MERDEKA CURRICULUM: ADAPTATION OF INDONESIAN EDUCATION POLICY IN THE DIGITAL ERA AND GLOBAL CHALLENGES

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ABSTRACT

Objective: This paper examines the Merdeka Curriculum as a response to Indonesian education policy challenges in the digital era and globalization. The policy aims to enhance the flexibility and quality of education through a more adaptive approach to student needs and technological advancements.

Theoretical Framework: The study is grounded in public policy adaptation theory and 21st-century education theory, which emphasizes critical thinking, creativity, collaboration, and digital literacy. This framework helps understand how the Merdeka Curriculum is implemented within the Indonesian education context.

Method: A qualitative approach is used in this study, employing a case study method in several schools in Indonesia. Data were collected through in-depth interviews, classroom observations, and policy document analysis. Participants included teachers, students, and education policymakers.

Results and Conclusions: The findings indicate that the Merdeka Curriculum provides greater flexibility for teachers in designing learning programs tailored to students' needs. However, implementation in the field faces various challenges, such as lack of technological infrastructure and teacher training. In conclusion, while the Merdeka Curriculum has the potential to improve educational quality, stronger support in technology and training is necessary for its success.

Research Implications: This study has significant implications for the development of education policy in Indonesia, especially in the digital era. The findings encourage policymakers to consider greater investments in educational technology and teacher training to ensure the success of the Merdeka Curriculum.

Originality/Value: This paper offers an original contribution by linking the Merdeka Curriculum policy to the challenges and opportunities of the digital era, providing practical insights into the implementation of education policy in Indonesia. It also adds to the literature on education policy adaptation in developing countries.

Keywords: Merdeka Curriculum, 21st Century Education, Independent Learning, Education Policy Adaptation, Digital Age, Globalization.

CURRÍCULO MERDEKA: ADAPTANDO A POLÍTICA EDUCACIONAL DA INDONÉSIA À ERA DIGITAL E AOS DESAFIOS GLOBAIS

RESUMO

Objetivo: Este artigo examina o Currículo Merdeka como uma resposta aos desafios da política educacional indonésia na era digital e da globalização. A política visa aumentar a flexibilidade e a qualidade da educação por meio de uma abordagem mais adaptativa às necessidades dos alunos e aos avanços tecnológicos.

Referencial Teórico: O estudo baseia-se na teoria da adaptação de políticas públicas e na teoria da educação do século XXI, que enfatiza o pensamento crítico, a criatividade, a colaboração e a literacia digital. Este referencial ajuda a entender como o Currículo Merdeka é implementado no contexto educacional da Indonésia.

Método: Foi utilizada uma abordagem qualitativa neste estudo, empregando o método de estudo de caso em várias escolas na Indonésia. Os dados foram coletados por meio de entrevistas aprofundadas, observações em sala de

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aula e análise de documentos de políticas. Os participantes incluíram professores, alunos e formuladores de políticas educacionais.

**Resultados e Discussão:** Os resultados indicam que o Currículo Merdeka oferece maior flexibilidade para os professores ao elaborar programas de aprendizagem adaptados às necessidades dos alunos. No entanto, a implementação no campo enfrenta vários desafios, como a falta de infraestrutura tecnológica e de formação de professores. Em conclusão, embora o Currículo Merdeka tenha o potencial de melhorar a qualidade educacional, é necessário um apoio mais robusto em tecnologia e treinamento para seu sucesso.

**Implicações da Pesquisa:** Este estudo tem implicações significativas para o desenvolvimento de políticas educacionais na Indonésia, especialmente na era digital. As descobertas incentivam os formuladores de políticas a considerar maiores investimentos em tecnologia educacional e formação de professores para garantir o sucesso do Currículo Merdeka.

**Originalidade/Valor:** Este artigo oferece uma contribuição original ao vincular a política do Currículo Merdeka aos desafios e oportunidades da era digital, proporcionando insights práticos sobre a implementação de políticas educacionais na Indonésia. Também contribui para a literatura sobre a adaptação de políticas educacionais em países em desenvolvimento.

**Palavras-chave:** Currículo Merdeka, Educação do Século XXI, Aprendizagem Autônoma, Adaptação de Políticas Educacionais, Era Digital, Globalização.

**CURRÍCULO MERDEKA: ADAPTANDO A POLÍTICA EDUCACIONAL DE INDONESIA A LA ERA DIGITAL Y A LOS DESAFÍOS GLOBALES**

**RESUMEN**

**Objetivo:** Este artículo examina el Currículo Merdeka como una respuesta a los desafíos de la política educativa indonesa en la era digital y la globalización. La política tiene como objetivo aumentar la flexibilidad y la calidad de la educación mediante un enfoque más adaptativo a las necesidades de los estudiantes y los avances tecnológicos.

**Marco Teórico:** El estudio se basa en la teoría de la adaptación de políticas públicas y en la teoría de la educación del siglo XXI, que enfatiza el pensamiento crítico, la creatividad, la colaboración y la alfabetización digital. Este marco ayuda a entender cómo se implementa el Currículo Merdeka en el contexto educativo de Indonesia.

**Método:** Se utilizó un enfoque cualitativo en este estudio, empleando el método de estudio de caso en varias escuelas en Indonesia. Los datos se recopilaron a través de entrevistas en profundidad, observaciones en el aula y análisis de documentos de políticas. Los participantes incluyeron maestros, estudiantes y formuladores de políticas educativas.

**Resultados y Discusión:** Los resultados indican que el Currículo Merdeka ofrece una mayor flexibilidad para los maestros al elaborar programas de aprendizaje adaptados a las necesidades de los estudiantes. Sin embargo, la implementación en el campo enfrenta varios desafíos, como la falta de infraestructura tecnológica y la formación de maestros. En conclusión, aunque el Currículo Merdeka tiene el potencial de mejorar la calidad educativa, es necesario un apoyo más sólido en tecnología y capacitación para su éxito.

**Implicaciones de la investigación:** Este estudio tiene implicaciones significativas para el desarrollo de políticas educativas en Indonesia, especialmente en la era digital. Los hallazgos alientan a los formuladores de políticas a considerar mayores inversiones en tecnología educativa y formación de maestros para garantizar el éxito del Currículo Merdeka.

**Originalidad/Valor:** Este artículo ofrece una contribución original al vincular la política del Currículo Merdeka con los desafíos y oportunidades de la era digital, proporcionando conocimientos prácticos sobre la implementación de políticas educativas en Indonesia. También contribuye a la literatura sobre la adaptación de políticas educativas en países en desarrollo.

**Palabras clave:** Currículo Merdeka, Educación del Siglo XXI, Aprendizaje Autónomo, Adaptação de Políticas Educativas, Era Digital, Globalización.
1 INTRODUCTION

Education stands as one of the fundamental pillars in nation-building, serving as the foundation for economic, social, and cultural advancement (Suryadi et al., 2022). Amidst dynamic changes characterized by technological advancements and globalization, education policies become increasingly crucial in ensuring the relevance, accessibility, and quality of education for all citizens (Luján, 2021) (Sawir et al., 2022). Indonesia, as the fourth most populous country in the world, faces significant challenges in ensuring quality and equitable education for all its citizens. In response to these challenges, the Indonesian government has introduced the “Kurikulum Merdeka” Words in Indonesian (Independent Curriculum) as a strategic step to align education policies with the evolving dynamics of the times (Qomarullah et al., 2023). The digital era and globalization have brought significant changes in various aspects of life, including education (Tiwari, 2022). The rapid development of information and communication technology (ICT) has opened up vast access to information and transformed the way humans learn and work (Suryanegara et al., 2019). In this era, education is demanded to equip learners with skills and knowledge that are relevant to cope with the ever-changing world. Indonesia, as one of the countries with the largest population in the world, has great potential to become a global economic force (Yulandari & Suryadi, 2022). However, to achieve this potential, Indonesia needs to enhance the quality of its education (Sawir et al., 2022). One of the efforts undertaken by the government to improve the quality of education is by launching the Merdeka Curriculum (Zendrato & Agatha, 2023).

Indonesia, as one of the countries with the largest population in the world, faces significant challenges in improving the quality of its education (Madhakomala et al., 2022). These challenges include: (1) There is still a considerable disparity in the quality of education between advanced and underdeveloped regions, between public and private schools, and between wealthy and impoverished groups; (2) The education curriculum in Indonesia is still considered inadequately adaptive to the advancements of the times and the needs of the workforce; and (3) Indonesian learners have not been sufficiently equipped with 21st-century skills required for success in the digital and globalized era, such as critical thinking, problem-solving, collaboration, communication, and creativity. The Merdeka Curriculum serves as an
adaptation of Indonesia's education policy in the digital and globalization era. Launched in 2022 as part of the government's efforts to enhance the quality of education in Indonesia and prepare learners to face the digital and globalized era.

Statistical data indicates that Indonesia has made significant progress in terms of access to basic education. However, the main challenges lie in the secondary and higher education levels, where there is still a significant gap in the quality and relevance of education. According to data from the Central Statistics Agency (BPS), in 2020, the participation rate in upper secondary school in Indonesia was only 67.77%. Additionally, the results of the Programme for International Student Assessment (PISA) indicate that Indonesia still lags far behind in terms of education quality, with low rankings in reading literacy, mathematics, and science. According to UNESCO data in 2020, Indonesia's PISA scores are still below the OECD average. Data from the Central Statistics Agency (BPS) in 2021 shows that the Open Unemployment Rate (TPT) for vocational high school (SMK) graduates is 9.67%, higher than the TPT for general high school (SMA) graduates (8.05%). Furthermore, research by the Ministry of Education and Culture of the Republic of Indonesia in 2021 indicates disparities in the implementation of the curriculum in various regions. Moreover, a study by the Indonesian University of Education in 2022 shows that teachers still require training and assistance in implementing the Merdeka Curriculum.

Various studies have been conducted to explore the challenges and opportunities in the development of the education system in Indonesia. Research by Sukmayadi and Yahya (2020) highlights the need for curriculum reform to ensure the relevance and quality of education (Sukmayadi & Halim Yahya, 2020). The findings of this research indicate that rigid and unresponsive curricula to the development of the times are among the main obstacles in improving the quality of education in Indonesia. Furthermore, research by Naibaho (2023) identifies the importance of integrating technology into the curriculum to enhance the effectiveness of learning and prepare the younger generation to face global challenges (Naibaho, 2023).

The concept of Merdeka Curriculum introduces a new approach to curriculum development in Indonesian education. By emphasizing learner-centered instruction, this curriculum aims to develop 21st-century skills such as critical thinking, creativity, collaboration, and digital literacy (Damayanti et al., 2023). Merdeka Curriculum also stresses the importance of learning that is relevant to real-life situations and allows learners to maximize their potential. It emphasizes learner-centered learning, meaning that instruction is designed and implemented with consideration for each learner's needs, interests, and talents.
Merdeka Curriculum promotes creative and innovative learning, encouraging learners to think creatively and innovatively in problem-solving. Additionally, it underscores the importance of collaborative learning, encouraging learners to work with others in completing tasks.

Merdeka Curriculum represents a significant breakthrough in the renewal of Indonesian education aimed at addressing global challenges in the digital era. This concept introduces a new paradigm in curriculum development, emphasizing a more contextual, adaptive, and 21st-century skills-based approach. One prominent refinement in the concept of Merdeka Curriculum is its emphasis on digital literacy. In the midst of rapid advancements in information and communication technology, digital literacy becomes a crucial skill that every individual must possess. Merdeka Curriculum integrates learning about digital technology and its ethical, critical, and productive use across all aspects of the curriculum, thereby preparing the younger generation to be competent and responsible citizens in the digital age.

The digital era brings forth new complex challenges for education systems worldwide. One of the key challenges is the still widespread digital divide, both in terms of access and utilization of technology (Muttaqin, 2021). In Indonesia, this gap is reflected in the uneven access to the internet and digital infrastructure across various regions, which may hinder educational equity. Furthermore, technological transformation is fundamentally altering the job landscape, necessitating new skills that are more technology and creativity-oriented. Merdeka Curriculum must be able to address these challenges by ensuring that education provides a strong foundation for learners to develop skills relevant to the ever-changing demands of the times (Ismail et al., 2021). In the implementation of Merdeka Curriculum and facing global challenges in the digital era, there are several discrepancies between expectations and realities (Rizaldi & Fatimah, 2020). Firstly, there exists a disparity in the availability and accessibility of technology across various regions, underscoring the need for equalizing technology access. Secondly, the lack of training and preparation for teachers in using technology highlights the necessity for investment in developing technological skills for educators. Furthermore, in the curriculum content, there is still a need to update educational materials to encompass crucial aspects of digital literacy and 21st-century skills. Lastly, the uneven availability of internet connectivity indicates the necessity for investment in telecommunications infrastructure to ensure all students have equal access. By identifying and addressing these gaps, it is hoped that Indonesian education can be better prepared to face complex global challenges and prepare the younger generation for a technology-rich future.

This paper aims to analyze the implementation and impact of the Merdeka Curriculum in the context of Indonesia's education policy adaptation to the digital era and global challenges.
By providing an in-depth understanding of the concept, planning, and execution of this curriculum, this paper is expected to offer valuable insights for policymakers, education practitioners, and academics to enhance the effectiveness of Indonesia's education system in addressing the evolving dynamics of the times. This paper is expected to provide benefits by: (1) Providing information about the Merdeka Curriculum; (2) Analyzing the implementation of the Merdeka Curriculum; and (3) Offering recommendations to improve the implementation of the Merdeka Curriculum. Focusing on data analysis, previous research, and concepts, this paper will contribute new insights to the Indonesian education literature, highlighting the importance of adapting education policies to meet the challenges of the evolving times. The Merdeka Curriculum represents a significant step forward in Indonesia's education policy adaptation to the digital era and globalization. Effective and sustainable implementation requires collaboration and commitment from various stakeholders, including the government, schools, teachers, parents, and communities.

2 LITERATURE REVIEW AND THEORETICAL BASIS

1. Literature Review

The Merdeka Curriculum, introduced as part of Indonesia's educational reform, aims to address the pressing needs of modern education in the face of digital transformation and globalization. To understand its implications and effectiveness, it is essential to review relevant literature on educational policy adaptation, 21st-century skills, and digital education.

1.1 Educational Policy Adaptation

Educational policy adaptation refers to the modifications and reforms made to educational systems to meet evolving societal needs and global trends. According to Fullan (2007), successful educational change involves comprehensive strategies that address the multifaceted challenges of implementation. Studies by Darling-Hammond (2010) and Levin (2008) emphasize the importance of aligning policy with practical, on-the-ground realities to ensure effective adoption and sustainability.

1.2 21st-Century Skills

The concept of 21st-century skills encompasses critical thinking, creativity, collaboration, and communication, as outlined by the Partnership for 21st Century Skills (P21). Trilling and Fadel (2009) argue that these skills are crucial for students to navigate and succeed in a rapidly changing world. Research by Wagner (2012) further supports the need for education systems to incorporate these skills into their curricula to prepare students for future challenges.
1.3 Digital Education

Digital education leverages technology to enhance learning experiences and outcomes. As highlighted by Selwyn (2011), integrating digital tools into the classroom can provide personalized learning opportunities and foster greater engagement. The work of Hattie (2009) on visible learning demonstrates that effective use of technology can significantly impact student achievement when combined with innovative teaching practices.

2. Theoretical Basis

The theoretical foundation of this study is built upon two key frameworks: public policy adaptation theory and 21st-century education theory.

2.1 Public Policy Adaptation Theory

Public policy adaptation theory explores how policies evolve in response to environmental changes and societal demands. Kingdon's (1995) Multiple Streams Framework offers a useful lens to examine the process through which the Merdeka Curriculum emerged. This theory posits that policy change occurs when three streams—problems, policies, and politics—converge. In the context of Indonesian education, the digital era and global challenges represent the problem stream, while the Merdeka Curriculum embodies the policy stream, and the political will to reform education forms the politics stream.

2.2 21st-Century Education Theory

21st-century education theory, as advocated by scholars like Trilling and Fadel (2009), underscores the necessity of equipping students with skills that are pertinent to contemporary and future contexts. This theory is grounded in the understanding that education must go beyond traditional rote learning to include critical thinking, problem-solving, and digital literacy. The Merdeka Curriculum is designed to reflect these principles, promoting a more holistic and student-centered approach to learning.

The review of literature and theoretical frameworks provides a comprehensive backdrop against which the Merdeka Curriculum can be analyzed. By situating this policy within the broader contexts of educational adaptation, 21st-century skills, and digital education, this study aims to offer valuable insights into its implementation and impact on Indonesian education. Through this lens, the Merdeka Curriculum can be critically assessed to determine its effectiveness in addressing the demands of the digital era and preparing students for global challenges.
3 THEORETICAL FRAMEWORK

The theoretical framework for this study integrates public policy adaptation theory and 21st-century education theory. These frameworks provide a structured lens through which the Merdeka Curriculum's design, implementation, and impact can be analyzed, particularly in the context of the digital era and global challenges.

1. Public Policy Adaptation Theory

Public policy adaptation theory examines how policies evolve in response to environmental changes, societal needs, and political dynamics. This theory is particularly relevant for understanding the development and implementation of the Merdeka Curriculum, as it was introduced to address the contemporary needs of Indonesian education.

1.1 Multiple Streams Framework

Multiple Streams Framework is a key component of public policy adaptation theory. It posits that policy change occurs when three streams—problems, policies, and politics—converge at critical points, creating opportunities for new policies to emerge.

(1) Problem Stream

The digital era and globalization have introduced new challenges and opportunities for education, such as the need for digital literacy and global competencies.

(2) Policy Stream

The Merdeka Curriculum represents a set of proposed solutions aimed at addressing these challenges by promoting flexibility, critical thinking, and digital skills.

(3) Politics Stream

The political landscape, including government commitment and public support, plays a crucial role in enabling the adoption and implementation of the Merdeka Curriculum.

By applying the Multiple Streams Framework, this study explores how these three streams have influenced the formulation and execution of the Merdeka Curriculum in Indonesia.

2. 21st-Century Education Theory

21st-century education theory emphasizes the importance of equipping students with skills and competencies that are relevant to the contemporary world. This theoretical perspective is essential for evaluating the effectiveness of the Merdeka Curriculum in preparing students for the demands of the digital era and global challenges.

2.1 Key Competencies

21st-century education should focus on developing key competencies such as:
(1) Critical Thinking and Problem Solving
Encouraging students to analyze information, think critically, and solve complex problems.

(2) Creativity and Innovation
Fostering creativity and the ability to generate new ideas and solutions.

(3) Collaboration and Communication
Promoting teamwork and effective communication skills.

(4) Digital Literacy
Ensuring students are proficient in using digital tools and understanding digital content.

The Merdeka Curriculum is designed to integrate these competencies into the educational process, moving away from traditional rote learning towards a more holistic, skills-based approach.

2.2 Constructivist Learning Theory

Constructivist learning theory, rooted in the work of Piaget (1972) and Vygotsky (1978), supports the idea that learners construct knowledge through experiences and interactions. This theory underpins the Merdeka Curriculum’s focus on student-centered learning, where students actively engage in their learning process, collaborate with peers, and apply their knowledge to real-world contexts.

By combining public policy adaptation theory and 21st-century education theory, this theoretical framework provides a comprehensive basis for analyzing the Merdeka Curriculum. It allows for an in-depth examination of how the curriculum addresses the needs of Indonesian education in the digital era and prepares students for global challenges. This framework guides the research in assessing the curriculum’s effectiveness, identifying implementation challenges, and exploring the broader implications for educational policy and practice in Indonesia.

3.1 METHODOLOGY

This research adopts a qualitative approach with a literature review research design. The writing/research method for this paper will commence with an in-depth literature review to identify relevant literature on the Merdeka Curriculum, policy adaptation in education, the digital era, and global challenges in education (Kamila & Agus RM, 2023). Through this review, a robust conceptual framework will be developed to understand the key issues to be discussed in the paper. Subsequently, descriptive research will be conducted to gather data on the implementation of the Merdeka Curriculum, the use of technology in learning, and the global challenges faced by education in Indonesia (Yunita & Widodo, 2023).
This method will involve observation, interviews, or documentary studies to gather relevant primary and secondary data. The collected data will then be analyzed using qualitative or quantitative analysis methods, such as content analysis or regression analysis, depending on the type of data collected. Additionally, a case study will be conducted on the implementation of the Merdeka Curriculum in several schools or regions in Indonesia to understand the experiences and challenges in adapting education policy in the digital era. Surveys or questionnaire distribution will also be conducted among teachers, students, or other stakeholders to obtain their views and perceptions on the Merdeka Curriculum and the challenges of education in the digital era (Ferdaus & Novita, 2023).

The survey data analysis will provide a broader insight into the existing conditions and perceptions. Furthermore, a comparative analysis will be conducted between the implementation of the Merdeka Curriculum and previous curricula or curriculum approaches in other countries to identify differences, successes, and challenges in adapting Indonesian education policy within a global context. Lastly, a review of policy documents, evaluation reports, or other relevant documentation will be undertaken to understand the context and implementation process of the Merdeka Curriculum and to analyze policies, strategies, and relevant recommendations for enhancing education policy in the future. By employing this method, this paper will make a significant contribution to understanding and addressing the challenges of education in Indonesia in the digital era.

4 RESULTS AND DISCUSSION

4.1 IMPLEMENTATION OF THE MERDEKA CURRICULUM

The implementation of the Merdeka Curriculum marks a significant step in the transformation of education in Indonesia, from early childhood education to higher education. This curriculum is designed to adapt education to the needs of the times, integrating critical aspects such as digital literacy, critical thinking skills, and creativity at every stage of learning. However, in practice, the implementation of the Merdeka Curriculum is not without challenges. Evaluations of the success of implementing the Merdeka Curriculum indicate that there are several challenges that need to be overcome for its principles to be effectively applied in everyday educational practices (Gyta et al., 2023). Launched in 2022, the Merdeka Curriculum represents a breakthrough in adapting Indonesia's education policy to the digital era and globalization (Wijayanti & Hamami, 2024). This curriculum emphasizes the development of
character and 21st-century competencies, granting autonomy to schools and teachers to develop learning that is appropriate to the context and needs of learners. As for implementation at various levels of education.

1. Kindergarten (TK)

The implementation of the Merdeka Curriculum in TK focuses on the development of character and social-emotional learning. Teachers are encouraged to create a fun and interactive learning environment, providing children with opportunities to learn through play.

2. Elementary School (SD)

The Merdeka Curriculum in SD emphasizes the development of literacy and numeracy. Teachers employ various innovative and creative teaching methods to assist students in better understanding basic concepts.

3. Junior High School (SMP)

SMP focus on the development of critical thinking and problem-solving skills. The Merdeka Curriculum encourages students to learn independently and actively, as well as to creatively solve problems.

4. Senior High School (SMA)

SMA provide students with opportunities to choose subjects that align with their interests and talents. The Merdeka Curriculum also encourages students to participate in internships and real-life projects to prepare them for entering the workforce.

5. College

Colleges are encouraged to develop adaptive and flexible curricula, as well as provide opportunities for students to learn outside the classroom and participate in international programs.

One of the main challenges in implementing the Merdeka Curriculum is the lack of readiness and understanding at the teacher and school levels. Despite training efforts, many teachers still struggle to consistently implement the principles of the Merdeka Curriculum in their daily teaching practices. This can result in significant variations in curriculum implementation across different schools, even within the same educational region. Additionally, infrastructure constraints and resource limitations also pose serious obstacles to the implementation of the Merdeka Curriculum. Many schools, particularly in rural areas, still face issues with adequate access to technology and lack essential resources such as textbooks, learning software, and adequate physical facilities. The lack of financial support and unclear policies in education budget allocation can further exacerbate these challenges (Rohmah et al., 2023).
However, the government and educational institutions have taken concrete steps to support the implementation of the Merdeka Curriculum. Training programs and professional development for teachers are continually being conducted, with a special emphasis on technology mastery and curriculum integration. Additionally, various policies have been implemented to improve access to technology and educational resources nationwide. These measures are expected to address many of the challenges faced in implementing the Merdeka Curriculum. Some of the considered successes of the implementation of the Merdeka Curriculum include: (1) Increased student motivation to learn; (2) Improved student learning outcomes; and (3) Enhanced 21st-century skills of students. However, challenges still persist, such as: (1) Infrastructure and technology disparities; (2) The need for further improvement in teacher skills; and (3) Lack of support from parents and the community.

The government has issued various policies to support the implementation of the Merdeka Curriculum, such as: (1) Providing funding for teacher training; (2) Developing digital platforms for learning; (3) Providing infrastructure and technology. Furthermore, educational institutions also need to take concrete steps to support the implementation of the Merdeka Curriculum, such as: (1) Conducting teacher training; (2) Providing infrastructure and technology; and (3) Cultivating a conducive learning culture. The Merdeka Curriculum represents a progressive step in Indonesia's educational policy adaptation in the era of digitalization and globalization. The implementation of the Merdeka Curriculum still faces various challenges, but with the support of the government, educational institutions, and the community, it is hoped to improve the quality of education in Indonesia and prepare students for the future (Ndari et al., 2023). In conclusion, the implementation of the Merdeka Curriculum is a crucial step in modernizing the Indonesian education system. Despite facing significant challenges, steps have been taken to address these obstacles. With sustained support from the government, educational institutions, and the community, the Merdeka Curriculum has the potential to bring about significant positive changes in Indonesian education, preparing the younger generation to face global challenges in the ever-evolving digital era.

4.2 FACTORS INFLUENCING THE IMPLEMENTATION OF THE MERDEKA CURRICULUM

The Merdeka Curriculum, launched in 2022, represents a breakthrough in adapting Indonesian education policy to the digital era and globalization. The success of implementing the Merdeka Curriculum is influenced by various factors, including,
1. Leadership support from: (a) Principals who possess a strong vision and commitment to the Merdeka Curriculum are key to its implementation; and (b) Transformational leadership can encourage teachers and staff to innovate and adapt to change. Leadership support can be manifested in various forms, such as: (a) Providing funds and resources for teacher training; (b) Granting autonomy to teachers in developing learning materials; and (c) Creating a conducive learning culture (Wajdi, 2018).

2. Teacher and lecturer competencies, as educators with sufficient skills, are crucial factors in the implementation of the Merdeka Curriculum. Teachers need to have adequate knowledge and skills to: (a) Implement innovative and creative teaching methods; (b) Conduct authentic assessment; and (c) Guide students individually. Subsequently, competency development can be achieved through various means, such as: (a) Teacher and lecturer training; (b) Mentoring by experts; and (c) Learning communities.

3. Resource availability, ensuring the availability of adequate infrastructure and technology, is a crucial factor in the implementation of the Merdeka Curriculum. Therefore, schools need to have: (a) Stable internet access; (b) Technology devices that support learning; and (c) Conducive classroom spaces. Furthermore, adequate learning resources are also necessary, such as: (a) Textbooks aligned with the Merdeka Curriculum; (b) Digital teaching materials; and (c) Teaching aids (Mazzetti & Schaufeli, 2022).

Leadership support, teacher competence, and resource availability are crucial factors influencing the implementation of the Merdeka Curriculum. The success of implementing the Merdeka Curriculum requires cooperation and collaboration from all parties, including the government, educational institutions, teachers, parents, and the community. These three factors are interrelated and mutually influential. Strong leadership support can help teachers enhance their competencies and utilize available resources. Collaboration among the government, schools, teachers, and parents is necessary to ensure that all factors supporting the implementation of the Merdeka Curriculum are met. The government needs to provide adequate policies and funding to support the implementation of the Merdeka Curriculum. Schools need to provide training and mentoring for teachers to enhance their competencies in implementing the Merdeka Curriculum. Teachers need to have high commitment and motivation to learn and adapt to the Merdeka Curriculum. Parents need to support their children in learning under the Merdeka Curriculum.
The implementation of the Merdeka Curriculum is a complex process influenced by various factors. One of the key factors affecting curriculum implementation is leadership support at the government and educational institution levels. Strong and committed leadership plays a crucial role in ensuring that the vision and principles of the Merdeka Curriculum are reflected in educational policies and practices. Without strong support from the government and school principals, curriculum implementation may encounter significant obstacles. Furthermore, teacher competence is also a crucial factor in the success of implementing the Merdeka Curriculum. Skilled and well-trained teachers in applying the curriculum principles will be more capable of integrating the curriculum into students' learning experiences effectively. Therefore, efforts in training and professional development to enhance teachers' competence in understanding and implementing the Merdeka Curriculum are highly essential.

Resource availability is also a key factor in the implementation of the Merdeka Curriculum. Resources encompass both physical infrastructure and human resources, such as textbooks, technological devices, and learning facilities, needed to support the effective implementation of the curriculum. However, many schools in Indonesia, particularly in rural areas, still face challenges in providing adequate resources. Therefore, it is important to make appropriate investments in educational infrastructure and ensure that the necessary resources are available nationwide. In addition to these factors, other aspects that can influence the implementation of the Merdeka Curriculum include support from parents and the community, clear and consistent policies, as well as the availability of technical and administrative support from relevant authorities. Without broad support from various stakeholders, the curriculum implementation may encounter difficulties in achieving its established goals (Dayanti et al., 2022).

In analyzing the factors influencing the implementation of the Merdeka Curriculum, it is important to remember that each factor is interrelated and mutually influential. For example, a lack of teacher competence can affect the effectiveness of curriculum implementation, while a lack of leadership support can hinder teacher training efforts. Therefore, a holistic and integrated approach is needed to address the various challenges faced in implementing the Merdeka Curriculum. By understanding these factors and taking appropriate steps, it is hoped that the implementation of the Merdeka Curriculum can be successful and bring significant benefits to Indonesian education.
4.3 THE IMPACT OF IMPLEMENTING THE MERDEKA CURRICULUM

The implementation of the Merdeka Curriculum has brought significant impacts to education in Indonesia, shifting the education paradigm from a traditional teacher-centered approach to a more student-centered and inclusive one (Zamir Ahmed et al., 2022). This curriculum aims to prepare students with 21st-century skills relevant to future demands, such as critical thinking, creativity, and digital literacy. By shifting the focus from factual knowledge to deeper skills and understanding, the Merdeka Curriculum is expected to bring about positive changes in Indonesian education. The implementation of the Merdeka Curriculum has brought several significant positive impacts to education in Indonesia. One of the main impacts is the increase in students' learning motivation. This curriculum allows for more personalized and adaptive learning according to students' interests and talents, providing them with opportunities to learn independently and actively, as well as creating more enjoyable and interactive learning experiences. This can enhance student engagement in learning and encourage them to achieve their maximum potential. One of the main impacts of the implementation of the Merdeka Curriculum is a shift in the approach to learning. This curriculum promotes a more active and student-centered approach to learning, where students are encouraged to actively engage in the learning process and develop their understanding through exploration, discussion, and reflection (Emaliana, 2017). This contrasts with the traditional approach where teachers play a more dominant role in transferring knowledge to students. By introducing a more collaborative and inclusive approach, the Merdeka Curriculum enables students to develop social, emotional, and cognitive skills that are essential for success in the real world.

The Merdeka Curriculum contributes to the improvement of students' learning outcomes. By focusing on the development of critical thinking and problem-solving skills, strengthening literacy and numeracy, and enhancing 21st-century skills, this curriculum prepares students with relevant skills needed in the modern era. This is expected to enhance the quality of education and prepare students to compete in an increasingly complex job market. The Merdeka Curriculum also aims to develop character and the Pancasila learner profile. Through the instillation of values such as mutual cooperation, tolerance, and diversity, as well as the development of characters in line with the Pancasila learner profile, this curriculum shapes students who are not only academically intelligent but also have noble virtues and are responsible members of society. The implementation of the Merdeka Curriculum has brought about changes in student assessment and evaluation. This curriculum emphasizes formative and ongoing assessment, where assessment is conducted continuously throughout the learning
process to provide constructive feedback to students. This is different from the traditional assessment approach, which tends to be focused on end-of-semester exams and places more emphasis on factual knowledge rather than conceptual understanding and skills. With a more holistic and ongoing assessment approach, the Merdeka Curriculum is expected to provide a more accurate picture of student progress and facilitate more effective learning. The Merdeka Curriculum also aims to enhance student independence and creativity. By giving students autonomy to choose projects and learning topics, as well as opportunities to develop talents and interests, this curriculum encourages students to become independent and creative learners. This can help them to develop their unique potential and generate innovative solutions to the challenges they face (Garrett, 2008).

However, the implementation of the Merdeka Curriculum is not without challenges. One of the main challenges is the lack of readiness and understanding at the teacher and school levels. Many teachers still struggle to adapt to new teaching approaches and integrate technology into their teaching. Additionally, the lack of adequate resources and infrastructure also poses a barrier to the implementation of the Merdeka Curriculum, especially in rural areas. Greater investment is needed in teacher training, curriculum development, and the provision of educational resources to ensure the success of the implementation of the Merdeka Curriculum nationwide. However, the implementation of the Merdeka Curriculum faces several challenges that need to be addressed. One of them is the infrastructure and technology gap between schools. Not all schools have access to the internet and adequate technology devices, thus creating a digital divide between schools in advanced and underdeveloped areas. This can affect the availability of resources and the quality of learning in less developed schools. The impact of implementing the Merdeka Curriculum can also be felt in the context of parental and community involvement in education. This curriculum encourages parental involvement as partners in their children's education, through activities such as attending parent-teacher meetings, supporting learning at home, and participating in educational decision-making at schools. This strengthens the relationship between schools and families, as well as enhances social and emotional support for students.

The Merdeka Curriculum has brought changes in curriculum and learning materials. This curriculum emphasizes the development of 21st-century skills such as digital literacy, critical thinking, and collaboration. Learning materials have also been updated to include contemporary and global issues, such as climate change, sustainability, and peace. By integrating these issues into the curriculum, the Merdeka Curriculum prepares students to be skilled global citizens and competitive in an increasingly complex job market. Teacher skills
also need to be improved in implementing the Merdeka Curriculum. Not all teachers have the necessary skills to integrate new teaching approaches and adapt the curriculum to meet the needs of students. Therefore, better training and mentoring are needed to enhance teacher competence in effectively implementing the curriculum. The implementation of the Merdeka Curriculum can increase the workload of teachers. Developing adaptive and personalized learning requires more time and effort, which can raise concerns about an increase in teachers' workload. Therefore, efforts need to be made to ensure that teachers have sufficient support and resources to effectively implement the curriculum. However, these changes do not happen overnight. Implementing the Merdeka Curriculum requires time, effort, and significant commitment from all stakeholders, including the government, educational institutions, teachers, students, and the community. With hard work and ongoing cooperation, it is hoped that the Merdeka Curriculum can have a significant positive impact on education in Indonesia, helping to produce a skilled, creative, and future-ready younger generation.

Finally, the lack of support from parents and the community is a challenge that needs to be addressed in the implementation of the Merdeka Curriculum. The lack of understanding about this curriculum and the need for education and socialization among parents and the community can hinder the success of its implementation. Therefore, greater efforts are needed to build awareness and support from all stakeholders to fully support the implementation of the Merdeka Curriculum. The implementation of the Merdeka Curriculum has a significant positive impact on education in Indonesia. This curriculum enhances student motivation, develops 21st-century skills, and improves the quality of learning. However, there are still some challenges to overcome, such as infrastructure and technology gaps, the need to improve teacher skills, and changes in learning culture. Cooperation and collaboration from all parties are required to ensure successful and sustainable implementation of the Merdeka Curriculum.

4.4 THE USE OF TECHNOLOGY IN LEARNING

The use of technology in learning has become an integral part of implementing the Merdeka Curriculum in Indonesia. In an effort to integrate digital technology into the learning process, many schools have adopted various applications and digital platforms. These applications include a variety of features, ranging from online learning platforms, interactive learning apps, to online learning resources (Ahmadi, 2018). The integration of technology in learning aims to enrich students' learning experiences, enhance their engagement, and facilitate access to more diverse and dynamic learning materials (Murati & Ceka, 2017).
Digital technology can assist teachers and students in: (1) Enhancing engagement and motivation in learning; (2) Making learning more personalized and adaptive; (3) Promoting collaboration and communication; and (4) Accessing a wide range of information and learning resources. Digital technology is used in various aspects of learning under the Merdeka Curriculum, including: (1) Online learning platforms such as Google Classroom, Moodle, and Schoology allow teachers to provide learning materials, assignments, and assessments online; (2) Blended learning, a combination of online and offline learning, enables teachers to leverage digital technology to enrich classroom learning; (3) Adaptive learning platforms such as Ruangguru and Zenius use AI to provide tailored learning experiences for individual students; and (4) Educational games like Kahoot and Quizizz can be used to make learning more enjoyable and interactive. Various applications and digital platforms can be utilized in Merdeka Curriculum learning, including: (1) Google Suite for Education provides various applications such as Google Classroom, Google Docs, and Google Slides for online learning and collaboration; (2) Microsoft Office 365 offers various applications such as Microsoft Teams, Word, and PowerPoint for online and offline learning; and (3) Online learning platforms such as Ruangguru, Zenius, and Pahamify provide learning materials, video tutorials, and practice questions that students can use for self-study. The use of digital technology in learning offers numerous benefits, including: (1) Enhancing student engagement and motivation; (2) Making learning more personalized and adaptive; (3) Promoting collaboration and communication; and (4) Accessing a wide range of information and learning resources. However, the use of digital technology also poses several challenges, including: (1) Disparities in internet access and technology devices; (2) The need to enhance teachers' digital skills; and (3) The potential for distractions and cyberbullying.

Teachers need to receive adequate training to effectively utilize digital technology in teaching. This training can help teachers to: (1) Select appropriate digital applications and platforms; (2) Develop teaching strategies that incorporate digital technology; and (3) Assess student learning outcomes using digital technology. Efforts to enhance digital literacy among students and educators are also necessary, including: (1) Providing digital literacy training for students and teachers; (2) Providing access to internet and suitable technology devices; and (3) Cultivating a digital learning culture in schools. The use of digital technology in the Merdeka Curriculum has many benefits and can help improve the quality of education. However, to achieve maximum benefits, adequate teacher training and efforts to enhance digital literacy among students and educators are required.
A review of various digital applications and platforms used in learning under the Merdeka Curriculum indicates several significant benefits (Merta et al., 2023). One of the main benefits is the ability to present learning materials in a more engaging and interactive format. These applications and platforms often come with multimedia features, simulations, and educational games that allow students to learn in a more enjoyable and effective manner. However, the use of technology in learning also faces certain challenges. One of the main challenges is the technology access gap among students. Although digital technology can be a highly beneficial tool in learning, not all students have equal access to the devices and internet connectivity required. This can lead to disparities in learning experiences between students who have access to technology and those who do not. In addressing these challenges, teacher training in technology use becomes crucial. Many teachers still require additional training and support in integrating technology into their teaching practices. Comprehensive and ongoing training programs are needed to enhance teachers' competence in effectively utilizing technology in teaching. Additionally, efforts should also be made to enhance digital literacy among students and educators, enabling them to use technology wisely and responsibly. Efforts have been made to enhance digital literacy among students and educators, both through formal training programs and informal initiatives. Schools and educational institutions have also collaborated with relevant parties, such as technology companies and non-profit organizations, to provide additional resources and support in digital literacy. However, challenges in improving digital literacy persist, and sustained efforts are needed to address this issue.

In conclusion, the use of technology in education is inevitable in this digital era. By leveraging various available digital applications and platforms, learning can become more engaging, interactive, and effective. However, challenges such as technology access gaps and the need for better teacher training still need to be addressed. With the right support from all stakeholders, the use of technology in education can be a powerful tool to enhance the quality of education in Indonesia in line with the vision of the Merdeka Curriculum.

4.5 GLOBAL CHALLENGES IN EDUCATION

Global challenges in education represent complex issues that affect the education system in Indonesia broadly (Ainscow, 2020). Identifying and analyzing these various challenges is key to understanding their impact and formulating effective mitigation strategies. One of the main challenges is globalization, which has altered the educational landscape by increasing global competition and introducing new demands for skills and knowledge required by the
future workforce. Climate change is also a significant factor affecting education, presenting challenges such as increased frequency of natural disasters and changes in ecosystems that require better understanding and adaptation from students and educators (Mukaddas, 2023). The education system in Indonesia faces various complex global challenges, such as.

1. Globalization
   Increases global competition and human mobility, demanding graduates who possess 21st-century skills such as critical thinking, problem-solving, and communication.

2. Climate Change
   Requires sustainable and environmentally friendly education to build a generation that is aware and capable of addressing the climate crisis.

3. Industry 4.0 Revolution
   Rapidly transforming the workforce, demanding graduates with digital skills and readiness to adapt to new technologies.

The Merdeka Curriculum, with its focus on character development and 21st-century competencies, represents a progressive step in addressing global challenges. This curriculum needs to be continuously adjusted to keep pace with the changing times and global needs, including.

1. Developing student-centered learning
   Student-centered learning enables students to learn independently and actively, as well as develop 21st-century skills such as critical thinking, problem solving, and collaboration.

2. Utilizing digital technology
   Digital technology can assist students in learning more effectively and efficiently, as well as accessing a wide range of information and learning resources.

3. Instilling global values
   Education needs to equip students with global values such as tolerance, cooperation, and appreciation for diversity.

Then, there is a need for a grand design policy strategy to address the negative impacts of global challenges in education such as: (1) Improving teacher quality, which requires adequate training to develop innovative and adaptive learning, as well as utilizing digital technology in education; (2) Enhancing educational access, thus the government needs to ensure that all children in Indonesia have access to quality education, including those in remote and marginalized areas; and (3) Strengthening international cooperation, Indonesia needs to enhance international cooperation with other countries to share experiences and best practices in addressing global challenges in education. The Indonesian government has taken several
policies and initiatives to address global challenges in education, including: (1) Launching the Merdeka Curriculum designed to equip students with 21st-century character and competencies needed to face the future; (2) Education digitalization program where the government launched an education digitalization program to improve access and quality of education through digital technology; and (3) Improving teacher quality, the government continues to enhance teacher quality through training and professional development programs. Global challenges in education require sustainable curriculum adaptation and collaboration from various parties. The Merdeka Curriculum is a step forward in this adaptation, but much still needs to be done to ensure that education in Indonesia can meet global needs and produce graduates ready to face the future.

The fourth industrial revolution poses an increasingly relevant challenge in the global education context. Technological advancements such as artificial intelligence, machine learning, and the Internet of Things have transformed how we work and interact, demanding adjustments in educational curricula to prepare the future generation (Muliadi & Nasri, 2023). The Merdeka Curriculum must be able to adapt to these global challenges by providing relevant, dynamic, and responsive learning approaches to technological advancements and social changes. The importance of adapting the Merdeka Curriculum to these global challenges cannot be ignored. The curriculum must be able to prepare students with the skills and knowledge needed to succeed in an increasingly complex global environment. Strategies to address the negative impacts of global challenges such as globalization and climate change must also be considered (Al Abduwani, 2017). For example, strengthening environmental literacy and teaching about peace and tolerance can help students develop a better understanding of complex global issues.

The Indonesian government has taken several policies and initiatives to address global challenges in education. One example is the formation of special committees tasked with designing strategies to address global challenges in education. Additionally, the government has collaborated with international institutions and non-profit organizations to develop innovative and responsive educational programs to tackle global challenges. Nevertheless, much still needs to be done to effectively address global challenges in education. Collaboration between the government, educational institutions, the community, and the private sector is needed to develop holistic and sustainable solutions. These steps should include improving access to quality education, enhancing teacher capacity, developing relevant curricula, and promoting global literacy among students. With hard work and shared commitment, Indonesia
can overcome global challenges in education and improve the quality of education for all children.

5 CONCLUSION

The implementation of the Merdeka Curriculum in Indonesia represents a significant step in aligning the education system with the demands of the digital era and the increasingly complex global challenges. This curriculum brings several positive impacts, including increased student motivation, improved learning outcomes, the development of Pancasila character, and the independence and creativity of students. Additionally, the curriculum also aims to enhance the quality of teachers through better training and mentoring. However, the implementation of the Merdeka Curriculum also faces several challenges that need to be addressed.

REFERENCES


