

IMPLEMENTATION OF PROBLEM-BASED LEARNING MODEL & GOOGLE CLASSROOM MEDIA ON STUDENT'S CRITICAL THINKING ABILITY IN THE COVID-19 PANDEMIC (A STUDY OF LITERATURE)

Liliyana Ayu Widyaningrum¹ Aniek Hindrayani² Muhammad Sabandi³

¹⁾ Students Master of Economics, University of March, Surakarta, Indonesia

²⁾³⁾ Lecturer of the Economics Education Masters Program, Sebelas Maret University, Surakarta, Indonesia
liliyanaayuw@student.uns.ac.id^{a)}, aniek_h@staff.uns.ac.id^{b)}, muhsbandi@gmail.com^{c)}

Abstract

The Covid-19 pandemic has changed the pattern of learning at all levels of education. The purpose of this study is to analyze the literature study and explain whether the problem-based learning model and Google Classroom media during the Covid 19 pandemic can improve students' critical thinking skills. The research method used is the descriptive method and collects various documents related to the Problem Based Learning model and Google Classroom media during the Covid-19 pandemic. The technique used in this article is to use research *literature review* related to problem-based learning models and Google Classroom media during the Covid-19 pandemic. The type of research used is library research. The results of a literature review of 10 articles cited, 8 articles show that problem-based learning models and Google Classroom media can improve students' critical thinking skills during the Covid-19 pandemic and 2 articles show that problem-based learning models and Google Classroom media have no significant effect in the aspect of students' critical thinking skills during the Covid-19 pandemic.

Keywords: Problem-Based Learning Model, Google Classroom, Critical Thinking, Online Learning.

INTRODUCTION

Critical thinking ability is a skill that must be possessed by students in the 21st century. Critical thinking ability is a form of complex thinking activity, involving specific analysis of thinking activities, being able to distinguish, select, identify, evaluate, and develop into something more perfect. Critical thinking includes two things, namely *critical thinking ability* and *critical thinking disposition*, to decide what to believe or do. People are said to have the ability to think critically if someone tries to prove the truth and meaning of information when they receive the information. However, in reality, the critical thinking ability of students in Indonesia is currently relatively low. This is also supported by the results of a survey by *The Organization for Economic Co-operation and Development* (OECD) announcing the results of the survey *Program for International Student Assessment* (PISA) in 2018 reporting that students' thinking skills are very low.

Indonesia is ranked 73rd out of 79 countries. Low critical thinking ability is caused by several factors, namely students tend to memorize material and formulas rather than understanding concepts.

Critical thinking is the ability to manage information that involves identifying problems so that students can find the cause of an event, think logically, assess the impact of an event, find solutions, and arrive at conclusions (Arif et al., 2020). According to Ennis (2018) indicators of critical thinking skills are divided into five categories, namely: (1) basic clarification, (2) basic support, (3) interrupting, (4) advanced clarification, and (5) strategies and tactics. Teachers as educators play an important role in the teaching and learning process in schools. In addition, teachers must know the characteristics of students in their classes so that they can lead and guide the teaching and learning process.

Teachers who teach using an effective and efficient model can increase

students' interest and attention (Erlangga et al., 2021). Learning will be well received by students if the teacher uses a learning model that involves all students. Using the right learning model, students are expected to be able to absorb and apply the knowledge taught by the teacher or educator properly and correctly. In the development of technology and information systems as it is today, there are many types and variations of learning models that can be used by teachers in the learning process. In fact, in the field there are still forms of one-way teaching and learning. The learning process in one direction only emphasizes the cognitive aspects of students, while the emotional and psychological aspects of students are not considered (Albashtawi & Al Bataineh, 2020). The learning model applied by the teacher in the classroom needs to be made in such a way that it can attract the attention and motivation of students. Therefore, the learning process needs to be changed. In addition, teachers must use learning media that are adapted to the digital era to change the teaching model by using a learning model.

In December 2019, the deadly coronavirus emerged from Wuhan China and spread rapidly throughout the world. As a result, the World Health Organization (WHO) has designated the coronavirus (COVID19) as a global pandemic. The COVID-19 pandemic affects various areas of life, including education, culture, and the local economy. Students from existing educational institutions such as schools, non-regular educational institutions, and universities at all levels are greatly impacted. To survive this pandemic, people need to maintain social distancing during social interactions and recognize the need to isolate themselves to avoid people who are susceptible to the virus. This effort is used to prevent or contain the spread of COVID-19.

To break the chain of the spread of the coronavirus, the implementation of education must be in line with the social

distancing policy launched by the government. During the Covid-19 pandemic, learning at all levels takes place at each student's home and is carried out through online media, so education at all levels is temporarily closed. Teachers need to ensure that teaching and learning activities continue when students are at home. Learning innovation is a solution that needs to be designed and implemented by teachers by making full use of existing media, such as online media. Teachers can learn to use e-learning methods, namely learning to use information and communication technology. Learning system runs through devices such as laptops and *mobile phones* (HP) which are connected to the Internet network connection. Teachers can use social media such as Whatsapp (WA), Google Classroom, Zoom and other social media as a means of learning.

Based on the statement above, the researcher hopes to conduct a literature review on the learning model *Problem Based Learning* and Google Classroom media in improving students' critical thinking skills in online learning during the Covid-19 pandemic. The main purpose of writing this article is to describe the results of research published in scientific journals about learning models *Problem Based Learning* and Google Classroom media in improving students' critical thinking skills in online learning during the Covid-19 pandemic. This article is expected to provide references and considerations in various units of education level to make improvements in order to achieve the goals of online learning.

METHODS

Researchers used descriptive methods and collected various documents related to the learning model *Problem Based Learning* and Google Classroom media during the Covid-19 pandemic. This research is qualitative. The technique used in this article is to use research *literature*

review, namely through research and understanding of documents related to the learning model *Problem Based Learning* and Google Classroom media during the Covid-19 pandemic. The type of research used is library research, namely in-depth research and analysis of library data to obtain objective results. The sources of this research are national and international articles from Google Scholar related to the topic of problems at various levels of education.

RESULTS AND DISCUSSION

RESULTS

Based on scientific articles from various journal publications with relevant problem topics, researchers have identified and filtered the obtained 10 articles that are in accordance with the research objectives. The first study, conducted by Erni and Sauri (2021) found that 61.2% strongly agree that online learning using the model *Problem Based Learning* can stimulate students to think critically and find solutions independently. Subsequent research by Aulia, M.R, Leny, L., & Hamid (2021) found that online learning with the model *Problem Based Learning* using Google Classroom showed that there was a significant difference in critical thinking skills between experimental class 1 and experimental class 2, namely $t_{count} > t_{table}$ is $2.27 > 1.99$.

Research by Qalbi & Saporahayuningsih (2021) obtained the results that data analysis was obtained where in the first cycle the percentage in the very good category was only 4% increased to 13% in Cycle II, based on the data analysis using the model, *blended-Problem Based Learning* there was an increase in critical thinking ability to students of the Bengkulu University PG-PAUD Study Program. Research by Erlangga et al., (2021) found that the experimental class obtained an average pretest score of 64.26 out of 100, while the posttest average score was 85.06 out of 100, with an increase of 20.80. In the

control class, the average pretest score was 64.43 out of 100, while the posttest average score was 68.13 out of 100, with an increase of 3.70. There was a significant difference in students' critical thinking abilities in the experimental class compared to the control class. Based on the results of the study, it was concluded that learning with PBL assisted by Google Classroom was better and more effective than learning without the assistance of Google Classroom.

Research by Rahmi Ramadhani et al., (2019) found that the test results showed that the model *Flip-Problem Based Learning* and the media *LMS-Google Classroom* had a positive and significant effect on students' critical thinking skills in mathematics. Research by Libata et al., (2020) shows that Google Classroom improves students' critical thinking skills and is effective in changing students from passive students to active students. Research by Pepo, A.R, Arjaya, I.A., & Paraniti (2019) showed that there was an increase in critical thinking skills based on the learning model *Problem Based Learning* Google Classroom-based with a significant level value of $P = 0.000 < 0.05$. Research by Noah and Gbemisola (2020) shows that the Google Classroom platform as the delivery of online learning positively affects students' academic achievement, attitudes and critical thinking skills during the pandemic in Nigerian high schools.

Based on the results of the research above, there are differences in the results of research from various researchers who provide an explanation that the learning model *Problem Based Learning* and Google Classroom media have no effect on students' critical thinking skills. Research conducted by Maftuhatus Samihah and Savitri (2021) showed that $t_{count} = 2.8038 > t_{table} = 1.9917$, it was concluded that learning the PBL model with animated videos using Moodle was better than learning the PBL model with animated videos using Google Classroom.

Research by Masnur and Ismail (2021) shows that the use of the Edmodo platform is more effective than the Google Classroom platform. It can be seen that the increase in Edmodo's N-Gain is higher than Google Classrooms AND-Gain ($0.61 > 0.52$), meaning that the Edmodo platform affects the critical thinking skills of students majoring in PGSD, Muhammadiyah University of Enrekang.

Based on the discussion of the results of a literature review of 10 articles cited, 8 articles show that the model *Problem Based Learning* and Google Classroom media can improve students' critical thinking skills during the Covid-19 pandemic and 2 articles show that the Problem Based Learning model and Google Classroom media do not have a significant influence on aspects of students' critical thinking skills during the Covid-19 pandemic.

DISCUSSION OF *PROBLEM BASED LEARNING*

According to Erni and Sauri (2021) one of the learning models that can be used in online learning during a pandemic is the model *Problem Based Learning*. According to Arif et al., (2020) critical thinking skills can be developed through appropriate learning models. Learning models that meet these criteria are the *Problem Based Learning* model and the learning model *Inquiry Based Learning* (R. Ramadhani et al., 2020). A learning model that can explore students' abilities and skills, especially in terms of exploring critical thinking skills is the model *Problem Based Learning* (Pepo, AR, Arjaya, IA, & Paraniti, 2019). *Problem Based Learning* can be interpreted as a learning model that encourages students to know how to study in groups to find solutions in the real world. One of the learning models that are suitable for use in online learning during a pandemic is the problem based learning model.

Problem Based Learning (PBL) is a learning model that provides a problem

related to everyday life as a first step in learning, and the teacher guides students to find problem solving through problem solving, critical thinking, and problem solving skills. Furthermore, Qalbi & Saparahayuningsih (2021) suggest that the learning process using the PBL model is able to develop students' critical thinking skills as a step towards solving problems and being able to draw conclusions based on their understanding. This is in line with research conducted by Iskandar et al., (2021) that the PBL model has a high influence on students' critical thinking skills.

According to Novianti et al., (2021) the main purpose of the PBL model is to develop critical thinking and problem solving skills, as well as develop students' knowledge skills to be active. In PBL, students are required to solve, analyze, and evaluate a problem. Students will be directly involved in problem solving by using the thinking, experience and conceptual skills they will find in solving the problems presented. In addition, teachers need to combine learning models with learning media that are in accordance with the times. With the development of technology today, students have closer access to the internet and use social networking sites in their daily lives.

ONLINE LEARNING

The teaching and learning process during the COVID-19 pandemic is carried out remotely using an online system (e-learning). E-Learning can be defined as a digital learning process through the internet web (Erlangga et al., 2021). E-Learning is to provide various solutions to improve the knowledge and skills of teachers in using online learning media. According to Aulia & Hamid (2021) online learning is a learning process that does not take place between teachers and students.

Online learning media is a tool designed to clarify how to present information that can foster student interest

in learning and understanding the concept. To support the online learning process, online media platforms can be used, such as Google Classroom, Whatsapp groups, etc. (Rahmi Ramadhani et al., 2019). Online learning media that is currently developing and starting is Google Classroom. This is supported by the research of Krisna and Mery Marlinda (2020) that one of the easy-to-use online learning media is Google Classroom, which provides online classrooms making it easier for students to access learning from anywhere

GOOGLE CLASSROOM

. Google Classroom is a mixed learning media that makes it easy for teachers to share and grade each assignment paperless. This software has been licensed as a feature of Google Apps for Education released on August 12, 2011. The app offers a powerful set of features that are ideal for students to use. Google Classroom also helps teachers save time and improve communication with students in learning when students are not in class. This is corroborated by the results of research conducted by Masnur, M., & Ismail (2021) that Google Classroom is effective to use because it can be accessed easily by students and faculty based on conference needs. Subsequent research was carried out by Suhidi, A., Hasan, R., and Hidayat (2021). The results of the study stated that Google Classroom is an online learning media or online class to make it easier for teachers to give assignments and grouping without using paper.

According to Okmawati (2020) Google Classroom is one of the discovery learning media because it allows students to maximize their ability to search, understand, explore, analyze and present learning outcomes. One feature that teachers often use when using Google Classroom is assignment creation, which serves to give assignments to students (Octaberlina & Muslimin, 2020). In

addition, like regular face-to-face classes, there is a topic creation feature that is no less interesting than other features that students can use for discussions in Google Virtual Classroom so that students can actively participate in learning.

CONCLUSION

Based on the *literature review* and discussion in the previous chapter, the Covid-19 pandemic has created changes in the Indonesian education system. This condition forces teachers and students to work and study at home. The current research concludes that the use of the model *Problem Based Learning* can improve students' thinking activities, familiarize them with problems, and develop critical thinking skills. The use of problem-based learning models combined with interactive media can attract students' attention. Google Classroom is an app that allows teachers to create online classrooms. The purpose of using Google Classroom is as an effective learning tool, as it helps students improve their learning by actively participating in online discussions and assignments.

References

- Albashtawi, A. H., & Al Bataineh, K. B. (2020). The Effectiveness Of Google Classroom Among EFL Students In Jordan: An Innovative Teaching And Learning Online Platform. *International Journal of Emerging Technologies in Learning*, 15(11), 78–88.
- Arif, D. S. F., Zaenuri, & Cahyono, A. N. (2020). Analisis Kemampuan Berpikir Kritis Matematis Pada Model Problem Based Learning (PBL) Berbantu Media Pembelajaran Interaktif dan Google Classroom. *Seminar Nasional Pascasarjana 2020, 2018*, 323–328.
- Aulia, M. R., Leny, L., & Hamid, A. (2021). Pengaruh Pembelajaran Daring Terhadap Keterampilan

- Berpikir Kritis Menggunakan Model Problem Based Learning Berbasis Etnosains Pada Materi Kesetimbangan Ion Dalam Larutan Garam. *Quantum: Jurnal Inovasi Pendidikan Sains*, 12(2), 2086–7328.
- Erlangga, S. Y., Jumadi, Nadhiroh, N., & Wingsih, P. H. (2021). The Effectiveness of Using Worksheet with the Problem-Based Learning (PBL) Through Google Classrooms to Improve Critical Thinking Skills During the Covid-19 Pandemic. *International Seminar on Science Education (ISSE 2020)*, 541(Isse 2020), 427–433.
- Erni, Sauri, S. (2021). (2021). Efektivitas Model Pembelajaran Problem Based Learning Dalam Pembelajaran Daring Pada Masa Pandemi Covid 19 Di SMAN 9 Pandeglang. *Jurnal Education And Development*, 9(3), 566-572.
- Iskandar, A. M., Nurfadhiah, D., Yuli, W. I., & Desnita, D. (2021). Meta-Analisis Pengaruh Model Problem Based Learning terhadap Kemampuan Berpikir Kritis Siswa. *Jurnal Pendidikan Fisika Dan Teknologi*, 7(1), 48.
- Krisna, E. D., & Mery Marlinda, N. L. P. (2020). Implementasi Problem Based Learning berbantuan Google Classroom Untuk Meningkatkan Prestasi Belajar Matematika. *Journal of Science Education*, 4(3), 91–97.
<https://doi.org/10.33369/pendipa.4.3.91-97>
- Libata, I. A., Hussaini, I., Ibrahim, S., Wali, B., Libata, I., & Musa, U. (2020). Effectiveness of Google Classroom as a Digital Tool in Teaching and Learning: Students' Perceptions. In *International Journal of Research and Innovation in Social Science (IJRISS) /Volume IV, Issue IV*.
- Maftuhatus Samihah, I., & Savitri, E. N. (2021). Journal of Environmental and Science Education Comparative Study of Critical Thinking Skills on PBL Model Learning with Animated Videos between the Students Using Moodle and Google Classroom. *Journal of Environmental and Science Education*, 1(2).
- Masnur, M., & Ismail, I. (2021). (2021). Efektivitas E-Learning Edmodo dan Google Classroom Terhadap Kemampuan Berpikir Kritis Mahasiswa PGSD Universitas Muhammadiyah Enrekang. *Jurnal Pendidikan Guru Sekolah Dasar*, 2(1), 163–169.
- Noah, O. O., & Gbemisola, K. O. (2020). Impact of Google Classroom as an Online Learning Delivery during COVID-19 Pandemic: The Case of a Secondary School in Nigeria. *Journal of Education, Society and Behavioural Science*, 53–61.
- Novianti, R., Rusyana, A., & Yulisma, L. (2021). Pengaruh Model Problem Based Learning Melalui Google Classroom Terhadap Keterampilan Berpikir Kritis Siswa Pada Sub Materi Pencemaran Lingkungan Di SMA Negeri 1 Kawali. In *Jurnal Keguruan dan Ilmu Pendidikan* (Vol. 2, 3).
- Octaberlina, L. R., & Muslimin, A. I. (2020). Efl Students Perspective Towards Online Learning Barriers And Alternatives Using Moodle/Google Classroom During Covid-19 Pandemic. *International Journal of Higher Education*, 9(6), 1–9.
- Okmawati, M. (2020). The Use Of Google Classroom During Pandemic. *Journal of English Language*, 9(2).
- Pepo, A. R., Arjaya, I. A., & Paraniti, A. I. (2019). Penerapan Model Pembelajaran Problem Based Learning Berbasis Google Classroom Terhadap Kemampuan Berpikir Kritis Ditinjau Dari Gaya

- Kognitif Siswa. *Jurnal Biologi Konstektual (JBK)*, 1(2), 152-163.
- Qalbi, Z., & Saparahayuningsih, S. (2021). Penggunaan Blended-Problem Based Learning di Masa Covid-19 Untuk Meningkatkan Kemampuan Berpikir Kritis Pada Mata Kuliah Kreativitas dan Keberbakatan. *Jurnal Ilmiah Kependidikan*, 8(1), 1–11.
- Ramadhani, R., Bina, N. S., Sihotang, S. F., Narpila, S. D., & Mazaly, M. R. (2020). Students' Critical Mathematical Thinking Abilities Through Flip-Problem Based Learning Model Based On LMS-Google Classroom. *Journal of Physics: Conference Series*, 1657(1).
- Ramadhani, Rahmi, Umam, R., Abdurrahman, A., & Syazali, M. (2019). The Effect Of Flipped-Problem Based Learning Model Integrated With LMS-Google Classroom For Senior High School Students. *Journal for the Education of Gifted Young Scientists*, 7(2), 137–158.
- Suhidi, A., Hasan, R., & Hidayat, T. (2021). Kemampuan Hasil Belajar Dan Berpikir Kritis Siswa Dengan Menggunakan Model Pembelajaran Inkuiri Melalui Google Classroom. *Jurnal Pendidikan Biologi Dan Sains*, 4(2), 393-401.