Improving Critical Thinking Skills Through the Development of Language Literacy Among University Students

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Abstract. This article examines how to enhance critical thinking through the development of language literacy among students. Referring to PISA, the level of critical thinking skills among Indonesia's younger generation is still lagging behind that of OECD countries. Critical thinking skills are very important for students to possess so that they can compete in the challenging global era. This research uses a descriptive qualitative approach from various relevant articles from the Google Scholar database. The findings indicate that literacy plays an important role in enhancing students' critical thinking skills. Reading and writing activities can enhance the ability to process information. The culture of literacy through the use of various reference sources, text analysis, and question formulation can enhance critical thinking skills. The use of teaching materials based on integrated interconnection can train students to effectively analyze, evaluate, and conclude information. The results of this study emphasize the need for the development of language literacy in higher education to enrich students' knowledge and critical thinking skills.

Keywords: language literacy,critical thinking skills

1 Introduction

Critical thinking abilities are essential for individuals to make sound judgments and effectively address the challenges they encounter. Critical thinking skills enable individuals to see a situation from various aspects, to be able to digest information carefully, and to make decisions rationally. Critical thinking skills can also prevent someone from thinking narrowly or being overly emotional. Consequently, it is essential for each people to possess critical thinking abilities to navigate their everyday life effectively. Many factors influence thinking skills, including literacy skills.

According to KBBI, literacy includes the ability to write and read, knowledge or abilities in a certain profession or activity, and the capacity to process information and knowledge for life skills (KBBI). Literacy, according to UNESCO (2004), is the ability to identify, understand, interpret, create, communicate, and compute using written and printed materials pertinent to a variety of contexts. The capacity to comprehend, interpret, and use language in a variety of circumstances in order to accomplish certain objectives is known as language literacy.. Language literacy includes reading, writing, speaking, and listening abilities essential for successful and efficient communication. Language literacy is not only about the technical ability

ICONSEIR 2024, November 28, Medan, Indonesia

DOI 10.4108/eai.28-11-2024.2355430

to understand and use words but also about understanding the social and cultural context in which language is used.

According to UNESCO data in 2021, Indonesia's literacy rate reached around 95%, still lagging behind Singapore's 97%. While the highest literacy rate in Indonesia is West Java, which is categorized as very high, it is not directly proportional to the implementation carried out [1]. The level of language literacy has an impact on developing critical thinking skills. Reading and writing activities can obtain information and knowledge and use it to solve problems [2].

In addition to literacy, critical thinking skills are also competencies that must be possessed by the young generation in the 21st century. However, various existing studies show that students' critical thinking skills are generally still low and vary greatly. Research findings on Unnes mathematics students indicate that the highest degree of critical thinking abilities demonstrated in solving mathematical problems is only degree 3 (critical), with no pupils achieving Level 4 (extremely critical). [3], In the material on effort and energy, the level of students' critical thinking skills is still very low [4]. As many as 60% of students are in the high critical thinking category [5]. Furthermore, there are differences in critical thinking skills between undergraduate and postgraduate students. Undergraduate students complete more concise assignments and think more logically, while postgraduate students complete longer assignments, are more thorough and careful, and have better verbal skills. [6].

Critical thinking skills need to be developed because, with good critical thinking skills, individuals can identify and evaluate arguments objectively so that they are able to select which information is valid and invalid. More importantly, critical thinking skills also help someone make more effective and efficient decisions and minimize errors in decision-making. Thus, critical thinking skills are very important in a life full of challenges and complexities.

This article aims to address the many study findings about the elements that affect students' critical thinking abilities. Recent studies have emphasized the value of critical thinking abilities and how they relate to language acquisition. ESL students' critical thinking abilities and language fluency are enhanced when they are taught literary texts effectively [7]. Pre-service language teachers' critical reading, interpreting, analyzing, inferencing, assessing, explaining, and self-regulation abilities have also been demonstrated to be markedly enhanced by the critical literacy method [8]. Other research has demonstrated that applying critical thinking to enhance language proficiency makes learning English more successful [9]. Short instruction in analytical attitudes and critical thinking can raise students' awareness and promote more frequent critical inquiries in language learning assignments.

Current research, some consider critical thinking needs to be integrated into language learning because it increases the effectiveness of achieving learning outcomes, but not a few see literacy as determining critical thinking skills. Like research [2] explaining reading and writing activities, a person can process information, analyze problems, and make rational decisions. While other research sees that the culture of literacy from various reference sources can encourage students' ability to solve problems [11]. Currently, Literacy culture is very important in preparing students for the Industrial revolution 4.0 [12]. The positive correlation between scientific literacy and critical thinking abilities is also explained by other research, which shows that critical thinking abilities account for 19.9% of literacy [13]. However, due to their relatively low levels, high school pupils in East Jakarta still need to improve their critical thinking and scientific literacy [13].

Another factor that is the topic of discussion by researchers is the impact of the use of teaching materials on improving critical thinking. Suparni's research [14]. Shows that integrated interconnection-based teaching materials can effectively improve students' critical thinking

skills. Then, the development of interactive electronic textbooks that integrate Islamic values also has a positive effect on students' mathematical connection abilities.[15]. Furthermore, problem-based teaching materials that integrate mathematics have been shown to be effective in improving critical thinking skills in prospective elementary school teachers.[16]. All of this research argues that integrated teaching materials can help students analyze, evaluate, and draw conclusions effective.

The purpose of this article is to investigate the connection between language literacy and critical thinking abilities, as well as the variables that might affect critical thinking. And to determine practical methods for enhancing both abilities. With a better understanding of this relationship, it is hoped that it can make a positive contribution to improving language literacy and critical thinking skills in society as a whole. This study will involve participants from various backgrounds and ages to gain a comprehensive understanding. Through careful data analysis, it is hoped that the results of this study can provide useful guidance for educators and policy makers in developing effective learning strategies. Thus, it is hoped that society will be better able to face various complex challenges and problems with better critical thinking skills.

2 Research Method

Qualitative essays based on primary literature on language literacy, higher order thinking, and critical thinking are used in this study. The process of doing a literature review consists of picking a review subject, looking for literature, gathering, reading, and evaluating literature, writing a review; citations. Data-based journal search using Google School. The keywords used to search for relevant articles are "Language literacy", "critical thinking", "problem solving", "interconnected teaching materials". Article search using the help of Artificial Intelligent elicit, and perplexity.

3 Results and Discussion

3.1 The Role of Language Literacy in Learning Outcomes

Every person needs to become proficient in language literacy. The capacity to comprehend, evaluate, and apply preexisting writings is known as language literacy. A key factor in raising the standard of education and community competitiveness is language literacy. Gaining literacy proficiency can help you succeed and achieve more.[17]. Furthermore, literacy activities affect students' interest in reading and writing, although there are still several obstacles, such as inadequate facilities and infrastructure and less interesting teaching methods [18]. In today's challenging digital era, literacy skills are increasingly important for solving problems, analyzing, and understanding information [19]. Therefore, it is essential to use literacy in Indonesian instruction as it may enhance students' comprehension and learning results, which in turn affects raising the standard of instruction.[20]. Activities Reading, writing, and other literacy-related activities might enhance one's capacity for information analysis, argument evaluation, and decision-making. Therefore, the government, educational institutions, families, and students themselves must all support literacy-improving initiatives.[21].

3.2 The Role of Learning Models in Critical Thinking Skills

Factors that influence critical thinking skills have received much attention. Problem based learning approaches may facilitate the enhancement of the abilities.[22]. Another study that explains cooperative learning, such as Jigsaw, has demonstrated a significant positive effect on students' critical thingking skills. Then, a study of a type of quasi-experimental Jigsaw model in grade 9 students also had an impact on improving critical thinking skills. [23]. Then, the Talking Stick-type collaborative learning model has been proven to improve student's critical thinking skills. During mathematics learning. [24]. Next, the use of problem-based learning models can improve students' critical thinking. [25]). The findings of several studies recommend the importance of implementing various learning methods or models that are in alignment with the development of student's critical thingking capacities.

3.3 The Role of Learning Media, Teaching Materials on Critical Thinking Skills

Critical thinking abilities are impacted by media in addition to the learning paradigm or approach. For example, the research results incate that question prompt scaffholding base e-LKPD is valid, practical, and efficient in enhancing in science learning for student' critical thingking skilss. [26]. Furthermore, using e-LKPD is effective in increasing the completion of cognitive and critical thinking learning outcomes [27]. Then, for basic physics learning tools based on critical thinking skills, the Moodle application is valid, practical, and effective for use in basic physics learning [28]. Critical thinking training guidebooks with wayang golek media and DVDs containing wayang golek videos can be used to train students' critical thinking.[29].

Recent research highlights the importance of strengthening civic skills as part of critical thinking skills to prevent the FOMO (Fear of Missing Out) phenomenon among students; these skills can make students more critical in assessing information on social media and managing its negative impacts. [30]. E-teaching materials based on problem-based learning integrated with ethnoscience that have been developed are valid and suitable for use in learning [31].

Research shows that using effective questioning techniques and guiding students' critical thinking processes can foster critical thinking skills [32]. A quasi-experimental study found that PBL significantly improved students' critical thinking abilities compared to conventional methods, with PBL students scoring an average of 76.82 versus 59.86 for the control group [33]. Another study examining Students with FI cognitive style have better inference, assumption, deduction, and interpretation skills than students with FD cognitive style [34]. Furthermore, cooperative learning strategies, such as Jigsaw, have been shown to enhance critical thinking abilities student. A quasi-experimental study conducted with 9th-grade students revealed a significant increase in critical thinking skills when employing the Jigsaw method in comparison to a traditional pedagogical approach [23]. These findings highlight the importance of diverse teaching methods and understanding individual thinking styles in developing critical thinking skills among students.

4 Conclusion

Human cognitive capacity to understand and utilization language in a multiplicity situation to achieve certain goals is known as language literacy. These abilities are necessary for clear and successful communication. These skills are indispensable for effective and efficient communication. Critical thinking skills are very important for the younger generation to develop. Critical thinking skills can be developed through language literacy. Good literacy allows a person to access information more easily, analyze it critically, and convey opinions or arguments clearly and persuasively. This is useful not only in everyday life but also in the academic and professional world. Therefore, efforts to improve language literacy need to be continuously encouraged and supported by all parties. However, it is also important to remember that language literacy is not the only factor that determines a person's ability to think critically and analytically. There are various other factors, such as experience, knowledge, and logical abilities, that also play an important role in developing these abilities. Attempts to cultivate critical thinking abilities include applying learning methods/models such as PBL PBL and using digital media. The use of integrated teaching materials with various technologies in learning is also a way to improve critical thinking. This article recommends that language literacy needs to be improved to enhance students' thinking skills.

References

[1] D. Nudiati, "Literasi Sebagai Kecakapan Hidup Abad 21 Pada Mahasiswa," Indones. J. Learn. Educ. Couns., vol. 3, no. 1, pp. 34–40, 2020, doi: 10.31960/ijolec.v3i1.561..

[2] O. Oktariani and E. Ekadiansyah, "Peran literasi dalam pengembangan kemampuan berpikir kritis," J. Penelit. Pendidikan, Psikol. Dan Kesehat., vol. 1, no. 1, pp. 23–33, 2020.

[3] A. W. Kurniasih, "Penjenjangan Kemampuan Berpikir Kritis Mahasiswa Prodi Pendidikan Matematika FMIPA UNNES dalam Menyelesaikan Masalah Matematika," J. Pendidik., no. November, pp. 485–486, 2010, [Online]. Available: http://karya-ilmiah.um.ac.id/index.php/disertasi/article/view/8078

[4] S. Kassiavera, A. Suparmi, C. Cari, and S. Sukarmin, "Survei Keterampilan Berpikir Kritis Mahasiswa pada Materi Usaha dan Energi," Pros. SNFA (Seminar Nas. Fis. dan Apl., vol. 4, p. 162, 2019, doi: 10.20961/prosidingsnfa.v4i0.35928.

[5] F. N. Amalia and N. L. Nadya, "Hubungan Kemampuan Membaca Kritis dengan Kemampuan Berpikir Kritis Mahasiswa," J. Didact. Bhs. Indones., vol. 1, no. 2, pp. 31–38, 2020.

[6] P. Pathuddin, S. Sukayasa, . B., and N. Puspita, "A Critical Thinking Profile Based on Sex Differences: A Case Study on High School Students in Palu City, Indonesia," Int. J. Relig., vol. 5, no. 10, pp. 1935–1951, 2024, doi: 10.61707/7grmnb30.

[7] N. A. Shukri and J. Mukundan, "A review on developing critical thinking skills through literary texts," Adv. Lang. Lit. Stud., vol. 6, no. 2, pp. 4–9, 2015.

[8] S. Sultan, A. Rof\iudd\in, N. Nurhad\i, and E. T. Pr\iyatn\i, "The effect of the critical literacy approach on pre-service language teachers' critical reading skills," Eurasian J. Educ. Res., vol. 17, no. 71, pp. 159–174, 2017.

[9] A. Gandimathi and N. Zarei, "The impact of critical thinking on learning English language," Asian J. Soc. Sci. Res., vol. 1, no. 2, pp. 25–35, 2018.

[10] P. I. Djiwandono, "Critical thinking skills for language students," Teflin J., vol. 24, no. 1, p. 32, 2013.

[11] A. Rohman, “Literasi dalam meningkatkan kemampuan berpikir kritis di era disrupsi,” EUNOIA (Jurnal Pendidik. Bhs. Indones., vol. 2, no. 1, pp. 40–47, 2022.

[12] A. A. Mardliyah, “Budaya literasi sebagai upaya peningkatan keterampilan berpikir kritis di era industri revolusi 4.0,” in Prosiding SNP2M (Seminar Nasional Penelitian dan Pengabdian Masyarakat) UNIM, 2019, no. 1, pp. 171–176.

[13] A. Suryanda, E. P. Azrai, M. Nuramadhan, and I. Z. Ichsan, “Analogy and critical thinking skills: Implementation learning strategy in biodiversity and environment topic,” Univers. J. Educ. Res., vol. 8, no. 4A, pp. 45–50, 2020.

[14] S. Suparni, “Pengembangan bahan ajar berbasis integrasi interkoneksi untuk memfasilitasi peningkatan kemampuan berpikir kritis mahasiswa,” J. Deriv. J. Mat. dan Pendidik. Mat., vol. 2, no. 2, pp. 1–19, 2015.

[15] N. Supriadi, “Mengembangkan kemampuan koneksi matematis melalui buku ajar elektronik interaktif (BAEI) yang terintegrasi nilai-nilai keislaman,” Al-Jabar J. Pendidik. Mat., vol. 6, no. 1, pp. 63–74, 2015.

[16] I. S. Annisa and Y. Fitria, “Pengembangan bahan ajar klasifikasi materi terintegrasi matematika berbasis masalah untuk meningkatkan kemampuan berpikir kritis mahasiswa PGSD,” J. Basicedu, vol. 5, no. 4, pp. 1754–1765, 2021.

[17] P. O. Irianto and L. Y. Febrianti, “Pentingnya penguasaan literasi bagi generasi muda dalam menghadapi MEA,” in Proceedings Education and Language International Conference, 2017, vol. 1, no. 1.

[18] H. D. Syafutri, M. D. Saputra, and others, “Peran Literasi Bahasa dalam Meningkatkan Minat Baca dan Menulis Peserta Didik,” J. Inov. EDUKASI, vol. 4, no. 1, pp. 51–63, 2022.

[19] A. Sentoso, O. Octavia, A. Wulandari, J. Jacky, S. Kurniawan, and S. Thieng, “Pentingnya Literasi Dalam Era Digital Bagi Masa Depan Bangsa,” in National Conference for Community Service Project (NaCosPro), 2021, vol. 3, no. 1, pp. 767–776.

[20] R. Wahdiniwaty and D. A. Rustam, “Patriarchy as a Barrier to Women Entrepreneurs in Indonesia,” in IOP Conference Series: Materials Science and Engineering, 2019, vol. 662, no. 3, p. 32042.

[21] D. Darwanto, A. M. Putri, and others, “Penguatan literasi, numerasi, dan adaptasi teknologi pada pembelajaran di sekolah:(sebuah Upaya Menghadapi Era Digital dan Disrupsi),” Eksponen, vol. 11, no. 2, pp. 25–35, 2021.

[22] E. Rahmawati, “Application of the Problem Based Learning Model to Improve Critical Thinking Skills for Grade IV Elementary School Students,” in Social, Humanities, and Educational Studies (SHEs): Conference Series, 2021, vol. 3, no. 4, pp. 104–110.

[23] W. Anggraini, “Strategi pembelajaran kooperatif tipe jigsaw: pengaruhnya terhadap kemampuan berpikir kritis siswa,” Indones. J. Sci. Math. Educ., vol. 2, no. 1, pp. 98–106, 2019.

[24] M. B. U. B. Arifin and D. N. Laili, “Pengaruh Model Pembelajaran Kooperatif Tipe Talking Stick Terhadap Kemampuan Berpikir Kritis Siswa Kelas 4 Pada Mata Pelajaran Matematika,” Pendas J. Ilm. Pendidik. Dasar, vol. 7, no. 2, pp. 1031–1042, 2022.

[25] N. ilmiani Ilmi, S. C. Sida, and others, “Pengaruh Penerapan Model Pembelajaran Berbasis Masalah terhadap Peningkatan Berpikir Kritis dan Motivasi Intrinsik Siswa pada Pembelajaran IPS SD Negeri Samata,” Cendekiawan, vol. 4, no. 2, pp. 117–127, 2022.

[26] A. W. Rohma, A. S. Budiarso, and S. Supeno, “Pengembangan E-LKPD Berbasis Question Prompt Scaffolding untuk Meningkatkan Berpikir Kritis Siswa SMP pada Pembelajaran IPA,” J. Paedagogy, vol. 10, no. 3, pp. 787–797, 2023.

[27] L. R. Ningtyas and Y. S. Rahayu, “Pengembangan e-LKPD interaktif pada materi pertumbuhan dan perkembangan tumbuhan untuk melatihkan keterampilan berpikir kritis peserta didik kelas XII,” Berk. Ilm. Pendidik. Biol., vol. 11, no. 3, pp. 527–536, 2022.

[28] Z. Zainudin and R. Wijayanti, “Pengembangan Perangkat Pembelajaran Fisika Pada Masa Pandemi Covid-19 Berbasis Keterampilan Berpikir Kritis Menggunakan Aplikasi Moodle,” EDUPROXIMA (JURNAL Ilm. Pendidik. IPA), vol. 3, no. 1, pp. 43–49, 2021.

[29] A. S. Setyasri, “Pengembangan panduan pelatihan berpikir kritis menggunakan media wayang golek untuk siswa SMP,” Universitas Negeri Malang, 2019.

[30] G. E. Purba, N. M. B. Sembiring, R. O. Purba, T. L. Simanullang, and A. Batubara, “Penguatan Civic Skill: Sebagai Kemampuan Berpikir Kritis Siswa Untuk Mencegah Fomo yang Menjadi Trend Baru Dalam Bermedia Sosial,” J. Educ. Res. Hum., pp. 1–8, 2024.

[31] S. N. Amalina, M. Muhlis, and A. Ramdani, “Pengembangan E-Bahan Ajar Berbasis Problem Based Learning Terintegrasi Etnosains,” J. Ilm. Profesi Pendidik., vol. 9, no. 4, pp. 2518–2524, 2024.

[32] E. Ebosele Peter, “Critical thinking: Essence for teaching mathematics and mathematics problem solving skills,” African J. Math. Comput. Sci. Res., vol. 5, no. 3, 2012.

[33] A. da Costa Jeronimo, J. Sutarto, and Y. L. Sukestiyarno, “ENHANCEMENT STUDENT CRITICAL THINKING SKILLS AND LEARNING OUTCOMES USING PROBLEM-BASED LEARNING,” 2020.

[34] A. Agoestanto, Y. L. Sukestiyarno, and others, “Analysis of mathematics critical thinking students in junior high school based on cognitive style,” in Journal of Physics: Conference Series, 2017, vol. 824, no. 1, p. 12052.

[35] UNESCO (2004) ‘The Plurality of Literacy and its Implications for Policies and Programs’, Position Paper, 53(9), pp. 1689–1699.