Strengthening Critical Thinking Skills for Students Through Application Project Learning Model

Ica Klara Monica[1*]

[1]*Sebelas Maret University, Indonesian*

*) Corresponding author: icaklara21@gmail.com

Abstract

This study discusses strengthening critical thinking skills for students which is one of the skills in the 21st century. Strengthening critical thinking skills is carried out by applying a project learning model. We can see that the independent curriculum concept emphasizes project learning which is expected to have a good impact on the learning process. This study aims to contribute to understanding the knowledge of teachers and students about the importance of having critical thinking skills which can be strengthened through the application of project learning models. The method used in this research is descriptive qualitative with interview data collection techniques and literature study. The results of this study explain that strengthening critical thinking skills for students can be done through the application of project learning models. This is because the learning model prioritizes active student involvement in the learning process.

Keywords: Critical thinking skill; Project learning models

Introduction

Education is a way for humans to "survive" and adaptrapid changing times. In Indonesia, education is listed in Law no. 20 years 2003, which aims to develop the potential of students to become human beings have faith and devotion to God Almighty, capable, creative, independent, have noble character, healthy, knowledgeable, and democratic and responsible citizens. To achieve For the purpose of education, an intermediary is needed, namely the curriculum (Vhalery et al.,2022).

In 2019, the 2013 curriculum was changed to the Independent Learning Campus curriculum Merdeka (MBKM). The Merdeka Curriculum is designed to be a curriculum with a design more flexible that focuses on essential content and develops characters and student skills. The transformation of education through the independent learning policy went wrong a form of educational transformation towards the creation of human resources competent according to the Pancasila student profile. The dimensions of the Pancasila Student Profile include students who are faithful, devoted to God Almighty and have noble character, global diversity, mutual cooperation, independence, critical and creative reasoning (Kusumaningsih, 2022).

The world of education is still faced with one problem, namely low levels critical thinking skills in students. Even though critical thinking skills are very important to have each student so that later they can face problems critically so as to solve them best solution. The low level of critical thinking skills among students is caused by daily learning which is considered less effective in developing

students' interests, skills and potential. Based on the results of the 2012 Global Index of Cognitive Skills and Educational Achievement, Pearson found that in education, Indonesia is ranked as low as 40th of 40 countries surveyed (Tamara, 2018). Then, 2011 data from TIMSS (The Trends in International Mathematics and Science Study) shows that more than 95% students in Indonesia can answer questions only at the intermediate level, whereas in Taiwan almost 50% of students can answer questions at a high level. Thus, it can be seen that Indonesian students' level of critical thinking is still relatively low (Syafitri et al., 2021).

One of the factors causing the low TIMSS score is that there are not enough Indonesian students trained in solving contextual problems that require reasoning, opinions and creativity to solve it. Then there are factors that cause low thinking critical of students, namely the learning model (Safitri et al., 2022). Application of learning models is very important in implementing the learning process. Thus the solution These problems can be solved by implementing the learning process in class not only focused by the teacher (teacher-centered). Students themselves are required to be more active involved in the learning process (learner-centered) in order to develop knowledge knowledge so that students are able to think critically, creatively and innovatively and solve problem.

The reality in the field is that teachers have difficulty improvising learning in the classroom because Pancasila Education Learning only emphasizes aspects knowledge alone so that aspects of attitudes and skills have not been given much attention (Dwiantoro & Basuki, 2021).

The problems above can be overcome by teachers using models appropriate learning to strengthen critical thinking skills for students. Grant states that the appropriate learning model is used to develop Critical thinking skills are the Project learning model (Grant, 2002). Model Project learning is an ideal learning model to achieve goals 21st century education because it combines the 4C principles, namely critical thinking, communication, collaboration, and creativity (critical thinking, communication, collaboration, and creativity). Research on

project learning models shows that this type of learning gives students real learning advantages compared to more classroom learning traditional. In this way, students' critical thinking skills can be strengthened through project learning (Zubaidah, 2018).

Method

In this research, researchers used qualitative research methods. qualitative research is research that functions to determine the research focus, selecting informants as data sources, collecting data, assessing data quality, and making conclusions findings in research (Sugiyono, 2014). The aim of the research is to obtain data, so that data collection techniques become an important stage in research. Technique The researchers used in collecting data consisted of interviews and literature study. An interview is a meeting between two people who exchange information or ideas through a session questions and answers so that they can be converted into meaning in a particular topic. (Sugiyono, 2016).

In this research, interviews were conducted with teachers and students. Then literature study is an effort made by researchers to collect relevant information with the topic or problem that will be or is being researched (Sugiyono, 2013). Literature review This is done by searching various sources including books, journals, proceedings that are relevant to this research. This literature study was carried out to explore the data regarding critical thinking skills and project learning models.

Result and Discussion

Critical Thinking Skills The development of science and technology (IPTEK) is increasingly rapid ushered us into the era of globalization. This condition requires humans to have There are many skills, one of which is critical thinking skills can adapt, survive and compete in global competition. Critical thinking concept very closely involved with deep reasoning (Syafitri et al., 2021). one of higher order thinking skills or Higher Order thinking Skills/HOTS other than thinking creative (creative thinking), problem solving (creative thinking), problem solving (problem solving), and reflective thinking, namely critical thinking. (Hidayah et al., 2017).

Critical thinking skill is the ability to think logically, reflectively, systematic, and applied in making judgments, thinking deeply about problems and making the right decisions. Ennis explains that concept Critical thinking is mainly based on specific skills such as observation, estimation, generalization, reasoning, and evaluation (Kurniasih, 2012). Siegel provided his related understanding with critical thinking that it is important to prioritize the reasoning and assessment components always have a critical attitude. a critical thinker who has both components then able to justify beliefs, claims and actions appropriately (Kurniasih, 2012). Another theory of critical thinking is the professional and active interpretation and evaluation of observation and communication, information and reasoning. This theory explains that learning requires skills. In this case students not only think, but have a process active questioning to obtain clear information (Fisher, 2007). Critical thinking skills really need to be developed in the 21st century through a process education. Having this ability will influence your success in life someone because they are able to think deeply about things related to what they are doing what he will do.

Reasons for the need for critical thinking skills, namely:

1. knowledge based on weak memorization makes a person unable to retain it their knowledge for a long time.

2. There is so much information being spread around that everyone needs to have the same abilities can recognize and solve the problems encountered.

3. The complexity of modern work requires someone who is able to think clearly so that they can understand and make decisions in the field of work.

4. Modern society requires individuals to combine information from various sources resources and making decisions (Wilson, 2000).

From the reasons above, we can understand that critical thinking skills need to be possessed and developed. This skill development strategy can be carried out by: give students the opportunity to be active by asking various questions so that students will be motivated to find out relevant related information. This is in line with There are

certain characteristics if someone has critical thinking skills, namely tends to find out something on which to base decisions and actions carried out, being neutral or impartial and objective in relevant facts (Kurniasih, 2012). Critical thinking skills will become a habit when trained consistently. Matter This has an impact when students are faced with a problem so they can take it decisions quickly, precisely and efficiently in students' daily lives. Someone who Having critical thinking skills tends to be easier and faster in identifying information relevant issues and utilize them to find solutions to problems or take decisions accompanied by relevant supporting data (Syafitri et al., 2021). Apart from that, there are also opportunities great at studying problems, facing challenges and carrying out solutions effectively systematic and precise. Having critical thinking skills will be very useful and become a provision in living life now and in the future in various ways increasingly complex problems. The following characteristics are related to critical thinking. characteristics are related to critical thinking.

a. Character (dispositions)

The characteristic of someone who has critical thinking skills is that they have curiosity large, open, respectful of various data and opinions, respectful of clarity and thoroughness, looking for different views.

b. Criteria (criteria)

Critical thinking skills must have criteria or standards. If we have to implement standardization, it must be based on relevance, factual accuracy, credible, thorough, reliable sources impartial, consistent, mature and precise logic.

c. Argument (argument)

An argument is a claim or statement based on data. critical thinking skills include recognize. evaluate and form opinions.

d. Consideration or thinking (reasoning)

This ability consists of summarizing a conclusion from one or more premises. In The process includes activities that test the relationship between several statements or data.

e. Point of view (point of view)

Point of view is an interpretation of this world that leads to construction meaning. Someone who has critical thinking skills views a phenomenon from various perspectives viewpoint.

f. Procedures for applying criteria (procedures for applying criteria)

The process of applying critical thinking is very complex and procedural. the procedure includes problem formulation, determining decisions to be taken, and determining estimates (Beyer, 1995).

Project Learning Models

21st century learning leads to the formation of a young generation that has ownership High level thinking, one of which is critical thinking skills. (Martini, 2018). (To achieve the learning objectives of the 21st century, teachers have an important role to be able to designing and developing ways to help students learn effectively. Study about project-based learning shows that this type of learning provides students the advantages of direct learning compared to more in-class learning traditional. The application of this learning model is able to have an impact on achieving results better learning and a variety of 21st century skills significantly than applying traditional methods (Trilling, 2009). This project's learning model is encouraging students to work collaboratively, responsibly and think critically in the process learning (Dwiantoro & Basuki, 2021)

The Project learning model is a learning model that focuses on students (student center learning). The role or involvement of students in learning model activities the project is given priority. The role of the teacher is only as a facilitator for students to gain answers to guiding questions (Hartini, 2017). In the learning process students have great opportunity to manage the learning process starting from identifying problems, decision making, to producing projects to solve problems faced (Dwiantoro & Basuki, 2021).

The steps implemented in a learning model are very determining the success of the learning model used. The steps for the learning model are projects namely:

a. Start with the essential question, Learning begins by asking initial questions that can lead students to do activities. The topics presented must be relevant and appropriate students' real world.

b. Design a plan for project

Project design is carried out in collaboration between teachers and students. Plan This project contains the rules for project implementation, activities to be carried out as well as tools and equipment materials used to carry out the project.

c. Create a schedule

Teachers and students work together to plan a schedule for completing the project. The project end time should be clear and students should be given instructions on how to manage that time available. Then the students try to explore something new, but the teacher too should always remind students when student actions deviate from project goals.

d. Monitor the students and the progress of the project

The teacher supervises student activities during the completion of the project by assisting students in every process when experiencing difficulties. Here the teacher acts as a guide in student activities.

e. Assess the outcome

Assessments are carried out to help teachers measure standard performance, participate in evaluating each student's progress, providing feedback on level understanding that students have achieved, and help teachers develop strategies learning for the next time. Product evaluation is carried out in each individual way Groups present their products to other groups in turn.

f. Evaluate the experience

teachers and students reflect at the end of the lesson. The reflection process can carried out individually or in groups. (Ananda, 2018) The benefits of PjBL learning are as follows:

a. The learning process provides new knowledge and skills

b. Students are more active when faced with a problem so they are able to do it solve problems well with results in the form of real products in the form of goods or service;

c. students are able to manage resources/materials/tools to complete projects;
d. collaboration between students is getting better
e. students make decisions and create frameworks;
f. students are responsible for obtaining and managing the information collected
g. students carry out continuous evaluations (Fathurrohman, 2016).

Strengthening Critical Thinking Skills for Students Through the Project Learning Model Pancasila Education Subject

Critical thinking skills are very important to have, especially when implementing independence learn with independent learning which further strengthens the needs of students will think critically. Basically Critical thinking skills can provide deep support learning process. But apart from that, it can also help students to explore and train other potentials within himself that can be used to achieve actualization self in personal, social, learning and career aspects (Kurniawan et al., 2020)

Critical thinking skills have an important role in improving processes and learning outcomes and provisions to face the future in the 21st century. We can know that human problems in this life are increasingly complex. This problem very diverse from personal life, as well as national and state life. Responding This means that humans need critical thinking skills to be able to face challenges have critical thinking power so they are able to solve problems (Montessori, 2002).

Several studies prove the benefits of critical thinking skills in learning as well as preparation for the future, namely according to Piaget's theory, the development of abilities Formal reasoning is very important for the acquisition (mastery) of concepts, because knowledge conceptual is the consequence or result of a constructive process, and reasoning ability These are the tools needed in that process (Sukmadinata, 2004)

Critical thinking skills can be developed through learning that emphasizes student center which focuses on giving students the opportunity to be active and develop his existing abilities. Critical thinking skills are very important in education World. With these abilities students will learn skills such as: understanding other people's arguments and beliefs, evaluating critically, develop and defend one's own arguments with data. critical thinking skills can help students evaluate themselves critically, including strengths and weaknesses. Besides Therefore, critical thinking skills can indirectly provide many strategies and skills that are appropriate to the problems experienced (Arofah et al, 2019).

Efforts to develop critical thinking skills for students need to be continuously carried out by administrators. One step that can be implemented in its development is to leave conventional patterns in learning and replacing them with new centered patterns to students. Student centered learning (SCL) is a learning model focuses on students, the teacher's involvement is only as a guide or facilitator in the process learning. with a learning model that focuses on students it will help students to be active and independent in the learning process. Apart from that, students will also have initiative to recognize the learning process and take responsibility for their work. There are several models of student-centered learning, one of which is the project learning model (Suatini, 2019). The success of implementing the project learning model depends on the teacher's abilities to condition effective learning. This can be done with motivate students, support and guide students during learning (Dewi, 2022). Factors from the students themselves also greatly influence, among others: his interest in learning, enthusiasm and abilities.

Conclusion

One way for humans to "survive" and adapt to change The era is fast, namely with education. In the world of education, it is very important developing critical thinking skills for students which will be useful for the future now and in the future. By having these skills, students will think deeply so that when students are faced with various problems then can make decisions and solve problems quickly and accurately. Teachers have a role important in developing critical thinking skills for students. One way that can be done The teacher does this by implementing a project learning model. Learning model It focuses on student involvement in the learning process so

that they are capable provide strengthening of critical thinking skills for students.

References

Ananda, U. (2018). Penerapan Model Project Based Learning untuk Meningkatkan Kreativitas Siswa pada Pembelajaran IPA Kelas IV MIN 6 Aceh Selatan (Doctoral dissertation, UIN Ar-Raniry Banda Aceh)

Arofah, L., & Nawantara, R. D. (2019). Pentingnya Critical Thinking Bagi Siswa dalam Menghadapi Society 5.0.

Beyer, BK. (1995). Critical Thinking. Bloomington: Phi Delta Kappa Educational Foundation Dewi, M. R. (2022). Kelebihan dan Kekurangan Project-based Learning untuk Penguatan Profil Pelajar Pancasila Kurikulum Merdeka. Ejournal UPI, 19(2), 213–226.

Dwiantoro, A., & Basuki, I. (2021). Analisis Pengaruh Model Pembelajaran Project Based Learning Terhadap Peningkatan Hasil Belajar Siswa Pada Mata Pelajaran Instalasi Penerangan Listrik Di Smk. Pendidikan Teknik Elektro, 10, 81–88.

Fathurrohman, Muhammad. (2016). Paradigma pembelajaran kurikulum 2013 strategi alternatif pembelajaran di era global. Yogyakarta: Kalimedia

Grant, M. M. (2002). Getting a grip on project-based learning: Theory, cases and recommendations. Meridian, 5(1).

Hartini, A. (2017). Pengembangan Perangkat Pembelajaran Model Project Based Learning Untuk Meningkatkan Kemampuan Berpikir Kritis Siswa Sekolah Dasar. ELSE (Elementary School Education Journal): Jurnal Pendidikan Dan Pembelajaran Sekolah Dasar, 1(2a), 6–16.

Hidayah, R., Salimi, M., & Susiani, T. S. (2017). Critical thinking skill: konsep dan inidikator penilaian. Taman Cendekia: Jurnal Pendidikan Ke-SD-an, 1(2), 127-133.

Kurniasih, A. W. (2012). Scaffolding sebagai Alternatif Upaya Meningkatkan Kemampuan Berpikir Kritis Matematika. Kreano, Jurnal Matematika Kreatif-Inovatif, 3(2), 113–124.

Kurniawan, N. A., Saputra, R., Aiman, U., Alfaiz, A., & Sari, D. K. (2020). Urgensi Pendidikan Berpikir Kritis Era Merdeka Belajar bagi Peserta Didik. Tarbawi : Jurnal Ilmu Pendidikan, 16(1), 104–109. https://doi.org/10.32939/tarbawi.v16i01.576

Kusumaningsih, K. (2022). Upaya Penumbuhan Karakter Profil Pelajar Pancasila Melalui Uji Boraks Pada Materi IPA Zat Aditif. WASIS : Jurnal Ilmiah Pendidikan, 3(2), 124–129. https://doi.org/10.24176/wasis.v3i2.9011

Martini, E. (2018). Membangun karakter generasi muda melalui model pembelajaran berbasis kecakapan abad 21. JPK (Jurnal Pancasila dan Kewarganegaraan), 3(2), 21-27.

Montessori, M. (2002). Pendidikan Kewarganegaraan dan Keterampilan Berpikir. Jurnal Demokrasi, 1(1), 52–59. http://ejournal.unp.ac.id/index.php/jd/article/view/2534 Safitri, A.,

Wulandari, D., & Herlambang, Y. T. (2022). Proyek Penguatan Profil Pelajar Pancasila: Sebuah Orientasi Baru Pendidikan dalam Meningkatkan Karakter Siswa Indonesia. Jurnal Basicedu, 6(4), 7076–7086. https://doi.org/10.31004/basicedu.v6i4.3274

Suatini, N. K. A. (2019). Langkah-langkah Mengembangkan Kemampuan Berpikir Kritis Pada Siswa. Kamaya: Jurnal Ilmu Agama, 2(1), 41-50.

Sugiyono. (2016). Metode Penelitian Kuantitatif, Kualitatatif dan R&D. Bandung: Alfabeta

Sugiyono. (2014). Metode Penelitian Kuantitatif Kualitatif dan R&D. Bandung: Alfabeta.

Sugiyono. (2013). Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D. Bandung: Alfabeta.

Sukmadinata, N. S. (2004). Kurikulum dan Pembelajaran Kompetensi. Bandung: Kesuma Karya Bandung.

Syafitri, E., Armanto, D., & Rahmadani, E. (2021). Aksiologi Kemampuan Berpikir Kritis. Journal of Science and Social Research, 4307(3), 320–325. http://jurnal.goretanpena.com/index.php/JSSR

Tamara, T. (2018). Pengaruh penerapan metode think pair share dan group investigation terhadap kemampuan berpikir kritis siswa. Indonesian Journal

of Economics Education, 1(1), 73–84. https://doi.org/10.17509/jurnal

Vhalery, R., Setyastanto, A. M., & Leksono, A. W. (2022). Kurikulum Merdeka Belajar Kampus Merdeka: Sebuah Kajian Literatur. Research and Development Journal of Education, 8(1), 185. https://doi.org/10.30998/rdje.v8i1.11718

Wilson, V. (2000). Educational forum on teaching thinking skills. Edinburgh: ScottishExecutive Education Department

Zubaidah, S. (2018). " Ajarilah anak-anakmu sesuai dengan zamannya , karena mereka hidup di zaman mereka , bukan pada zamanmu . Sesungguhnya mereka diciptakan untuk zamannya , sedangkan kalian diciptakan untuk zaman kalian ". April, 1–25