



THE IMPACTS OF IMPLEMENTING MERDEKA BELAJAR CURRICULUM ON THE QUALITY OF SENIOR HIGH SCHOOL EDUCATION IN INDONESIA: A SCOPING REVIEW

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Abstract. Education in Indonesia faces serious challenges after the COVID-19 pandemic, marked by a decline in academic achievement, including PISA scores in reading literacy, mathematics, and science. To address these issues, the Ministry of Education, Culture, Research, and Technology launched the Merdeka Curriculum as an effort to increase learning flexibility, foster creativity, and strengthen 21st-century competencies. However, the implementation of this curriculum still faces obstacles, particularly regarding teacher readiness, resource limitations, and variations in school conditions. This study aims to examine the impact of the Merdeka Curriculum implementation on the quality of education at the senior high school level in Indonesia. The method used in this study is a scoping review approach with the PRISMA-ScR guidelines, which includes empirical articles published from 2020 to 2024 obtained from the Scopus, DOAJ, and ERIC databases and other specified inclusion criteria. The results of the review of 27 articles show that differentiated learning and diagnostic assessment have been proven to increase learning effectiveness; conversely, authentic and cognitive assessments still face obstacles. In addition, the development of innovative teaching modules and the implementation of project-based learning encourage students' critical, analytical, and entrepreneurial thinking skills. This curriculum also strengthens values-based education, local wisdom, and social interactions that support character building in accordance with the Pancasila Student Profile. In conclusion, the Merdeka Curriculum has significant potential to improve the quality of secondary education in Indonesia, although its success is highly dependent on teacher readiness, policy support, and equitable distribution of resources by the Indonesian government.

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INTRODUCTION

In Indonesia as well as other countries, education has a significant impact on the caliber of human resources. Over the past few decades, Indonesia's education system has undergone various reforms to improve learning outcomes and adapt to global changes in the face of the demands of the times (Rahmanto et al., 2024). In 2021, the Ministry of Education, Culture, Research and Technology initiated the Merdeka Belajar Curriculum, as a form of transformation of curriculum changes used at all levels of education after a curriculum review during the recovery period after the COVID-19 pandemic (Anggraena et al., 2021). The aim of this curriculum is to mitigate the negative impact of the COVID-19 pandemic on schooling and lost learning time, which has a major influence on student achievement. This can be seen in the decline in Indonesia's PISA score in 2022 in terms of reading literacy, math literacy and science literacy (Wahyudin et al., 2024). Given this situation, post-pandemic education recovery focuses on improving and assessing education research from early childhood schools to universities (Hadi et al., 2023). This curriculum was introduced as an alternative to the 2013 Curriculum, which is considered too material-intensive and does not provide sufficient space for creativity and independent development of student competencies (Priawasana & Subiyantoro, 2024). Merdeka Belajar Curriculum emphasizes competency-based education, teaching tailored to school conditions, and project-based learning to develop 21st century skills so as to provide more adaptable and student-centered learning methods (Partini, 2023).

Efforts to improve student competence in schools can be addressed through the Merdeka Belajar curriculum which is designed to be independent and implement effective learning management in schools according to school conditions (Rosnelli & Ristiana, 2023). It is expected that this curriculum will encourage critical thinking, independence, creativity, and student readiness for further study or the world of work at the secondary school level (Irawati et al., 2022). Despite the advantages, there are many difficulties in practicing Merdeka Belajar Curriculum. Several studies show that teacher readiness, limited resources, and variations in school conditions across Indonesia hinder effective implementation (Badrudin et al., 2023). Different assessment and learning methodologies are still a challenge for educators in various schools in Indonesia, and the learning process is made more difficult due to inadequate infrastructure (Muliana et al., 2023). Although diverse learning is prioritized in Merdeka Belajar Curriculum, teachers will naturally struggle to implement differentiated teaching in class according to the learning objectives achieved (Winarto et al., 2025). Not only that, other challenges also occur in the difficulty of teachers in developing Teaching Modules used for learning due to limited information and uneven training in various regions (Rahmah et al., 2024). These difficulties indicate that further research is needed to determine the true effect of Merdeka Belajar curriculum on the quality of education, especially at the senior high school level in Indonesia. The usefulness of curriculum reform in improving learning outcomes has been studied in the past, but not much is known about how Merdeka Belajar Curriculum is used in Indonesia's diverse educational environment (Dasmo et al., 2023; Mahaswa et al., 2024). A future-oriented curriculum should serve as a transformative platform that equips students to engage in critical thinking, creative action, effective collaboration and meaningful communication in a complex and interconnected global landscape (Edwin et al., 2025).

Only a few studies have examined how the implementation of Merdeka Belajar Curriculum affects the quality of education, especially at the senior high school level, although there have been many studies on the curriculum. So that this greatly limits the insights or views of various schools and teachers in adapting Merdeka Belajar curriculum to be applied to their education units, which results in not optimizing the implementation of this curriculum in schools and raising new problems. In addition, no research has been conducted to assess the long-term impact of the curriculum on students' competencies associated with its successful implementation. Therefore, this research provides a means for the government, particularly under the most recent Indonesian government structure, to take policy action by conducting a thorough assessment of Merdeka Belajar Curriculum.

This study makes a new contribution by mapping the impact of the implementation of the Merdeka Curriculum on education in Indonesian high schools through a review of existing literature. Unlike previous studies, which tended to focus on theoretical perspectives, this study systematically reviews various sources of literature to present a comprehensive analysis of curriculum implementation and its successes and challenges. The main objective of this study is to examine the relationship between the quality of secondary education and the implementation of the Merdeka Curriculum. Specifically, this study seeks to answer two main questions: to what extent has the Merdeka Curriculum been implemented in Indonesian high schools, and how can this curriculum improve the quality of education at the high school level in Indonesia?

This study uses a scoping review methodology to map recent findings on the use of Merdeka Belajar Curriculum in senior high school education in Indonesia. This method allows for a broader exploration of previous studies, policy reports and research outcomes to understand the extent to which this curriculum has been implemented, the challenges faced and its impact on education quality (Pham et al., 2014). A scoping review also helps identify gaps in the research that has been conducted, thus providing direction for further research or future policy improvements (Khalil et al., 2024). The main contribution of this study lies in its comprehensive mapping of the impact of the Merdeka Curriculum on student learning outcomes, teaching material development, learning methods, and assessment systems. This research not only compiles empirical evidence but also highlights the successes and obstacles of curriculum implementation in the context of diverse senior secondary education in Indonesia.



Thus, this study provides a scientific basis for policymakers to formulate more effective implementation strategies, while offering insights for education practitioners and academics in understanding the direction of curriculum reform in Indonesia.

RESEARCH METHODS

Scoping Review Framework

This study uses a scoping review methodology to map research on the implementation of Merdeka Belajar Curriculum and its impact on senior high school education standards in Indonesia (Zachary et al., 2018). Scoping review is used with the aim of identifying the scope of research that has been conducted by understanding the main findings and identifying research gaps that still exist (Khalil et al., 2021). Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) was the methodology used in this study (Haddaway et al., 2022). PRISMA-ScR is a widely used guide for scoping review studies to ensure transparency and systematization in the selection and analysis of literature (Tricco et al., 2016). To ensure a systematic and open review process, a four-stage flow chart is shown in Figure 1, and was used to illustrate and assess the various stages in this study. This procedure starts with planning and ends with the presentation of results (Schreiber & Cramer, 2024). The first step was to create a research question and establish the study's inclusion and exclusion criteria (Pollock et al., 2022). Then determines the data sources and creates a Boolean formula using the guidelines for inclusion and exclusion criteria (Peters et al., 2021). To address the research topic, the next stage is to collect and select evidence that meets the standards set by the researcher (Peterson et al., 2017). Differences in opinion or opinion between raters are resolved by joint discussion (Khalil et al., 2024). The data was extracted by organizing and preparing to get the scope review results based on the findings, the whole process can be seen in Figure 1 (Haddaway et al., 2022).

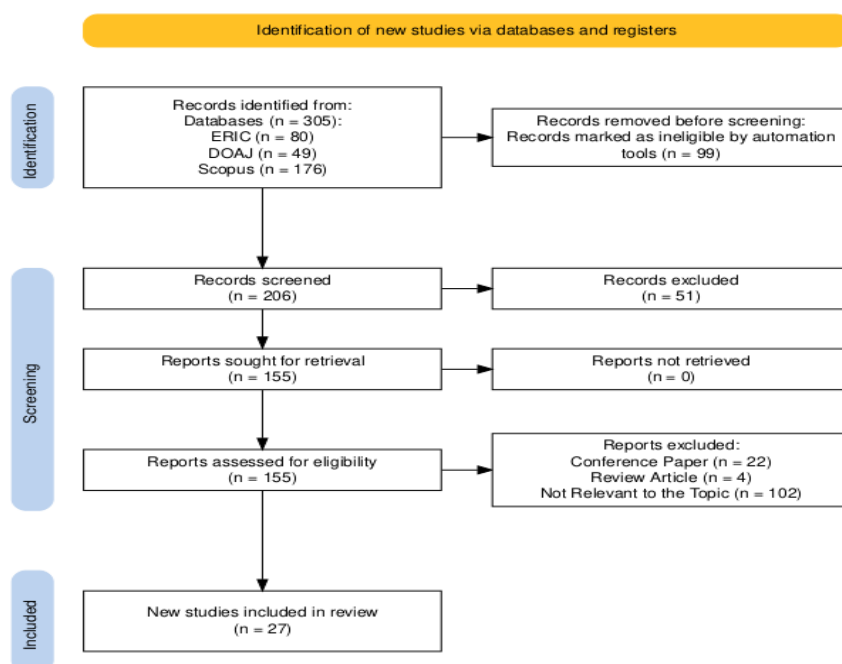


Figure 1. PRISMA - ScR Diagram Research Flow

Methodology and Resources for Search

The search phrases used to find literature on the implementation of the Merdeka Belajar Curriculum at the senior high school level in Indonesia are shown in Table 1 and are retrieved from the Scopus, DOAJ, and ERIC databases. The databases used are high to medium reputable academic databases (Roy-Hubara & Sturm, 2020). This allows a comprehensive meta-analysis of these results using the Boolean formula (Table 1), this search seeks to find empirical studies

that investigate the impact of implementing the Merdeka Belajar Curriculum on the quality of education at the senior high school level in Indonesia.

Table 1. Database Lookup Boolean Formulas

Database	Boolean Formulas
SCOPUS, DOAJ, ERIC	(TITLE-ABS-KEY ("implementation" OR "evaluation" OR "assessment") AND TITLE-ABS-KEY ("curriculum" OR "curricula" OR "Merdeka Curriculum" OR "Independent Curriculum") AND TITLE-ABS-KEY ("senior high school" OR "high school") AND TITLE-ABS-KEY ("Indonesia"))

Inclusion and Exclusion Criteria

Journal articles were selected based on a rigorous peer review process to ensure high validity (Heesch et al., 2018). To facilitate a review that reflects the implementation appropriate to this research, this study established and used inclusion and exclusion criteria, such as the publication period analyzed covering January 2020 to December 2024. This timeframe was chosen to cover relevant data from the beginning of Merdeka Belajar Curriculum in Indonesia (Siddaway et al., 2019). Only studies published in English as the international language were included in this review, which speeds up the review procedure and makes interpretation easier to produce a proper analysis of the studies that have been included by the researchers (Pollock et al., 2022). This review only includes empirical articles, to provide comprehensive research results and answer the research question of this study (Pham et al., 2014). The article review is open-access, making it easier for researchers to review the articles used (Khalil et al., 2021). The Merdeka Belajar curriculum at the senior high school level in Indonesia is the main subject of this study. Table 2 lists the inclusion and exclusion criteria used when selecting studies for this systematic review.

Table 2. Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
The publication period	January 2020 – December 2024	Other periods
Publishing type	Articles	Conference Papers, Reports, Book, Book Chapters, Dissertation
Language	English	Indonesia, or other
Place of study	Indonesia	other
Type of research	Articles empirical investigations	Literature reviews, Theoretical reviews, Book reviews
Target object of research	Senior High School	Elementary school, Secondary school, Vocational high school, and Higher education
Focus of the research	Curriculum in Indonesia, Merdeka Belajar Curriculum	Others
Accessing	Open Access	Hybrid access, close access

Analysis of Literature Findings

Figure 2 displays the process of systematically assessing the literature findings in this study to evaluate the impact of Merdeka Belajar Curriculum on senior high school education in Indonesia. The literature review analysis process is carried out in several stages, each stage illustrates that each stage is carried out according to research procedures to produce results according to the findings of the research objectives (Peters et al., 2021). This process includes four main stages. First, data extraction was conducted by collecting various studies from academic journals, research reports and policy documents (Schmidt et al., 2018). The selection of sources was based on inclusion criteria relevant to the implementation of this curriculum. Second, categorization of findings was conducted to group the research results based on key themes, such as differentiated learning, authentic assessment, learning resources, teacher readiness and student learning outcomes (Zachary et al., 2018). This grouping helps in understanding the pattern of curriculum implementation. Third, to assess the extent of current research, a review of the findings was conducted (Tricco et al., 2016). This step identifies



general trends, research gaps and key challenges in curriculum implementation, such as teacher readiness and assessment effectiveness. Finally, reporting the results is done by systematically compiling the findings, highlighting the successes and challenges in implementing Merdeka Belajar Curriculum. Important lessons from this investigation will help stakeholders to better implement the curriculum in the future.

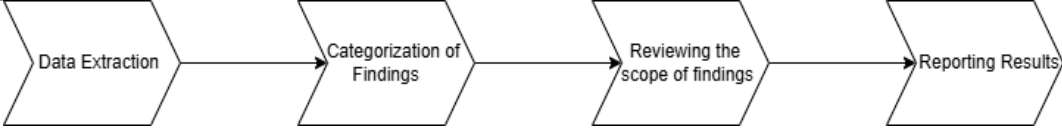


Figure 2. Stages of Analysis of Literature Findings

RESULTS AND DISCUSSION

Merdeka Belajar Curriculum in Indonesia has been the topic of several studies, but none has produced clear knowledge of how this curriculum is implemented at the senior high school level and the impact of its implementation. Therefore, Merdeka Belajar Curriculum has not been fully understood and implemented. In order to provide comprehensive research information on the impact of implementing the Merdeka Belajar Curriculum on the quality of education at the senior high school level in Indonesia, this study conducts and reviews a number of research articles using a systematic scope review approach. Table 3 shows the results found based on the scope review, there are 27 articles that answer research questions to meet the objectives and criteria of this study.

Table 3. Results Scoping Review Article

The Impacts of Implementing Merdeka Belajar Curriculum on the Quality of High School Education	Sources
Differentiated learning and diagnostic assessments improve learning effectiveness.	(Ramadhan, 2024), (Sari et al., 2024), (Natasari et al., 2023), (Nissa' et al., 2023), (Sofiana et al., 2024).
Challenges of authentic assessment and cognitive assessment.	(Sahlan et al., 2023), (Irawan et al., 2024), (Kuwoto et al., 2024), (Zana et al., 2024), (Huda & Rohaeti, 2024).
Innovative approaches through the development of teaching modules to support concept understanding.	(Alamanda et al., 2023), (Prasetyo et al., 2024), (Yuanita et al., 2023), (Fatimah et al., 2023)
Improved critical, analytical, and entrepreneurial thinking skills.	(Rohmad et al., 2024), (Noris et al., 2024), (Musdi et al., 2024), (Laliyo et al., 2023)
The importance of training, evaluation and policy support for teachers.	(Sholeh et al., 2024), (Lestari & Arifin, 2023), (Rohmadi et al., 2024), (Suryawati et al., 2024)
Values-based education, local wisdom and social engagement strengthen learners' characters	(Rachman et al., 2024), (Padauleng et al., 2025), (Komalasari & Masyitoh, 2022), (Hidayah et al., 2021), (Rianawaty et al., 2021)

Table 3 presents the findings of the scoping review based on the literature reviewed. The implementation of Merdeka Curriculum in Indonesia has had six impacts on education standards at the senior secondary school level, including: 1) Differentiated learning and diagnostic assessment increase learning effectiveness. 2) Challenges of authentic assessment and cognitive assessment. 3) Innovative approaches through the development of teaching modules to support concept understanding. 4) Improving critical thinking, analytical and entrepreneurial skills. 5) The importance of training, evaluation, and policy support for teachers. and 6) Value-based education, local wisdom, and social engagement strengthen student character. Figure 3 shows a diagram of the results of the article literature review so that each impact has a review of relevant

literature results and answers this research question to produce comprehensive and important findings for teachers, students, and the government as a policy maker for the education curriculum in Indonesia

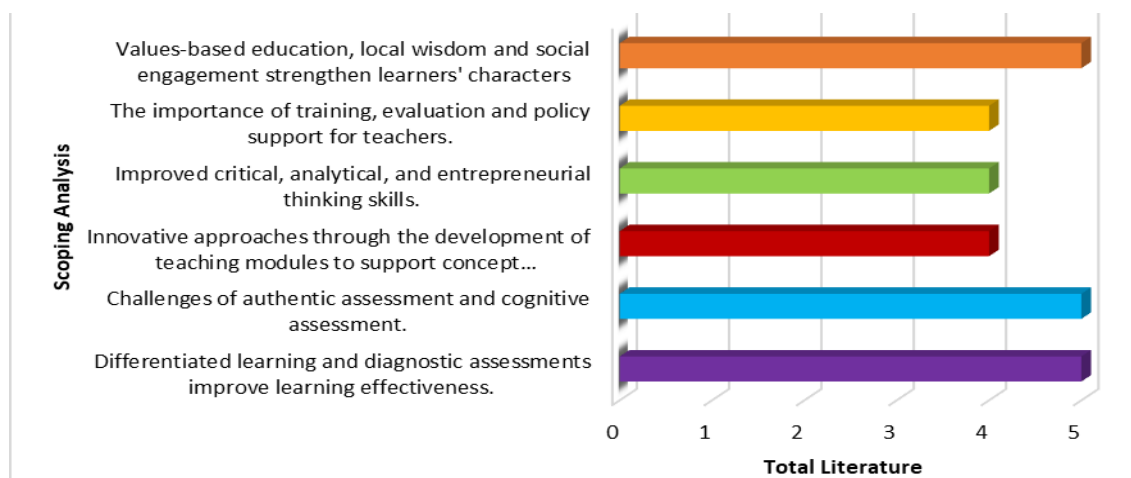


Figure 3. Diagrams Results Scoping Review Article

Table 3 shows the results of the scope review based on the literature reviewed to determine how the implementation of Merdeka Curriculum impacts on senior secondary school education standards in Indonesia.

Differentiated learning and diagnostic assessments improve learning effectiveness

Learning differentiation is promoted by Merdeka Belajar Curriculum as a key strategy to adapt teaching strategies to student needs (Wahyudin et al., 2024). Teachers can adapt materials, procedures and learning outcomes according to school conditions, student characteristics, interests and learning readiness through learning differentiation (Tomlinson, 2017). Thus, each student gets a learning experience that suits their abilities and needs, thus increasing the effectiveness of learning. Diagnostic assessment is also an important part of this approach, of course, it is very well implemented in Merdeka Belajar Curriculum. This is because it can help teachers identify students' level of understanding before starting learning (Muliana et al., 2023). Other similar research shows that diagnostic assessments carried out systematically can improve student academic achievement because they allow teachers to provide more targeted interventions (Leyder et al., 2023). To achieve the Pancasila Student Profile, the diagnostic assessment used in Merdeka Belajar Curriculum by analyzing students' social, emotional, and cognitive abilities (Irawati et al., 2022). For example, diagnostic tests used in geography classes help in determining students' learning challenges so that teachers can modify their methods for more successful teaching (Nadia et al., 2024). However, there are still some obstacles to overcome before diagnostic tests can be incorporated into the Merdeka Belajar Curriculum.

One of them is the inability of teachers to prepare and manage this test properly (Shadri et al., 2023). The teacher's problem is that many teachers are still oriented towards summative assessments and are not familiar with formative diagnostic assessments in their learning. In addition, diagnostic tests require sufficient time and resources to be conducted as efficiently as possible and provide teachers with relevant information to improve their students' educational standards (Baruta, 2023). Some schools in remote areas may experience obstacles in implementing these assessments due to limited access to teacher training and supporting technology as well as school facilities, so equalizing the quality of teachers, learning and infrastructure is important for the Indonesian government. Through effective integration between standardized and measurable assessments and the educational policies made, it will provide an effective assessment model for Merdeka Belajar Curriculum when implemented by educational units (Moreno & Escalante, 2025). The application of assessment can also be developed through a critical thinking assessment model that can be integrated with students' process skills to achieve the best results in accordance with the implementation of the Merdeka

Belajar Curriculum which places great emphasis on learning outcomes in schools (Kriswantoro et al., 2021). To overcome this obstacle, it is necessary to increase teacher capacity through continuous training in implementing diagnostic assessments and learning differentiation (Darling-Hammond et al., 2019). Through the introduction of contextualized teaching and learning as a transitional effort to improve student learning achievement outcomes, teachers are continuously required to practice accurate teaching (Yasin et al., 2023). In addition, the creation of a digital assessment platform may offer a way to facilitate teachers' ability to interpret diagnostic test findings effectively (Morales-Martinez et al., 2017). By effectively using diagnostic assessment and learning differentiation, Merdeka Belajar Curriculum is expected to improve the quality of teaching at the senior high school level in Indonesia. The use of these techniques not only improves student learning outcomes, but also makes the classroom more accommodating and adaptable to the needs of each student.

Challenges of Authentic Assessment and Cognitive Assessment

One strategy that is increasingly used in contemporary education systems to measure students' abilities more comprehensively is authentic assessment (McArthur, 2023). This assessment uses project-based or portfolio tasks to emphasize critical thinking, collaboration and problem-solving skills (Ajjawi et al., 2024). Nevertheless, there are several challenges that arise in implementing authentic evaluation in the Merdeka Belajar Curriculum, especially regarding the complexity of assessment instruments. Creating assessment rubrics that are in accordance with the principles of authentic assessment can be a challenge for educators (Syaifuddin, 2020). In addition, questions that measure low-level thinking skills continue to dominate cognitive exams in the Merdeka Belajar Curriculum (Baruta, 2023). This poses a risk of making students less accustomed to solving problems that require in-depth analysis, synthesis, and evaluation, which are part of higher-level thinking skills so that it requires the development of a model to produce learning program assessments in the curriculum implemented in schools (Setiawan et al., 2020). The significance of continuous professional development for educators and interdisciplinary collaboration to guarantee the proper execution of mental health support within educational environments (Tari et al., 2025).

Other research also shows that many teachers do not fully understand how to design assessments that encourage higher order thinking skills, thus requiring training such as designing appropriate assessment instruments (Poerwanti & Tribudhiarto, 2020). One of the reasons why cognitive assessment in Merdeka Belajar Curriculum is still below standard is the lack of adequate training in assessment design. Apart from teacher factors, other obstacles in implementing authentic assessment are time constraints and high administrative burdens (Rosyada et al., 2024). As project or portfolio-based assessments take longer to evaluate student work than traditional written tests, teachers often find it difficult to implement, which results in less than ideal learning outcomes for Merdeka Belajar Curriculum (Rahmah et al., 2024). To overcome this challenge, it is necessary to develop a more structured and efficient assessment system. One solution is the use of technology in authentic assessment, such as digital platforms that can assist teachers in conducting formative assessments more practically and accurately (McArthur, 2023). Improvements to the cognitive and authentic assessment system will help Merdeka Belajar Curriculum better prepare students for the challenges of the 21st century (Bednarz et al., 2013).

Innovative Approaches through the Development of Teaching Modules to Support Concept Understanding

One of the important elements in the implementation of Merdeka Belajar Curriculum is the development of learning tools, especially those that aim to improve teaching standards in senior high schools in Indonesia. Innovatively created learning materials have been shown to improve student understanding and promote more meaningful learning (Rahayu & Rosti, 2023). In the context of Merdeka Belajar Curriculum, the development of teaching materials based on contextual and project-based approaches is a top priority. Several studies have shown that teaching materials that use development models such as ADDIE can increase the effectiveness of classroom learning (Sugiyanto et al., 2021). In order to make the learning process more



flexible and in accordance with the principle of differentiation-which is very relevant to the Merdeka Belajar Curriculum used in educational units-this model allows teaching materials to be systematically designed by considering the needs and characteristics of students. In addition, the Merdeka Belajar Curriculum emphasizes increasingly utilizing technology-based instructional resources. The use of digital media, such as e-books, interactive simulations, and learning videos, has been shown to help improve students' understanding of complex concepts (Agusningtyas et al., 2024). Learning becomes more engaging and dynamic with this technology, which encourages students to learn on their own and dig deeper into the information they encounter in their daily lives.

However, a major challenge in developing teaching materials is the gap in access to adequate resources. Many schools, especially in remote areas of Indonesia, continue to face constraints related to the accessibility of technology devices and internet connectivity (Hakim & Nabila, 2022). This can hinder the implementation of digital-based instructional resources, which is a hallmark of Merdeka Belajar Curriculum. In addition, educators' proficiency in creating and utilizing new learning resources is an important element in effective curriculum implementation. Studies show that many teachers still have difficulties in adapting project-based teaching materials and technology, so more intensive training is needed (Alawiah & Setyorini, 2023). To overcome these barriers, collaboration between the government, schools and industry is needed in the provision of quality teaching materials that are easily accessible to all students (Andrianto et al., 2024). One solution that can be applied is the development of a digital repository containing teaching materials based on the Merdeka Belajar Curriculum which can be accessed for free by teachers and students so as to enrich learning library resources at school (Ma'ruf, 2024). Through improvements in the creation of educational resources and new methodologies, Merdeka Belajar Curriculum can more effectively improve the level of learning in Senior High Schools and equip students to face global issues.

Improved Critical, Analytical, and Entrepreneurial Thinking Skills

Merdeka Belajar Curriculum aims to improve students' critical, analytical and entrepreneurial thinking skills through a flexible project-based learning methodology (Wahyudin et al., 2024). In today's society, critical thinking is an important skill that children need as it allows them to evaluate information objectively and generate opinions based on facts (Razak et al., 2022). According to other studies, using inquiry-based learning and problem-based learning techniques can improve students' critical thinking skills (Putra & Masruri, 2019). This tactic encourages students to independently evaluate real problems and seek solutions as part of efforts to strengthen the Pancasila Student Profile under Merdeka Belajar Curriculum (Irwan et al., 2024). In addition to critical thinking, analytical skills are also a major focus in this curriculum. These skills include the ability to process data, understand patterns and draw relevant conclusions (Sulastri et al., 2018). In science and social subjects, inquiry-based learning methods are proven to provide data utilization skills and project-based experiments can help students develop better analytical skills (Chen, 2021).

Through the development of spatial thinking techniques and Geo-Capabilities to understand global difficulties and problems, geography education fosters analytical and cognitive abilities called "spatial thinking" used to understand, evaluate, and solve problems related to space and spatial relationships in everyday life (Bednarz & Lee, 2019). Geo-Capabilities is an approach in geography education that focuses on how geography can empower students with deep geographic thinking that is relevant to the real world through caring, empathetic, and global-minded attitudes (Bladh, 2020). For example, research conducted by Sugiyanto et al. (2024), In order to showcase digital learning innovations and pedagogical methodologies for disaster mitigation learning materials, the growth of learning through D-Learning is believed to increase student empathy in Geo-Capabilities. These capabilities are aligned with the Pancasila Learner Profile aspect of Merdeka Belajar Curriculum, which aims to address global issues through responsible problem solving (Soekamto & Handoyo, 2022).

Entrepreneurial skills are also an important part of the Merdeka Belajar Curriculum, not just providing business skills, but this aims to provide aspects of cultivating cooperative,



creative, and innovative characters (Primadita & Handayani, 2024). Through project-based learning, students are encouraged to think creatively, take risks, and develop innovations in various fields (Setiyono et al., 2021). Some educational institutions have incorporated entrepreneurship subjects into their curriculum to give students the tools they need to succeed in the world of work. Entrepreneurial ability is one of the topics in the Pancasila Student Profile of Merdeka Belajar Curriculum, which also encourages and fosters an entrepreneurial spirit in children from an early age (Primadita & Handayani, 2024). The difficulty in implementing this curriculum is that teachers are not prepared to use teaching strategies that promote entrepreneurial skills (Amalita et al., 2024). Another study found that many teachers have not implemented the Pancasila Learner Profile Strengthening Project properly due to a lack of informative guidelines for implementing certain themes, in addition to a lack of school facilities for teacher training related to the implementation of the Pancasila Learner Profile Strengthening Project (Nurjanah & Mustofa, 2024). Teachers should receive extensive training on how to use project-based learning and exploration techniques to overcome these barriers. In addition, improving students' entrepreneurial education can be achieved through partnerships and cooperation between schools and industries. Students who develop critical, analytical and entrepreneurial thinking skills will be better equipped to handle the demands of everyday life and the workplace, in addition to being prepared for academic exams.

The Importance of training, Evaluation and Policy Support for Teachers

Assessment of the implementation of Merdeka Belajar Curriculum shows that a number of obstacles still need to be overcome, especially related to teacher readiness, limited resources, and the need for more thorough training (Ndari et al., 2023). Other research has shown that the ability of a curriculum to be successfully implemented depends largely on how ready and able teachers are to implement it in schools (Masri et al., 2023). One of the main problems is teachers' ignorance of the concepts and principles of Merdeka Belajar Curriculum (Rohmatika, 2023). Many educators lack a thorough understanding of how to differentiate instruction and use project-based learning strategies in the classroom (Nadia et al., 2024). This has resulted in inconsistent curriculum implementation across schools, especially at the senior secondary level (Hasanah et al., 2022). Although the Government provides a self-directed learning platform for teachers to practice the theory and practice of Merdeka Belajar Curriculum because research shows that one-time training is less successful in improving teacher competencies in the long run (Alawiah & Setyorini, 2023). Therefore, additional learning and sustainable community-based training models or community-building activities such as subject teacher meetings are needed to optimize the implementation of Merdeka Belajar Curriculum in schools (Banowati & Fithri, 2024).

The assessment also revealed that resources and supporting infrastructure continue to differ by location. Access to resources and learning technologies that facilitate the implementation of this curriculum is often a challenge for schools located in distant places (Bastian et al., 2023). To overcome these problems, the government needs to strengthen support in the form of direct assistance, provision of adequate resources, and periodic evaluation of the effectiveness of the curriculum. One approach that can be applied is a mentoring model for teachers so that they can share experiences and strategies in implementing the Merdeka Belajar Curriculum (Sukma et al., 2024). In addition, the subject teachers' deliberation community receives support from the learning community by receiving training on how to effectively use the self-teaching platform and by strengthening the learning community at the school level through learning community workshop activities to track or assess the implementation of the assistance program (Miftah et al., 2024). With additional teacher training and continuous assessment, it is hoped that the implementation of Merdeka Belajar Curriculum can run more smoothly and benefit education in Indonesia.

Values-Based Education, Local Wisdom and Social Engagement Strengthen Learners' Characters

Character development is emphasized in the academic field in Merdeka Belajar Curriculum through the Pancasila Student Profile Strengthening Project (Wahyudin et al.,



2024). This idea is in line with the philosophy of character education, which highlights the importance of incorporating moral principles into the educational process to improve students' personalities (Suryaman, 2020). Using a variety of teaching techniques, including the Pancasila Student Profile strengthening initiative, the curriculum seeks to promote virtues including integrity, responsibility and social duty (Anggraena et al., 2021). Merdeka Belajar Curriculum is very relevant to KI Hajar Dewantara's understanding as the Father of Indonesian Education because character education is becoming increasingly important in the era of globalization, where students must be able to adapt to social and cultural changes in addition to having academic abilities (Robiasih et al., 2021). Schools that successfully implemented education based on the values of the Pancasila Student Profile experienced improvements in student behavior, community engagement and learning as they were allowed to choose the curriculum taking into account the characteristics of the students and the school environment, while adhering to the established learning outcomes (Lestari & Arifin, 2023).

Merdeka Belajar Curriculum is a project-based approach to character development, where students participate in practical exercises that enhance their social, empathy and leadership skills (Martatiyana et al., 2023). For example, it has been shown that social entrepreneurship and community service initiatives in certain schools can improve students' ability to work together and sense of social responsibility (Primadita & Handayani, 2024). According to Amalita et al (2024), Through the dimensions of the Pancasila Learner Profile, the implementation of the Pancasila Learner Profile Strengthening Project supports students' character development so that students have outstanding character and global competitiveness. The biggest challenge is practicing character education on a regular basis. According to research, many schools continue to struggle to systematically and long-term integrate moral ideals into the curriculum (Tiyani & Ramadan, 2024). Sometimes, character education is not incorporated into the regular learning process, but is only used as an additional program. This is of course different from Merdeka Belajar Curriculum, which combines extracurricular, co-curricular and intracurricular activities to consistently display the dimensions of the Pancasila Learner Profile (Wahyudin et al., 2024). In addition, the success of value-based education also depends heavily on the role of the teacher as a model in applying moral values in daily interactions with students (Haluti et al., 2023). Therefore, training for teachers in implementing character-based teaching strategies is important so that the values taught are not only theoretical, but can also be applied in real life.

Support from the family and community also plays an important role in the success of character education (Masyhudi et al., 2020). Research shows that students who receive reinforcement of moral values both at school and at home tend to have a more positive attitude towards their learning and social life both cognitively and skillfully (Mashrul & Permana, 2022). Therefore, cooperation between school, family and community is a key factor in shaping better student character. It is intended that by incorporating value-based education into the Merdeka Belajar Curriculum, students will not only achieve academic success but also develop strong moral character and the capacity to become responsible members of society. To realize a more comprehensive and sustainable education system, continuous efforts are needed to create and improve character education implementation solutions.

CONCLUSIONS AND SUGGESTIONS

According to the findings of this study, Indonesia's education standards were severely impacted when Merdeka Belajar Curriculum was implemented at the senior secondary school level. The results of the scoping review form the basis of this study's six main conclusions, including first, learning differentiation and diagnostic assessment are proven to improve learning effectiveness by allowing teachers to adjust teaching methods according to student needs. Second, authentic assessment and cognitive assessment still face various challenges in their implementation, especially in terms of the complexity of assessment instruments and teacher readiness. Third, innovative approaches in developing technology-based teaching materials and project-based learning models have helped improve students' understanding of



concepts. Fourth, Merdeka Belajar Curriculum contributes to improving critical, analytical, and entrepreneurial thinking skills through a more flexible and exploratory learning approach. fifth Teacher training, evaluation, and ongoing policy support are key factors in the successful implementation of this curriculum. and finally Value-based education, local wisdom, and social engagement have been shown to strengthen student character, in line with the aim of strengthening the Pancasila Student Profile.

Although Merdeka Belajar Curriculum has many advantages, there are still some issues that need to be resolved, especially with regard to teacher readiness, limited access to learning materials, and disparities in conditions between different schools. Some schools have successfully adopted this curriculum, while others are still experiencing obstacles in its implementation. The purpose of this study is to thoroughly investigate the impact of Merdeka Belajar Curriculum by concentrating on a subject that has not received much attention in previous research. It is intended that academics, educators and policy makers can use the results of this study as a roadmap for developing more effective curriculum implementation strategies. Future research could focus on the best ways to address the issues of authentic assessment and cognitive evaluation, which remain a challenge for the implementation of Merdeka Belajar Curriculum. It is hoped that with more thorough research, Merdeka Belajar Curriculum can further develop as an innovative, inclusive, and sustainable educational approach for Indonesian students or as a source for identifying the best policies that can be implemented for the country's curriculum.

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