Soerjono. 2017. Sosiologi Suatu Pengantar. Jakarta: Rajawali Pers.

Suwarno, M., 2017. Potensi YouTube sebagai sumber belajar matematika. Pi: Mathematics Education Journal, 1(1), pp.1-7.

Wowo, Sunaryo Kuswana. 2012. Taksonomi Kognitif Perkembangan Ragam Berpikir. Bandung: PT.

Remaja Rosdakarya.