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The Influence of Motivation, Self-Potential, and Socio-Economic Conditions on The Interest in Continuing to Higher Education

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Abstract

Critical thinking skills are essential for students in developing their intellectual skills. Critical thinking involves the ability to objectively analyze, evaluate, and synthesize information. It allows students to make good decisions, recognize strong or weak arguments, and identify weaknesses in their own thinking. Critical thinking skills also help students be critical of information sources, avoid superficial thinking, and face challenges with creative problem solving. In today's information age, critical thinking enables students to become self-reliant, informed, and skilled individuals in the face of the changes and complexities of the modern world. Implementing monotonous learning without considering active student participation is one of the causes of low critical thinking abilities among students. This study aims to enhance students' critical thinking abilities through project-based learning. The research was conducted using a quasi-experimental method. The research design used a nonequivalent pretest-posttest control group design. The study subjects were students from class XI MIA 1 and XI MIA of SMA Negeri 5 Kota Sukabumi and SMAN 1 Sukaraja. The research results, obtained through the t-test, yielded a significance value of 0.007. This means that applied project-based learning can enhance students' critical thinking abilities.

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INTRODUCTION

Developing critical thinking skills is a significant proficiency and a primary demand in the industrial sector. Critical thinking plays the most vital cognitive role in solving complex problems and creating innovations to achieve excellence in today's global competition (Nugraha et al., 2018).

In the current era of global competition, educational practitioners are simultaneously shifting their focus towards student learning strategies that effectively develop critical thinking skills (Kurniawati et al., 2020). As a developing country, Indonesia needs to catch up and ensure that good critical thinking abilities are cultivated early on. This is important so that students become accustomed to learning critically, making them more prepared to face global competition in the future.

Critical thinking skills are essential for students in developing their intellectual skills. Critical thinking involves the ability to objectively analyze, evaluate, and synthesize information. It allows students to make good decisions, recognize strong or weak arguments, and identify weaknesses in their own thinking. Critical thinking skills also help students be critical of information sources, avoid superficial thinking, and face challenges with creative problem solving. In today's information age, critical thinking enables students to become self-reliant, informed, and skilled individuals in the face of the changes and complexities of the modern world (Saputra, 2020).

However, unfortunately, the situation has not progressed as expected. Ironically, the awareness to implement critical thinking is still not well-formed. One of the proven teaching methods, supported by various expert studies, to develop critical thinking in students is Problem-Based Learning. This learning method is often known as Project-Based Learning, an approach where students are placed at the centre of learning and are confronted with problems that stimulate collaborative work in finding solutions (Rati et al., 2017). The given problems are typically complex and

unstructured. Problem-Based learning refers to a curriculum that adopts a constructivist approach, emphasizing guiding students to solve problems as an experience that can be resolved by activating student participation in solving accurate and relevant cases (Kristanti et al., 2017).

Unfortunately, most educators, teachers, and educational institution administrators in Indonesia are reluctant to implement Project-Based Learning (PBL) methods due to the tendency of learning patterns in Indonesia that lack activation of students' critical thinking (Nugraha, 2023). Many educators in Indonesia still rely on traditional methods, such as memorization and direct teaching approaches, rather than more student-centred methods like PBL (Krueger & Kling, 2014).

Educators still hesitate to apply Project-Based Learning (PBL) methods because they believe that PBL is unsuitable for Indonesian culture (Widiyatmoko & Pamelasari, 2012). They argue that PBL is more suitable for Western cultures, which tend to be individualistic and open to differences, while Eastern cultures, such as Indonesian, emphasize conformity and harmony (Wulandari, 2016). In Indonesia, authoritarian approaches, passive learning, and rote memorization are often emphasized in learning.

However, it is essential to understand that such opinions contradict developing a culture of critical thinking. According to the autonomous learning theory, active learning supports the development of critical thinking more than traditional learning, which relies solely on memorization (Nugraha et al., 2018). In Indonesia, PBL can be adapted to align with local cultural values, such as building conformity and harmony through collaboration in solving environmental and societal problems.

Implementing PBL methods in Indonesian culture can provide significant benefits, such as improving critical thinking skills, group collaboration skills, and problem-solving abilities (Ismail, 2018). Therefore, educators need to see PBL as an opportunity to de-

velop students' abilities while still considering the cultural values that exist in society.

The implementation of the Project-Based Learning (PBL) model has several advantages, including: (a) Increasing students' learning motivation; (b) Building students' self-confidence; (c) Enhancing collaboration among students; (d) Making students more active in learning activities; (e) Equipping students with the ability to process information sources (Norhikmah et al., 2022)

The steps that differentiate the implementation of the PBL model from other learning models are as follows: (a) Determining fundamental questions related to the subject matter; (b) Designing the learning project; (c) Planning the project creation schedule; (d) Monitoring the project's progress; (e) Assessing the project; (f) Evaluating the experience in project creation.

Based on the explanation above regarding the PBL model, researchers are confident that implementing this model can enhance students' critical thinking abilities. Zubaidah (2010) explained that project-based learning is a model that aligns with education goals in the 21st century because it involves the principles of the 4Cs, namely critical thinking, collaboration, creativity, and communication. Therefore, this research holds significance as it is an effort to enhance students' critical thinking abilities.

Critical thinking ability is an important skill that students should develop. Critical thinking involves the ability to objectively analyze, evaluate, and synthesize information with the aim of achieving deep understanding. It involves the ability to look beyond the information presented directly and dig deeper, search for evidence, and question underlying assumptions (Saputra, 2020).

The importance of critical thinking skills for students lies in various aspects of their lives. First of all, critical thinking skills enable students to make good decisions. With the ability to critically analyze and evaluate information, students can consider various relevant factors before making impactful deci-

ons. This helps them avoid superficial thinking and make choices based on rational judgment.

Critical thinking skills also enable students to recognize strong or weak arguments. They can identify valid evidence, recognize logical reasoning, and evaluate the overall quality of an argument. This is important in an academic context, where students are challenged to understand theories, question discoveries, and develop a critical viewpoint of the material being studied (Saputra, 2020).

In addition, critical thinking skills help students identify weaknesses in their own thinking. It encourages students to be reflective of their approach and understanding, and involves a continuous process of self-improvement. With awareness of their weaknesses and shortcomings, students can seek better problem solving and improve their overall abilities.

In today's information age, critical thinking skills are essential. Students need to be able to distinguish between reliable and unreliable sources of information, as well as identify biases or manipulations that may be present in the presentation of data. This ability helps them become self-reliant, informed individuals who are able to participate in a complex and ever-changing society.

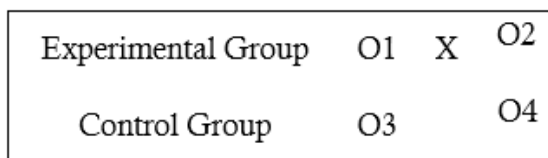
Critical thinking skills are also closely related to creative problem-solving skills. In situations that require innovative solutions, students with critical thinking skills can look at problems from multiple perspectives and find effective solutions.

Overall, critical thinking ability is an essential skill for students in facing a complex and challenging world. It helps them develop intellectual intelligence, independence, and a deep understanding of the information they face. By strengthening critical thinking skills, students can become active lifelong learners, creative problem solvers, and good decision makers.

METHODS

This research is a quantitative study using a quasi-experimental research design or

a quasi-experimental design because it lacks random treatment (Susilana, 2015). This study used experimental and control groups based on the pretest-posttest design. The research design will be presented through the following research design:



X: Treatment

O1: Pretest in the Experimental Group

O2: Posttest in the Experimental Group

O3: Pretest in the Control Group

O4: Posttest in the Control Group

The technique used to obtain the research sample is simple random sampling (Sholikah, 2017). The population consists of all students from SMAN 1 Sukaraja in Sukabumi Regency and SMAN 5 in Sukabumi City for the academic year 2022/2023. The sample taken from the accessible population is two randomly selected classes. Class XI-MIA 1 is the experimental group, and class XI-MIA 3 is the control group. The sample consists of 68 students, with 34 students from the experimental group and 34 from the control group.

RESULTS AND DISCUSSION

The results of this study show the average scores of critical thinking ability for both

the experimental and control groups, both in the posttest and pretest. After obtaining these average scores, the gain score is calculated, which is the difference between the posttest and pretest scores for both groups. The data on students' critical thinking measurement results can be seen in Table 1.

Table 1 shows the scores of students' critical thinking. The critical thinking score of the control group increased by 10.48 points, from 64 to 74.48. Meanwhile, the critical thinking score of the experimental group increased by 21.04 points, from 58.63 to 79.67. The gain score for critical thinking is 10.56.

The hypothesis test for the data on critical thinking scores presented above was then analyzed using a t-test. The t-test was conducted using the SPSS 24 program. The results of the t-test can be seen in Table 2.

The data in Table 2 shows a Sig. (2-tailed) value of 0.007. This value is smaller than 0.05. It indicates that the null hypothesis (H0) is rejected, so the alternative hypothesis (H1) is accepted. With the acceptance of H1, it can be stated that there is a difference in the students' critical thinking results due to the difference in the learning models used. It can also be concluded that project-based learning positively influences students' critical thinking abilities.

The data from the research presented above indicates a significant influence of using the Project-Based Learning model on stu-

Table 1. Students Critical Thinking Score

Class	Critical Thinking Score (Pretest)	Critical Thinking Score (Posttest)	Difference
Experiment	58.64	79.67	21.04
Control	64	74.48	10.48

Source: Processed Primary Data, 2023

Table 2. Analysis of the Influence of the Project-Based Learning Model on Students' Critical Thinking Ability

Source	F-count	Sig. (2-tailed)	Criteria	Test Decision
PBL Learning Model	9.752	0.007	< 0.05	H ₀ rejected

Source: Processed Primary Data, 2023

dents' critical thinking abilities. This is in line with the findings of the research conducted by Oktavianto (2017) that Project-Based Learning is capable of improving thinking skills. Students' thinking abilities can improve because the learning syntax in Project-Based Learning includes activities that train them to think. As students' thinking processes become trained and honed, their critical thinking abilities increase.

The research results show improved critical thinking skills after implementing project-based learning. It is important to note that critical thinking is a metacognitive skill (Flavel, 1979). This supports the opinion of Grant (2001) that project-based learning can be used to enhance students' metacognition. With the increase in metacognitive skills, students' problem-solving abilities improve logically and reflectively, as these abilities are integral to critical thinking (Gotoh, 2016).

Students who enhance their problem-solving ability logically and reflectively are incredibly advantageous when encountering challenges. Additionally, cooperative learning enables students to discuss problems together. This indicates that the teacher has created a conducive learning environment. The learning environment in project-based learning aligns with the expectations of Sumarmi (2012), which is an authentic learning environment. Students find learning easier in such an environment, and project-based learning helps realize this (Pan & Allison, 2010).

This means that teachers can address the challenges posed by Gecit & Akarsu (2017) that critical thinking skills can be developed when teachers can plan, create, and organize the learning environment appropriately. The enjoyable learning environment created through project-based learning can enhance elements that support the achievement of geography learning objectives. This is as stated by Oktavianto (2017), which includes the following points: (1) students are challenged to solve real-world problems; (2) students be-

come more active in learning; (3) students' performance during project implementation becomes more organized; (4) students have autonomy in project completion; and (5) students are enthusiastic about competing to produce the best project (Oktavianto, 2017).

These five factors contribute to the increase in students' critical thinking abilities after implementing project-based learning. Similar findings were reported in another study by McInerney and Fink (2003), which stated that project-based learning can enhance critical thinking skills. Another factor that improves critical thinking after project-based learning is increased motivation and collaboration among students during the learning process. This is supported by the research findings of Blumenfeld et al. (1991), which emphasized that project-based learning helps enhance students' motivation. The collaborative nature of the student's work also plays a role in improving their critical thinking abilities, as mentioned by Anderson, Howe, Soden, Halliday, & Low (2001).

The research findings suggest an improvement in students' critical thinking abilities after undergoing project-based learning in geography. This reinforces the viewpoint of Sharma and Elbow (2000) that geography is an ideal subject for developing students' critical thinking skills. It is important to note that project-based learning can enhance critical thinking through contextualized content (Kurubacak, 2007).

CONCLUSION

Based on the discussion presented above, the following conclusions can be drawn. First, project-based learning significantly influences enhancing students' critical thinking abilities. This occurs because students have an increasingly active role in learning, and their motivation also improves. Second, adequately implemented project-based learning can create a conducive learning environment. A good

learning environment fosters student interaction, encouraging collaboration in finding solutions to problems. Third, project-based learning can be used to achieve learning objectives.

Based on the conclusions presented, the researcher suggests the following recommendations. First, teachers can utilize project-based learning to enhance students' thinking abilities. Second, teachers should master the syntax of project-based learning to ensure proper implementation of the approach. Third, geography teachers can leverage project-based learning to attain learning objectives.

REFERENCES

- Anderson, T., Howe, C., Soden, R., Halliday, J., & Low, J. (2001). Peer Interaction and The Learning of Critical Thinking Skills in Further Education Students. *Instructional Science*, 29(1), 1–32.
- Angel, B. F., Duffey, M., & Belyea, M. (2000). An evidence-based project for evaluating strategies to improve knowledge acquisition and critical-thinking performance in nursing students. *Journal of Nursing Education*, 39(5), 219–228.
- Bell, S. (2010). Project-Based Learning for the 21st Century: Skills for the future. *The Clearing House*, 83(2), 39–43.
- Blumenfeld, P. C., Soloway, E., Marx, R. W., Krajcik, J. S., Guzdial, M., & Palincsar, A. (1991). Motivating project-based Learning: Sustaining the doing, supporting the learning. *Educational psychologist*, 26(3–4), 369–398.
- Care, E., Griffin, P., & Wilson, M. (2017). *Assessment and Teaching of 21st Century Skills: Research and Applications* (1st ed. 2018). New York, NY: Springer International Publishing AG.
- DeFillippi, R. J. (2001). *Introduction: Project-based Learning, reflective practices and Learning*. Sage Publications Sage CA: Thousand Oaks, CA.
- Flavell, J. H. (1979). Metacognition and Cognitive Monitoring: A New Area of Cognitive-Developmental Inquiry. *American Psychologist*, 34(10), 906–11.
- Geçit, Y., & Akarsu, A. H. (2017). Critical Thinking Tendencies of Geography Teacher Candidates in Turkey. *Universal Journal of Educational Research*, 5(8), 1362–1371.
- Gotoh, Y. (2016). *Development of Critical Thinking with Metacognitive Regulation*. *International Association for the Development of the Information Society*. Accessed from <https://eric.ed.gov/?id=ED571408>
- Grant, M. M. (2002). Getting a grip on project-based Learning: Theory, cases and recommendations. *Meridian: A middle school computer technologies journal*, 5(1), 83.
- Greenwood Professional Guides in School Librarianship. Greenwood Press, 88 Post Road West, PO Box 5007, Westport, CT 06881-5007 (\$39).
- Krajcik, J. S., & Blumenfeld, P. C. (2006). *Project-based Learning*. na.
- Kurubacak, G. (2007). Building knowledge networks through project-based online Learning: A study of developing critical thinking skills via reusable learning objects. *Computers in human behavior*, 23(6), 2668–2695.
- Ismail, R. (2018). Perbandingan keefektifan pembelajaran berbasis proyek dan pembelajaran berbasis masalah ditinjau dari ketercapaian tujuan pembelajaran. *Pythagoras: Jurnal Pendidikan Matematika*, 13(2), 181–188. <https://doi.org/10.21831/pg.v13i2.23595>
- Kristanti, Y. D., Subiki, S., & Handayani, R. D. (2017). Model Pembelajaran Berbasis Proyek (Project Based Learning Model) Pada Pembelajaran Fisika Disma 1). *Jurnal Pembelajaran FISika*, 5(2), 122–128.
- Krueger, R. F., & Kling, K. C. (2014). Self-report. *Encyclopedia of Psychology*, Vol. 7., 220–224. <https://doi.org/10.1037/10522-098>
- Kurniawati, E., Arafat, Y., & Puspita, Y. (2020). Peran Kepemimpinan Kepala Sekolah dalam Meningkatkan Mutu Pendidikan melalui Manajemen Berbasis Sekolah. *Journal of Education Research*, 1(2), 134–137. <https://doi.org/10.37985/joe.v1i2.12>
- Norhikmah, N., Rizky, N. F., Puspita, D., & Sau-

- dah, S. (2022). Inovasi Pembelajaran di-masa Pandemi: Implementasi Pembelajaran berbasis Proyek Pendekatan Destinasi Ima-jinasi. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 6(5), 3901–3910. <https://doi.org/10.31004/obsesi.v6i5.1886>
- Nugraha, D. (2023). Pengaruh metode simulasi demonstrasi terhadap hasil belajar maha-siswa. *Jurnal Pena Edukasi*, 10(1), 1–8.
- Nugraha, D., Ginanjar, H., & Rolina, R. (2018). Problem Solving Ability and Problem Based Learning. *Journal of Innovative Math-ematics Learning*, 1(3), 239. <https://doi.org/10.22460/jiml.v1i3.p239-243>
- Rati, N. W., Kusmaryatni, N., & Rediani, N. (2017). Model pembelajaran berbasis proyek, kreati-vasitas dan hasil belajar mahasiswa [Project-based learning model, creativity and student learning outcomes]. *JPI : Jurnal Pendidikan Indonesia*, 6(1), 60–71. <https://ejournal.un-diksha.ac.id/index.php/JPI/index>
- Saputra, H. (2020). *Kemampuan Berfikir Kritis Matematis. Perpustakaan IAI Agus Salim Metro Lampung*, 2(April), 1–7.
- Sholikhah, A. (2017). Statistik Deskriptif Dalam Penelitian Kualitatif. *KOMUNIKA: Jurnal Dakwah dan Komunikasi*, 10(2), 342–362. <https://doi.org/10.24090/komunika.v10i2.953>
- Siti Zubaidah. (2010). Berfikir Kritis : Kemam-puan Berpikir Tingkat Tinggi Yang dapat Dikembangkan Melalui Pembelajaran Sains. *Seminar Nasional Sains 2010 Dengan Tema “Optimalisasi Sains Untuk Memberday-akan Manusia,”* 16(January 2010), 1–14. https://www.researchgate.net/profile/Siti-Zubaidah-7/publication/318040409_Berpikir_Kritis_Kemampuan_Berpikir_Tingkat_Tinggi_yang_Dapat_Dikem-bangkan_melalui_Pembelajaran_Sains/links/59564c650f7e9b591cda994b/Ber-pikir-Kritis-Kemampuan-Berpikir-Tingkat-Tingg
- Susilana, R. (2015). Metode Penelitian Sosial Kuantitatif. *Journal of Visual Languages & Computing*, 11(3), 287–301.
- Widiyatmoko, A., & Pamelasari, S. D. (2012). Pembelajaran berbasis proyek untuk mengembangkan ALAT peraga IPA dengan memanfaatkan bahan bekas pakai. *Ju-rnal Pendidikan IPA Indonesia*, 1(1), 51–56. <https://doi.org/10.15294/.v1i1.2013>
- Wulandari, F. E. (2016). Pengaruh Model Pembe-lajaran Berbasis Proyek untuk Melatihkan Keterampilan Proses Mahasiswa. *Pedagogia : Jurnal Pendidikan*, 5(2), 247–254. <https://doi.org/10.21070/pedagogia.v5i2.257>