

DEVELOPING CRITICAL THINKING SKILLS OF PRIMARY SCHOOL STUDENTS THROUGH INDEPENDENT CURRICULUM LEARNING

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Abstract

The development of critical thinking skills among elementary school students plays an important role in preparing the younger generation to face the challenges of the fourth industrial revolution era. The method used is a literature study on this theme. The results of the study revealed that Merdeka Belajar Curriculum provides ample space to improve students' critical thinking skills through flexible learning, focusing on students, and closely related to context. Effective strategies include project-based learning, collaborative problem solving, and technology integration in the learning process. However, the research also identified challenges such as the need for intense enrichment of teacher competencies and adaptation of assessment methods to appropriately measure critical thinking skills. In conclusion, Merdeka Belajar Curriculum has great potential to improve the critical thinking skills of primary school students, but this achievement is highly dependent on careful implementation along with comprehensive support from all education stakeholders. Recommendations for further studies include long-term studies on the long-term impact of this curriculum on the development of students' critical thinking skills and the exploration of new assessment models that are in line with the objectives of the Merdeka Belajar Curriculum.

Keywords: Critical Thinking, Primary School, Merdeka Belajar Curriculum.

Introduction

In the era of globalisation and rapid technological advances, critical thinking skills are one of the key competencies that must be possessed by every individual, including elementary school students (Sitopu et al., 2024). Critical thinking is a cognitive process that involves analysing, evaluating and synthesising information systematically and reflectively. Critical thinking includes the ability to identify problems, gather and assess relevant information, analyse arguments, recognise assumptions and biases, consider multiple points of view, draw logical conclusions, and evaluate the implications and

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consequences of a decision or action (Cleovoulou, 2021). This process involves the use of higher-order cognitive skills such as interpretation, analysis, evaluation, inference, explanation, and self-regulation. In other words, critical thinking is the ability to think clearly and rationally about what to believe or do, which is essential in dealing with the complexity and uncertainty of the modern world (Purba, 2022).

The ability to critically analyse information, solve complex problems, and make informed decisions is becoming increasingly important in facing the challenges of the 21st century. However, reality shows that Indonesian students' critical thinking skills still need to be improved (MY et al., 2023). This is reflected in the 2018 Programme for International Student Assessment (PISA) results, where Indonesia ranked 72 out of 78 countries in reading, mathematics and science. These results indicate that Indonesian students are still weak in terms of analysis, evaluation, and application of knowledge in real-life contexts (Harianja et al., 2023).

Recognising the importance of developing critical thinking skills from an early age, the Ministry of Education and Culture of the Republic of Indonesia initiated the Merdeka Belajar Curriculum. This curriculum is designed to provide flexibility and autonomy to schools and teachers in developing learning that focuses on developing student competencies, including critical thinking skills (Rahmawati, 2021).

Merdeka Belajar Curriculum is an educational concept introduced by the Ministry of Education and Culture of the Republic of Indonesia as part of the Merdeka Belajar programme. This curriculum is designed to provide greater flexibility and autonomy to schools, teachers, and students in managing the learning process (Guna et al., 2024); (Hairiyanto et al., 2024). The main focus is on developing student competencies through learning that is more contextual, collaborative, and problem-solving orientated. Merdeka Belajar curriculum emphasises the development of 21st century skills such as critical thinking, creativity, communication, and collaboration, and prioritises character development and literacy (Fiteriadi et al., 2024). In its implementation, this curriculum reduces the administrative burden on teachers, provides freedom in choosing teaching methods that suit student needs, and encourages learning that is more meaningful and relevant to real life (Fawait et al., 2024); (Syakhrani & Aslan, 2024).

Merdeka Belajar Curriculum offers a new paradigm in Indonesian education, emphasising student-centred learning, project development, and problem solving. This approach is expected to encourage students to be more active in the learning process and develop higher-order thinking skills, including critical thinking (Suryana et al., 2022).

However, the implementation of Merdeka Belajar Curriculum in the context of developing critical thinking skills of elementary school students still requires further study.

Based on this background, this study aims to comprehensively examine how the Merdeka Belajar Curriculum can be utilised as a means to develop the critical thinking skills of elementary school students. Through a literature review, this research is

expected to provide insights and practical recommendations for educators, policy makers, and other stakeholders in optimising the implementation of Merdeka Belajar Curriculum to improve the critical thinking skills of primary school students in Indonesia.

Research Methods

This research uses the literature research method, which focuses on collecting and analysing information from various existing written sources. (Abdussamad, 2022); (Wekke, 2020).

Results and Discussion

Critical Thinking Skills

Critical thinking is a mental process that involves in-depth analysis, objective evaluation, and reflection on information, arguments, or situations in a rational manner. It involves the ability to identify problems, gather relevant data, assess relevant evidence, analyse arguments from multiple sides, recognise implicit assumptions and one-sided views, draw logical conclusions, and consider the implications and consequences of different points of view (Nurmala et al., 2023). Critical thinking also involves skills in questioning, investigating, and considering other options before making a decision or taking action. This process aims to improve the quality of a person's thinking patterns, enabling them to make better judgements, solve problems effectively, and make more informed decisions in various aspects of life (Ningrum & Murti, 2023).

Critical thinking skills consist of several core components that are interrelated and complement each other. These components include interpretation to understand and convey the meaning of various situations or data, analysis to identify relationships between concepts, statements, or other forms of representation, evaluation to assess the validity of statements or arguments, inference to identify and draw important elements to conclude something reasonably, explanation to explain one's thinking process and provide justification through strong arguments, and self-regulation, which involves the ability to monitor one's own cognitive activities, the elements used in the process, and the results obtained (Nuraini et al., 2020). In addition, critical thinking skills also include the ability to ask relevant questions, gather relevant information, acknowledge assumptions and viewpoints, think openly but sceptically, and communicate ideas effectively. All these components support each other to enable one to make careful judgements and make informed decisions (Santos-Meneses et al., 2023).

Critical thinking is an essential skill for primary school students as it provides a strong foundation for their learning and cognitive development. At this age, children

begin to develop the ability to understand abstract concepts, analyse information, and draw simple conclusions (Fajari, 2021). By teaching and encouraging critical thinking early on, we help students develop a mindset that enables them to solve problems, make informed decisions, and better understand their surroundings. This skill also helps them understand school subjects deeply, not just memorising facts, but also understanding why and how they work (Hasyim, 2024).

Furthermore, critical thinking prepares primary school students for future challenges, both in further education and everyday life. In an information age full of fake news and manipulation, the ability to critically evaluate information is becoming increasingly important (Sari et al., 2021). By developing critical thinking skills early on, students will be better prepared for the complexity of the modern world, able to distinguish facts from opinions, and make decisions based on in-depth analyses. In addition, critical thinking also encourages creativity, innovation, and the ability to see problems from multiple angles, all of which are valuable skills in their future personal and professional lives (Hasyim et al., 2024).

Independent Learning Curriculum

Merdeka Belajar Curriculum is an educational reform introduced by the Ministry of Education and Culture in response to the demands of the 21st century. The core concept of this curriculum gives greater autonomy to educational institutions, teachers and learners in the learning process (Muharrom et al., 2023). The underlying principle is 'free to learn', which means freeing educators and students from excessive administrative requirements, rigid standardisation and a 'one size fits all' approach. The curriculum emphasises the development of students' holistic competencies, covering cognitive, affective and psychomotor aspects, and focuses on deep understanding of the material rather than simply memorising information (Aslan, 2016).

The main principles of Merdeka Belajar Curriculum include: personalisation of learning according to students' interests and talents; project- and problem-based learning to improve critical thinking and creativity; integration of technology in the teaching-learning process; strengthening character education and social-emotional skills; and assessment that is more comprehensive and focuses on the process, not just the end result (Aslan, 2023). The curriculum also encourages collaboration between schools, parents and communities in supporting the education process. With this approach, students are expected to develop the competencies needed to face future challenges, such as critical thinking, creativity, communication, and collaboration, while maintaining Indonesian values and cultural identity (Astuti et al., 2023).

Merdeka Belajar Curriculum has the main objective of creating a more flexible, innovative, and student-centred education system. These goals include developing students' potential holistically, improving the quality of learning, and preparing Indonesia's young generation to face the global challenges of the 21st century (Aslan &

Wahyudin, 2020). This curriculum aims to reduce the administrative burden on teachers, provide more room for creativity and innovation in teaching, and encourage students to become independent and critical learners. In addition, Merdeka Belajar Curriculum also aims to strengthen character education, improve literacy and numeracy, and develop digital skills needed in the modern era (Sari et al., 2021).

The main characteristics of the Merdeka Learning Curriculum include several important aspects. First, flexibility in implementation, where schools and teachers are given the freedom to adjust the curriculum to local contexts and student needs. Secondly, the focus on active and project-based learning, which encourages students to be directly involved in the learning and subject-matter analysis. Third, the reduction of curriculum content that is too dense, with an emphasis on strengthening ethical core competencies (Barokah, 2021). Fourth, technology integration in learning, which prepares students for the digital era. Fifth, more comprehensive and formative assessment, focusing on the learning process and overall development. Finally, strengthening collaboration between schools, families, and communities in supporting children's education (Widayanti & Juhji, 2023).

The implementation of the Merdeka Learning Curriculum in primary schools (SD) brings significant changes in learning and teaching approaches. One of the main aspects is the implementation of integrated thematic learning which is more flexible. Elementary school teachers are given the freedom to develop learning themes that are relevant to the local context and student interests (Melawati et al., 2023).

The development of the basic education curriculum in Indonesia has undergone a fundamental transformation. Learner assessment now emphasises the process and trajectory of learning rather than the end result. Teachers are required to conduct continuous observation by internalising various methods such as work collection, project recording, and observation (Yusella et al., 2023). Student achievement reports are not only limited to numbers, but also include qualitative descriptions of the journey of learner development in various aspects such as social skills, creativity, and character. In addition, parental involvement in the education process is strengthened. Schools are asked to organise regular meetings with guardians to discuss the child's journey and how parents can support learning at home (Sandang et al., 2022). This approach aims to create a well-rounded learning environment that supports children's total development.

The implementation of this new curriculum at the primary level also emphasises strengthening 21st century skills such as critical thinking, creativity, communication and collaboration. Teachers are encouraged to design teaching and learning activities that enable learners to develop these skills. For example, through group projects that require students to solve real problems in the school or community environment (Zubaedah et al., 2024). The utilisation of technology in learning is also strengthened, with the introduction of basic digital literacy from an early age. Learners are taught how

to use computers, the internet and simple educational applications to support their learning (Jumanto et al., 2024).

Character education and Pancasila values are integral to the implementation of this curriculum at the primary level. Schools are required to integrate values such as honesty, responsibility, tolerance and love for the country in every aspect of learning. Extracurricular activities such as scouting, sports, and cultural arts are also strengthened to support students' character development. Teachers are trained to be role models in applying these values and creating a positive and inclusive school environment (Hendratno et al., 2023).

The implementation of Merdeka Belajar Curriculum in primary schools also takes into account the diversity of students and their special needs. Different learning approaches are applied to suit students' different ways of learning and pace of understanding. For students with special needs, the inclusive education programme is strengthened by the provision of supportive facilities and infrastructure, as well as teacher training in handling diversity in the classroom. Schools are also encouraged to work with psychologists or special educators to provide better support for these students (Aritonang et al., 2023).

In conclusion, the implementation of Merdeka Belajar Curriculum in primary schools brings fundamental changes in the education system at the primary level. The main focus is on creating a more flexible, contextualised and student-centred learning environment. Through an integrated thematic approach, strengthened literacy and numeracy, more comprehensive assessment, development of 21st century skills, and an emphasis on character education and inclusion, the curriculum aims to prepare primary school students for the challenges of the future. Although its implementation requires considerable adaptation and effort on the part of schools, teachers and parents, Merdeka Belajar Curriculum offers an opportunity to improve the quality of basic education in Indonesia, forming a generation that is not only academically intelligent, but also has strong character and is ready to face global dynamics.

Independent Learning Curriculum in the Context of Critical Thinking Development

The Merdeka Belajar curriculum brings fresh air in the development of students' critical thinking skills in Indonesia. One of the main objectives of this curriculum is to prepare students to face the challenges of the 21st century, where critical thinking is an indispensable skill (Ardyanti & Rezania, 2024). In its implementation, this curriculum encourages a more interactive and problem-solving-based learning approach, which directly stimulates the development of students' critical thinking. Teachers are encouraged to design learning activities that challenge students to analyse, evaluate, and create creative solutions to various problems (Susanti, 2024).

The development of critical thinking in the Merdeka Belajar Curriculum is also reflected in changes in assessment methods. Assessment no longer focuses on

memorisation or the ability to answer multiple choice questions alone, but places more emphasis on students' ability to apply knowledge, analyse situations, and make decisions based on available information (Park, 2021). Collaborative projects, presentations and portfolios become an integral part of the assessment process, providing opportunities for students to demonstrate their critical thinking skills in a more real and relevant context (Murniati, 2023).

Furthermore, Merdeka Belajar Curriculum encourages the integration of technology and digital literacy in the learning process, which also contributes to the development of critical thinking. Students are invited to become smart consumers of information, able to evaluate the credibility of sources, distinguish facts from opinions, and use data to support their arguments (Wae et al., 2023). With this approach, the curriculum not only prepares students to become critical thinkers in an academic context, but also in dealing with the swift flow of information in the digital era. The development of critical thinking through Merdeka Belajar Curriculum is expected to form a generation that is able to face the complexity of the modern world with clear, analytical, and innovative thinking (Chew et al., 2020).

Strategies for Developing Critical Thinking Skills through Merdeka Belajar Curriculum

The Merdeka Belajar curriculum opens up great opportunities to develop students' critical thinking skills through various innovative strategies. One of the key strategies is the implementation of project-based learning. In this approach, students are challenged to complete complex projects that require in-depth research, critical analysis and creative problem-solving. For example, students may be tasked with designing sustainable solutions to environmental problems in their community (Indrapangastuti et al., 2024). This process encourages students to gather and evaluate information from various sources, analyse the impact of various solutions, and make decisions based on the evidence they collect (Halim & Wulandari, 2024).

The second strategy is the use of active learning methods such as group discussions, debates, and simulations. Teachers can design discussion sessions that address controversial issues or ethical dilemmas, encouraging students to consider various viewpoints, analyse arguments, and form their own opinions based on critical thinking (Setyowati & Suprapti, 2022). Formal debates can also be used to train students in constructing strong arguments, anticipating counter-arguments, and evaluating the validity of claims made by opposing parties. Simulations of real-world situations, such as a model UN or moot court, can provide a practical context for students to apply critical thinking in complex scenarios (Pamorti et al., 2024).

The integration of technology and digital literacy is also a key strategy in developing critical thinking through Merdeka Belajar Curriculum. Students can be taught effective online research methods, including how to evaluate the credibility of information sources, detect bias, and verify facts (Alpizar et al., 2022). Projects involving

big data analysis or the use of data visualisation tools can help students develop the ability to interpret and draw conclusions from complex information. In addition, the use of online collaboration platforms can encourage students to engage in critical discussions with peers from different backgrounds, broadening their perspectives and improving critical thinking skills (Kusmaryono & Maharani, 2021).

Finally, the application of authentic and formative assessment is an important strategy in supporting the development of critical thinking. Merdeka Belajar curriculum encourages the use of more comprehensive assessment methods, such as portfolios, oral presentations, and reflective essays. These methods allow students to demonstrate their critical thinking skills in a broader and more meaningful context (Lestari et al., 2024). Continuous formative assessment, with constructive feedback from teachers and peers, helps students identify areas for improvement in their critical thinking. These strategies, when implemented effectively within the framework of Merdeka Belajar Curriculum, have great potential to improve students' critical thinking skills, preparing them to become independent thinkers and effective problem solvers in the future (Dini & Putra, 2024).

Challenges and Opportunities in Developing Critical Thinking Skills of Primary School Students

The development of critical thinking skills in primary school students is a significant yet important challenge in modern education. One of the main challenges is the level of cognitive development of primary school students who are still in the concrete operational stage. At this stage, students tend to think literally and have difficulty in understanding abstract concepts that are often the basis of critical thinking (Nursyaidah et al., 2023). Teachers must be creative in bridging this gap by designing learning activities that transform abstract concepts into concrete experiences. For example, using role plays or simple experiments to illustrate the concept of cause and effect or teaching how to compare and contrast ideas (Rizmayannudin & Nuroh, 2024).

Another challenge is time constraints and pressure to meet curriculum standards. Often, the focus on mastering basic subject matter such as reading, writing and arithmetic can shift the priority of developing critical thinking skills (Isnani, 2023). However, this also opens up opportunities to integrate critical thinking into core subjects. Teachers can design questions that encourage analysis and evaluation when discussing reading texts, or use story-based maths problems that require logical thinking and creative problem solving. With this approach, the development of critical thinking skills can go hand in hand with achieving standardised curriculum objectives (Wulandari et al., 2023).

A great opportunity in developing elementary students' critical thinking skills lies in their natural curiosity. Elementary-aged children often have high curiosity about the world around them, which can be utilised to encourage critical thinking (Lubis & Priyadi,

2022). Teachers can stimulate this curiosity by asking open-ended questions, encouraging students to ask their own questions, and creating a classroom environment that supports exploration and discovery. Inquiry-based projects, where students investigate a topic of their interest, can be an effective way to develop observation, analysis and inference skills (Nadhiroh & Anshori, 2023).

Technology also offers exciting opportunities to develop critical thinking in primary school students. The use of specially designed educational apps and games can help students learn to analyse information, make decisions and solve problems in a fun and interactive context. However, the challenge is to ensure a balanced use of technology while maintaining the social interaction that is essential for the development of critical thinking skills (Agustin & Shofiyah, 2023). Collaboration between students in technology-based group projects can be a solution, where students learn to exchange ideas, evaluate each other's opinions, and work together to achieve a common goal. By capitalising on these opportunities and creatively addressing the challenges, the development of critical thinking skills in primary school students can be a strong foundation for their lifelong learning (Pratama, 2021).

In addition to the challenges and opportunities already mentioned, it is also important to consider the role of parents and the home environment in developing the critical thinking skills of primary school students. Collaboration between schools and parents can create continuity in the development of critical thinking (Yuliani et al., 2022). Schools can provide guidance to parents on how to encourage critical thinking at home, such as inviting children to discuss the daily news or asking for their opinions in making simple family decisions. The challenge is to ensure consistency of approach between school and home, and to overcome differences in parents' backgrounds and abilities in supporting the development of these skills (Ardiansya et al., 2024).

Evaluation of critical thinking skills is also a challenging aspect in the context of primary school students. Traditional assessment methods are often insufficient to measure complex critical thinking skills. More holistic and authentic assessment approaches are needed, such as project-based assessment, portfolios, or observation of student behaviour during class discussions. This challenge also opens up opportunities for innovation in assessment methods, for example by developing specific assessment rubrics for critical thinking skills according to the developmental level of primary school students (Aini & Wulandari, 2023).

Teacher professional development is also key in facing this challenge. Many teachers may feel less confident or under-trained in teaching and assessing critical thinking skills. Opportunities to address this lie in training programmes that focus on critical thinking teaching strategies for primary school students, as well as communities of practice where teachers can share experiences and effective strategies. Schools and education policy makers need to provide adequate support and resources for this professional development (Nuraeni et al., 2023).

In conclusion, developing critical thinking skills in primary school students does present various challenges, ranging from students' cognitive limitations, curriculum pressures, to the need for innovative teaching and assessment methods. However, these challenges also open up opportunities for innovation in education. By harnessing students' natural curiosity, integrating technology wisely, involving parents, and continuously developing teachers' skills, we can create a learning environment that supports the development of critical thinking. Critical thinking skills instilled early on will be an important foundation for students in dealing with the complexity of the world in the future, preparing them to be analytical, creative and problem-solving thinkers. Therefore, although challenging, efforts to develop critical thinking skills in primary school students are a valuable investment in their education and future.

Conclusion

The conclusion of the efforts to develop critical thinking skills of elementary school students through learning Merdeka Belajar Curriculum can be summarised in the following three paragraphs:

First, Merdeka Belajar Curriculum opens up great opportunities to develop elementary school students' critical thinking skills with a more flexible and student-centred approach. Through this curriculum, learning can be designed to better accommodate exploration, experimentation, and inquiry that encourage students to think deeply and critically. The focus on project-based learning, problem solving and group discussions allows students to develop their analytical, evaluation and creativity skills early on.

Second, although there are challenges in its implementation, such as the cognitive limitations of primary school students and the need for adaptation of teaching methods, Merdeka Belajar Curriculum offers a supportive framework to overcome these challenges. By giving teachers the freedom to innovate in teaching and assessment methods, it allows for a more personalised and contextualised approach to developing critical thinking skills. Technology integration, collaboration with parents and teacher professional development are important components in realising the full potential of this curriculum.

Third, the development of critical thinking skills through Merdeka Belajar Curriculum is not just about preparing students for exams or short-term academic achievement, but also about equipping them with essential skills to face the challenges of the 21st century. By instilling a foundation of critical thinking since elementary school, we are preparing a generation that is able to critically analyse information, solve complex problems, and make wise decisions. This is a long-term investment in shaping citizens who are reflective, creative and ready to face a rapidly changing world.

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