CHALLENGES AND OPPORTUNITIES FOR TECHNOLOGY INTEGRATION IN IMPLEMENTING EMANCIPATED LEARNING CURRICULUM

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Abstract

Merdeka Belajar (Emancipated Learning) policy is a revolutionary educational reform that completely transforms the education system in Indonesia, redefining the school structures, students' roles, and teaching methods. The concept of autonomous learning aligns with one of the ideas of Education 5.0, which emphasizes the integration of technology in the teaching and learning process that prioritizes freedom and flexibility in its implementation. Since 2022, numerous studies have been conducted on the technological integration within this policy. The objective of this study is to uncover challenges and opportunities in incorporating technology in the teaching and learning process at the elementary, middle, and high school levels. This issue is reviewed using a literature-based method to examine relevant studies. The research findings indicate that integrating technology into the teaching and learning process can provide favorable outcomes for students and enable more individualized learning. Nevertheless, there are still challenges that need to be addressed pertaining to infrastructure and teacher proficiency that need to be surmounted in order to leverage technological integration in education.

Keywords – Emancipated Learning curriculum, technological integration, individualized learning

Introduction

The curriculum is seen as one of the foundations of the learning process carried out in schools. Curriculum refers to plans and agreements regarding objectives, content, learning materials, and methods that provide guidelines for implementing teaching and learning activities in a school (Maulidya & Indriani, 2023). According to Suweta (2023), the curriculum is a guideline in determining direction in achieving the goals prepared by each related education unit. The curriculum currently being implemented in Indonesia is the Emancipated Learning Curriculum, first introduced in 2021 by the Ministry of Education to overcome problems arising from the COVID-19 pandemic as a recovery step from the learning crisis experienced by post-pandemic education (Ummah & Nadlir, 2023). At that time, it was called the Emergency Curriculum. Along the way, the emergency curriculum was developed into the Emancipated Learning Curriculum, which gives schools, teachers, and students the freedom to think freely, innovate, and be creative (Millati, 2021).

The Emancipated Learning curriculum has different characteristics from previous curricula. This curriculum highlights the importance of autonomy, independence, and the opportunity to explore each student's interests and learning styles, as well as implementing holistic evaluation (Siswadi & Juwan, 2024). Dwita and Zulfitria (2024) provides a more thorough explanation of the Emancipated Learning Curriculum, which is an educational concept that emphasizes students' freedom to access, select, and manage their own learning process in

accordance with unique interests, talents, and needs in order to create a welcoming, flexible, and time-sensitive learning environment. Apart from that, in the learning process, the Emancipated Learning curriculum focuses on essential material, is project-based, as seen in the project to strengthen the Pancasila student profile, and emphasises differentiated learning (Rohmah & Andriansyah, 2024; Ummah & Nadlir, 2023). Apart from that, this curriculum also emphasizes aspects of character building of students in the form of strengthening the Pancasila student profile, which aims to create lifelong students who are competent, have character, and behave according to Pancasila values (Febrianti et al., 2024). Furthermore according to Maulidya and Indriani (2023), the Emancipated Learning Curriculum is characterized by applying more interactive and collaborative learning methods that focus on developing 21st-century skills. Karuniawati (2022) added that this curriculum was initiated to create a happy school and give students the freedom to learn at their own pace without any burden or coercion.

In terms of the role of teachers, the Emancipated Learning Curriculum is considered as a point of change in terms of learning carried out by teachers. The role of the teacher is very vital, as stated by Suryaningsih and Purnomo (2023) that the success of the Emancipated Learning Curriculum implementation is very dependent on the teacher's readiness to face it. Through this curriculum, teachers are expected to be able to develop their potential through interesting, fun, and meaningful learning (Millati, 2021). Besides, the Emancipated Learning curriculum also changes the role of teachers, who previously carried out their roles mostly around transmitting information and are now evolving to become learning facilitators (Siswadi & Juwan, 2024). From the students' perspective, the Emancipated Learning Curriculum becomes a new space for them to learn by adapting to their interests and talents, which is also known as differentiated learning (Karuniawati, 2022; Rohmah & Andriansyah, 2024; Ummah & Nadlir, 2023). The Emancipated Learning Curriculum is seen as a framework for a more inclusive and flexible student educational environment (Dwita & Zulfitria, 2024; Muhammadiah et al., 2023).

In implementing the Emancipated Learning curriculum, technology integration is inevitable. Technology integration in education aims to facilitate learning by using available technological resources (Millati, 2021). Technology in education can promote learning and is believed to improve learning outcomes (Karuniawati, 2022). Furthermore, according toSiswadi and Juwan (2024), technology is believed to have a crucial role in changing the way of learning, accessing information, and interacting with knowledge, as well as creating a learning environment that supports creativity, exploration, and innovation. This technology integration must, of course, be addressed and embedded holistically. According to Suweta (2023), integrating technology into the curriculum is not only about mastering digital tools but also building the right understanding and attitude towards technology.

The integration of technology into the curriculum faces challenges. A series of challenges are believed to be obstacles to the effectiveness of technology integration, such as lack of supporting infrastructure, inadequate teacher training, limited references for technology integration, security and privacy issues, as well as potential problems that can arise in student character (Hakim & Abidin, 2024; Muhammadiah et al., 2023; Siswadi & Juwan, 2024; Suryaningsih & Purnomo, 2023). However, several studies that have been conducted in the context of implementing the Emancipated Learning curriculum in Indonesia propose several zconsideration by both teachers and

stakeholders, especially in terms of joint efforts in the form of collaboration to solve all the challenges that arise (Hakim & Abidin, 2024).

Although much research has discussed technology integration in education, not much research specifically examines the challenges and potential of integrating technology into Emancipated Learning policy. Starting from this gap, this article aims to analyze the challenges and opportunities of technology integration in Emancipated Learning Curriculum Implementation, including implementing the latest technology, identifying obstacles and opportunities that can be maximised in learning, and the solutions offered. This article begins by discussing the concept of the Emancipated Learning Curriculum in general and the importance of integrating technology into learning. Then, it will continue with a methodology section, examining the data collection and analysis methods. After that, there will be a discussion and analysis of the implementation of the Emancipated Learning Curriculum, the integration of technology into the policy, the challenges and opportunities that arise from technology integration, as well as the solutions offered to overcome the difficulties and also to make the integration of technology into the Emancipated Learning learning policy better in the future. This article closes with conclusions and suggestions for further research on this topic.

Methodology

This research was conducted to determine the challenges and opportunities in integrating technology to implement the Emancipated Learning Curriculum and uses literature-based study as a research methodology. Literature-based study is research that uses existing literature such as articles, books, and other written sources to then analyse and synthesize based on the written research topic with the aim of providing a more comprehensive understanding of the topic being researched (Jerome et al., 2024).

In conducting a literature based study, there are several stages that must be carried out. The first is to determine the objectives of the research being carried out, then proceed with conducting thorough observations of studies on similar topics by accessing several database websites, then determining several literatures that are in accordance with the research objectives, and reporting the results of the analysis and synthesis of the literature selected (Alphonse, 2023). Based on this theory, in this research similar steps were carried out to ultimately produce an analysis that can answer the questions of this research. After preparing objectives and research questions, the next step is to look for literature that suits the research topic. The keywords used to find relevant literature are "Emancipated Learning Curriculum", "Technology Integration in Education", and "Challenges and Opportunities in Integrating Technology in Emancipated Learning Curriculum". The selected literature is literature published in the period 2018 to 2024 and written in both English and Indonesian, and published on research database websites such as SINTA, Google Scholar, ERIC, and Scopus. The research context in this literature must be in Indonesia, and the education levels used as research objects are primary and secondary education levels, without involving higher education levels.

From the search results, 26 articles were found that were appropriate to this research topic. Then, an in-depth review and observation were carried out again so that the number narrowed down to 16 articles remaining. These articles were then analysed using thematic analysis. Thematic analysis is a method used to identify, analyse and report themes contained in data which includes a thorough search of the data set to find response patterns or meaning (Braun & Clarke, 2006). Still referring Braun and Clarke (2006), they recommend a number of steps for doing a

thematic analysis, including getting acquainted with the data, creating preliminary codes, looking for themes, evaluating themes, defining and labelling themes, and producing a report. Departing from this suggestion, this research will use the phases suggested by Braun and Clarke.

Finding and Discussion

Challenges in Integrating Technology to Emancipated Learning Curriculum

The Emancipated Learning curriculum, as proposed by Hakim and Abidin (2024), presents a significant challenge for teachers in adapting technology into their teaching practices. Teachers are expected to not only possess knowledge about the available technologies but also to have experienced successful models of computer integration in their teaching and learning environments. This requirement poses a significant hurdle, as teachers may be comfortable in their traditional teaching methods and reluctant to adopt new technologies that are not aligned with their existing pedagogical beliefs.

Another challenge experienced by teachers is the lack of training regarding the integration of technology into the implementation of the Emancipated Learning curriculum (Dwita & Zulfitria, 2024; Hakim & Abidin, 2024; Liriwati, 2023; Suweta, 2023). Many teachers find themselves inadequately prepared to utilize digital tools effectively in their teaching practices. This gap in training not only hinders the delivery of engaging and interactive lessons but also affects the overall learning experience of students. Furthermore, without proper guidance and support, teachers may struggle to align technological resources with the curriculum's goals and objectives. As a result, the potential benefits of technology in enhancing educational outcomes remain largely untapped. Apart from that, the lack of teacher training causes teachers to have a lack of understanding and therefore encounter difficulties in integrating technology which has a direct impact on reducing the quality of teachers as teachers (Muhammadiah et al., 2023; Suryaningsih & Purnomo, 2023).

Another challenge comes from the infrastructure perspective. Limited technological infrastructure is the most widely discussed issue (Hakim & Abidin, 2024; Muhammadiah et al., 2023; Suryaningsih & Purnomo, 2023; Suweta, 2023). Many schools, particularly in rural areas, lack the necessary equipment such as computers, reliable internet access, and updated software. This inadequacy may prevent both teachers and students from fully benefiting from digital learning tools. Furthermore, the maintenance and technical support for existing infrastructure are often insufficient, leading to frequent disruptions in the learning process. As a result, the disparity in technological resources can exacerbate educational inequalities between urban and rural schools.

Indonesia's conditions are very diverse and unequal between regions, giving rise to gaps in the availability of technological infrastructure that can be used by teaching staff. In urban areas, schools often have access to advanced technology and reliable internet connections, enabling teachers to integrate digital tools into their lessons effectively. However, in rural and remote areas, schools frequently struggle with limited access to basic technological resources. Siswadi and Juwan (2024) claim that the technology gap in several regions, especially in large cities and small towns, makes integrating technology into the Emancipated Curriculum uneven. This disparity hampers the ability of teachers in under-resourced areas to provide the same quality of education as their urban counterparts. Consequently, students in these regions are at a disadvantage, missing out on the potential benefits of technology-enhanced learning. Addressing this infrastructure gap is crucial to ensure equitable educational opportunities for all students across Indonesia. This is exacerbated by the

finding that not all educational institutions have access or the ability to adopt technology (Siswadi & Juwan, 2024) because not all schools have physical facilities to support technology such as the availability of electricity, computers and internet networks. Teachers must be as creative as possible to be able to bring technology into learning regardless of all the limitations that exist due to curriculum demands.

As if the lack of technological supporting facilities were not enough, teachers also encounter obstacles in the form of limited references in integrating technology (Muhammadiah et al., 2023). This absence of references could potentially make teachers confused about variations in integrating technology into the learning process. Apart from references, Siswadi and Juwan (2024) added that teachers still lack guidance in integrating technology. Even though there are many sources of information available on the internet, the information is very diverse, and the topics are too broad, which may confuse teachers when choosing the right technique or method for integrating technology in order to achieve good learning outcomes. Security and privacy issues are also challenges that must be overcome if the teachers want to integrate technology into learning under the Emancipated Learning concept (Siswadi & Juwan, 2024; Suweta, 2023). Lack of understanding by teachers and students about protecting personal data in the digital world can lead to problems such as misuse of personal data or accidentally violating ethics and rules in using technology during the learning process.

There is the potential for students to experience a decline in communication skills because they often interact with machines (Karuniawati, 2022). With the increasing integration of technology in education, students are spending more time engaging with digital devices rather than interacting face-to-face with peers and teachers. This shift can lead to a reduction in the development of essential verbal and non-verbal communication skills. Furthermore, reliance on text-based communication, such as emails and messaging apps, can diminish their ability to express themselves clearly and effectively in spoken conversations. Karuniawati (2022) highlights that this trend is particularly concerning in younger students, whose social and communication skills are still developing. Over time, these students may find it challenging to engage in collaborative activities or group discussions. They might also struggle with public speaking and presentations, which are crucial skills in both academic and professional settings.

The difficulty of getting students used to digital literacy is a significant challenge (Suryaningsih & Purnomo, 2023). As technology becomes more integrated into education, it is crucial for students to develop digital literacy skills. However, many students face obstacles in becoming proficient with digital tools and platforms. One major issue is the varying levels of access to technology at home, which can create disparities in students' familiarity and comfort with digital devices. Additionally, some students may lack the foundational skills needed to navigate digital environments effectively, such as typing, using search engines, or understanding online safety. Suryaningsih and Purnomo (2023) note that these gaps in digital literacy can hinder students' ability to engage with digital learning materials and complete assignments efficiently. Teachers also face challenges in providing consistent and effective digital literacy instruction, especially in classrooms with diverse skill levels. Moreover, integrating digital literacy into the curriculum requires ongoing professional development and resources, which are not always readily available. Without adequate support, both students and teachers may struggle to keep up with the demands of a digitally-driven educational landscape. Addressing these challenges is essential to ensure that all

students can develop the digital literacy skills necessary for success in the modern world.

Another issue is that students lose focus on learning due to the distractions provided by digital devices (Siswadi & Juwan, 2024). The imbalance between information and media literacy is a problem because students do not necessarily have good skills in sorting fact from fiction in a digital world that is rich in information (Siswadi & Juwan, 2024). Students' dependence on technology has the potential to cause psychological and social life disorders (Siswadi & Juwan, 2024). Moreover, the lack of parental involvement in their children's digital world can exacerbate these issues (Siswadi & Juwan, 2024). There are also potential problems in managing collaboration between students, as digital tools can sometimes hinder effective teamwork (Siswadi & Juwan, 2024).

Another challenge is addressing the varying levels of students' ability and readiness to use different technologies (Liriwati, 2023). These issues highlight the complex nature of integrating technology into education. Ensuring that students can navigate the digital world safely and effectively requires a multifaceted approach. This includes improving digital literacy education, enhancing parental involvement, and providing better support for teachers. By addressing these challenges, we can create a more balanced and effective educational environment.

Opportunities in Integrating Technology to Emancipated Learning Curriculum

One of the foremost advantages of integrating technology into the Emancipated Learning curriculum is its significant boost to digital literacy among teachers and students. According to research by Hakim and Abidin (2024), digital integration not only enhances digital literacy but also strengthens collaboration within teacher-learning communities. Teachers can create more adaptive and inclusive learning environments by incorporating digital tools and resources into the curriculum. This technological integration makes the curriculum more responsive to the needs of students, particularly through innovative technological approaches. As a result, students become better equipped with the necessary skills to navigate and thrive in a digital world, preparing them for future academic and professional endeavor.

Technology also plays a crucial role in addressing various learning challenges, particularly those related to abstract concepts and complex subjects. Karuniawati (2022) highlights that technology in the Emancipated Learning curriculum helps students overcome obstacles such as difficulty in understanding abstract concepts, reasoning about past events, and observing very small or very large objects. Through the use of simulations, virtual reality, and interactive models, students can visualize and engage with complex topics in a more tangible way. This not only enhances comprehension but also makes learning more engaging and enjoyable. Furthermore, technology allows for the creation of dynamic and interactive learning experiences that can be tailored to individual learning styles and needs, thereby fostering a deeper understanding of the subject matter.

Efficiency in time management is another significant benefit of integrating technology into the Emancipated Learning curriculum. Karuniawati (2022) notes that technology helps teachers allocate time more efficiently and reduce the number of learning stages required to achieve educational objectives. This increased efficiency allows teachers to focus more on personalized instruction and less on administrative tasks. Additionally, technology provides opportunities for implementing differentiated learning strategies, catering to the diverse needs of students. By leveraging digital tools, teachers can create personalized learning

plans that adapt to the pace and style of each student, ensuring that all learners have the opportunity to succeed. This approach may not only enhance academic outcomes but also foster a more inclusive and supportive learning environment.

The use of technology in the Emancipated Learning curriculum can significantly enhance student autonomy and creativity. Muhammadiah et al. (2023) argue that technology empowers students to learn independently and flexibly, thus increasing their creativity. With access to a wealth of digital resources and tools, students can explore topics of interest, conduct research, and engage in creative projects. This autonomy probably encourages students to take ownership of their learning, fostering a sense of responsibility and intrinsic motivation. Additionally, technology facilitates the development of critical thinking and problem-solving skills as students navigate digital platforms and resources. The ability to learn independently and creatively is believed to be crucial in preparing students for the demands of the 21st century, where adaptability and innovation are key.

Furthermore, technology may ease the burden on teachers and enhance the interaction process between teachers and students. Muhammadiah et al. (2023) emphasize that technology aids in more effective learning arrangements and supports better communication between teachers and students. By utilizing digital communication tools, teachers can provide timely feedback, conduct virtual office hours, and facilitate online discussions. This enhanced interaction fosters a more connected and supportive learning community. Additionally, technology enables teachers to plan, manage, develop, and evaluate learning more effectively (Mulyanto & Hery Yoenanto, 2022). With access to digital analytics and assessment tools, teachers can monitor student progress in real-time and make data-driven decisions to improve instructional strategies.

Inclusivity and democratization of education are also significantly advanced through the integration of technology into the Emancipated Learning curriculum. Siswadi and Juwan (2024) assert that technology creates a learning environment that is inclusive, dynamic, and relevant to contemporary demands. By providing equal access to digital resources and learning opportunities, technology helps bridge educational gaps and promote equity. The democratization of education through technology allows for more equitable access to quality education, regardless of geographic or socioeconomic barriers. This inclusivity fosters a more diverse and enriched learning experience where all students can thrive. Additionally, technology supports the creation of a more holistic and relevant educational paradigm that is responsive to the needs of a rapidly changing world.

Solutions to Overcome the Challenges

A critical solution for overcoming the technical obstacles in integrating technology is fostering collaborative efforts between schools, government bodies, teachers, and the community. Hakim and Abidin (2024) emphasize the importance of these partnerships in navigating the complexities of technological integration. By working together, these stakeholders can pool resources, share expertise, and develop comprehensive strategies to address issues such as funding, training, and technical support. This collaborative approach ensures that all parties are aligned in their goals and can effectively support the implementation of technology in the curriculum.

Improving facilities and infrastructure is another crucial solution. Suryaningsih and Purnomo (2023) highlight the need for enhanced infrastructure, including the provision of audio-visual spaces for learning. Modern educational technology requires robust and reliable infrastructure to function effectively. This includes high-speed

internet, up-to-date hardware and software, and dedicated spaces where students can engage with digital learning tools. Investment in these areas is essential to create an environment where technology can be seamlessly integrated into everyday learning activities.

Teachers play a pivotal role in the successful integration of technology. According to Febrianti et al. (2024), teachers must innovate learning models that attract students' interest and motivate them to engage with digital platforms. This innovation can take many forms, such as incorporating gamification, using interactive multimedia, and developing project-based learning activities that leverage technology. By making learning more engaging and relevant to students' lives, teachers can foster a more positive attitude towards digital learning. Furthermore, continuous professional development is essential for teachers to stay updated with the latest technological advancements and pedagogical strategies. This ongoing training ensures that teachers are confident and competent in using technology to enhance their teaching.

Security and privacy are paramount concerns when integrating technology into education. Stricter policies and measures must be in place to protect students' data and privacy. Alongside these policies, there should be a focus on continuous professional development for teachers to ensure they are well-versed in the latest security protocols and technologies. As Siswadi and Juwan (2024) recommend, this dual approach of robust policies and well-trained staff can significantly mitigate the risks associated with digital learning environments. Additionally, developing data security and privacy policies, as suggested by Dwita and Zulfitria (2024), can help safeguard sensitive information and build trust among students, parents, and teachers.

A more holistic and responsive approach to student development is also essential. Siswadi and Juwan (2024) advocates for utilizing technology to address individual student needs more effectively. This can be achieved through adaptive learning systems that tailor educational content to each student's learning pace and style. By leveraging data analytics, teachers can gain insights into students' progress and challenges, allowing for more personalized and targeted interventions. Furthermore, strengthening character education, particularly in digital literacy, ensures that students not only become proficient in using technology but also understand the ethical implications and responsibilities that come with it.

Balancing digital competence with other essential life skills is another key solution. Siswadi and Juwan (2024) emphasizes the importance of teaching students effective time management and prioritizing outdoor activities. In an era where screen time is increasing, it is crucial to ensure that students maintain a healthy balance between their digital and physical lives. Teachers can incorporate lessons on time management and encourage students to engage in extracurricular activities that promote physical health and social interaction. This balanced approach probably helps students develop a well-rounded skill set that prepares them for the complexities of the modern world.

Improving technological infrastructure within the school environment, enhancing teacher training, and increasing public awareness about the importance of technology in education are also vital steps. Dwita and Zulfitria (2024) suggests that a comprehensive approach that addresses these areas can significantly enhance the effectiveness of technology integration. By ensuring that schools have the necessary infrastructure, teachers are well-trained, and the broader community understands the benefits of technology in education, we can create a supportive environment that fosters successful implementation.

Conclusions

In conclusion, the integration of technology into Indonesia's Emancipated Learning Curriculum presents both significant opportunities and notable challenges. This curriculum, which emphasizes autonomy, creativity, and holistic evaluation, aims to create a flexible and inclusive learning environment. Technology plays a crucial role in enhancing digital literacy, facilitating personalized learning, and fostering student engagement. However, the implementation faces hurdles such as inadequate infrastructure, insufficient teacher training, and the digital divide between urban and rural areas. Additionally, issues like data security, student distraction, and the challenge of maintaining effective communication skills in a digital age further complicate the integration process. Addressing these challenges requires collaborative efforts among stakeholders, continuous professional development for teachers, and significant investments in infrastructure. Moreover, implementing robust security measures and fostering a balanced approach to digital and physical activities are essential. By tackling these obstacles and leveraging the potential of technology, the Emancipated Learning Curriculum can better prepare students for the demands of the 21st century, ensuring equitable and effective educational outcomes across Indonesia. Future research should focus on the long-term impacts of technology integration, exploring effective tools and strategies to maximize benefits and minimize drawbacks in diverse educational settings.

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