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**Research Article**

# Comparative Study of The Implementation of Digital Learning Media in The Merdeka Curriculum in Indonesia and Thailand

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**ABSTRACT**

The Merdeka curriculum is expected to improve the quality of education. Digital technology can affect learning in the Merdeka curriculum. Digital learning media is an intermediary technology that can be used for learning purposes. The aim of this study is to identify differences and similarities in the practice of implementing Merdeka curriculum digital learning technology between Indonesia and Thailand, and analyze the challenges faced. This research uses qualitative descriptive method with comparative study approach. Data was collected through literature study, observation, interviews and documentation. This research was conducted at SD Sekolah Penggerak in Surakarta City, Indonesia and Indonesian School Abroad (SILN) in Bangkok, Thailand. The results showed that the implementation of digital learning media in the Merdeka curriculum and Indonesian schools in Thailand has not much difference in concept and equipment used. The results of this study will provide a better understanding of how digital learning media is applied in the Merdeka curriculum, so that it can be used as an adjustment to improve the effectiveness of education.

**Keywords:** Comparison Study, Implementation, Digital Learning Media, Merdeka Curriculum, Indonesia and Thailand

## 1) INTRODUCTION:

The Merdeka curriculum is one concept that demands autonomy for learners [1]. The emergence of the Merdeka curriculum supports the widespread dissemination of education in Indonesia evenly through affirmative policies established by the government [2]. The Merdeka Curriculum aims to restore the declining quality of learning and prepare the golden generation for 2045 [3]. The Merdeka Curriculum encompasses three types of learning activities, including intracurricular learning conducted differentially to provide learners with sufficient time to delve into concepts and strengthen competencies, cocurricular learning in the form of the Pancasila Student Profile strengthening project which adopts interdisciplinary learning principles for character and general competency development, as well as extracurricular learning tailored to student interests and educator unit resources [4].

The implementation of the curriculum is influenced by various factors such as teacher profiles, institutional support, and resource availability [5]. Strategies for effective curriculum implementation include implementation planning, utilization of primary and additional resources, classroom instruction, and monitoring and evaluation procedures [6]. The curriculum implementation process requires the involvement of teachers, school principals, and other stakeholders, as well as comprehensive and integrated resource management [7]. The success of curriculum implementation depends on factors such as goal orientation, relevance, efficiency, flexibility, continuity, balance, integration, and quality [8]. Additionally, digital technology also has a significant impact on learning in the Merdeka curriculum. Implementing digital technology in learning can enhance students' performance in discovering new things [9].

The advancement of technology has impacted the management of learning in schools, requiring a significant role from teachers in addressing global challenges through creativity in teaching [10]. The utilization of technology can

enhance teachers' innovation in delivering lessons, and innovation in the use of digital media or supporting devices can reduce learning barriers and aid in students' learning success [11]. Digital learning media serves as an intermediary technology for learning purposes and is a useful physical and communication tool for delivering lessons with the aim of improving the quality of learning [12]. Digital learning media in the Merdeka curriculum is aligned with the programmed digitization of *sekolah penggerak*, which digitize several aspects of teaching as well as school management reports. The existence of a *Merdeka* curriculum motivates educators to adopt greater flexibility in crafting lessons, prioritizing numerical skills, and leveraging digital tools to delve into community-specific scenarios [13].

The Merdeka curriculum has brought about positive changes in the Indonesian education system. Recognizing these impacts, the implementation of this curriculum is currently being prepared at the Indonesian Schools Abroad (SILN). SILN is a formal educational institution conducted outside the country and operates based on national education regulations and systems. The contribution of SILN to the field of education is evident in providing educational access to Indonesian children abroad [14].

The Merdeka curriculum is expected to enhance the overall quality of education through reforms in its planning, implementation, and evaluation processes. Emphasizing freedom and flexibility for teachers, students, and schools, the Merdeka curriculum aims to develop education tailored to each educational unit. However, in its implementation observed in Indonesia, there are still several gaps that require improvement for it to function effectively. This is supported by research conducted by Hariani et al. (2023) which found that in the implementation of the Merdeka curriculum, teachers' understanding and skills in applying creative and innovative teaching methods, school environment conditions, facilities and infrastructure, as well as human resources, are still lacking [15]. Additionally, teachers still face difficulties in developing teaching materials for the Merdeka curriculum [16].

This research is crucial for comparing the implementation of digital learning media in the Merdeka curriculum in both Indonesia and Thailand, enabling the findings to serve as a foundation for policy-making by relevant authorities. Additionally, by comparing the application of digital learning media in the Merdeka curriculum between the two countries, collaboration can be fostered to improve curriculum management and learning practices. It is hoped that this collaborative effort will enhance the quality of education by understanding the similarities and differences in curriculum implementation between the two country.

Comparison research has been conducted by Muryanti & Herman (2021), examining the elementary education system in Indonesia and Finland [17]. The study found that Finland enjoys tremendous government support, reflected in school facilities, teacher qualifications, educational equality, and adequate distribution compared to Indonesia. Furthermore, another study by Lestari (2024) compared the implementation of mathematics teaching between the Merdeka curriculum and the Japanese curriculum [18]. The findings revealed that the Merdeka curriculum in Indonesia emphasizes contextual approaches and creativity, while the Japanese curriculum focuses on problem-solving and implements the Lesson Study method, emphasizing the development of students' logical and creative thinking abilities. Additionally, research by Efendi & Lien (2020) investigated the comparison of elementary school curricula in Indonesia and Singapore [19]. It concluded that the elementary school curriculum in Indonesia should support basic education with a curriculum that is not overly challenging for teachers and students, suggesting the adoption of the Singaporean curriculum, which emphasizes mastery of content, practice, exam preparation, and maximal utilization of learning materials.

Based on previous research, the researchers are interested in investigating the comparison of digital learning technology in the Merdeka curriculum at elementary schools in Indonesia and Thailand. This research aims to identify differences and similarities in the implementation practices of digital learning technology within the Merdeka curriculum between the two countries, and analyze the challenges faced. Therefore, it is hoped that this research can contribute to the development of the quality of the Merdeka curriculum for schools in Indonesia as well as Indonesian schools abroad.

## 2) METHODS AND METHODOLOGY:

This research employs a qualitative descriptive method with a comparative study approach. Data collection methods include literature review, observation, and interviews. The study is conducted at Sekolah Penggerak Elementary School in Surakarta, Indonesia, and the Indonesian School Abroad (SILN) in Bangkok, Thailand. Data analysis techniques utilize Miles and Huberman's analysis technique. The Miles and Huberman data analysis method used in this research is conducted continuously and interactively. The stages of Miles and Huberman data analysis consist of data collection, data reduction, data display, and conclusion drawing or verification. Data validity is tested using triangulation technique, which involves testing data from the same source using different methods. Three methods, namely observations, interviews, and documents, are used by the researcher to evaluate data validity [20]. The research procedure begins with data collection, reduction, data display, and conclusion drawing[21]. The research was conducted in March 2024.

## 3] RESULTS AND DISCUSSION

### Implementation of Digital Learning Media in the *Merdeka* Curriculum

Based on observations, elementary schools in Indonesia have begun to utilize interactive digital learning media involving multimedia audio-visual elements, making learning more engaging for students and effective. Digital devices such as laptops, computers, LCD projectors, and speakers are utilized in the learning process in Indonesian schools. Schools have provided digital tools to support more engaging and interactive learning as shown in Figure 3 (a) and Figure 3 (b).

**Figure 3 (a)** Utilization of digital media in learning at Indonesian schools

**Figure 3 (b)** Utilization of Computers in Learning

Digital media plays a crucial role in the Merdeka curriculum at elementary schools, used to create relevant and innovative learning resources. This is in accordance with the results of interviews with teachers who stated that digital learning media, especially audio-visual, can increase student activity in the classroom. Technology can assist teachers in managing assessments [22]. The adoption of digital technology in the education system has enhanced teaching and learning [23]. Moreover, teachers utilize various learning software such as interactive applications and educational games, as well as online learning platforms like Quizizz, Kahoot, ClassDojo, etc such as shown in figure 3(c). Learning technology, especially interactive animated learning media, can be utilized to support online learning activities and enhance student autonomy [24]. By utilizing interactive animated educational tools, elementary students can systematically, effectively, and enjoyably enhance their skills while learning [25].

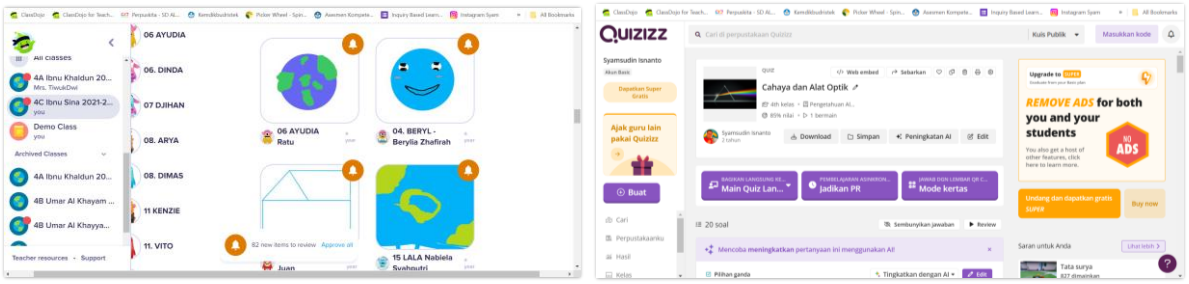


**Figure 3 (c)**. Utilization of Online Learning Platforms

Schools also provide training to teachers on how to effectively integrate digital technology into learning to enhance the efficiency of teaching and prepare students for the digital era such in Figure 3 (d). Training becomes the most effective way to enhance teachers' digital competence by providing them with experiences in integrating digital technology into teaching [26]. The enhancement of teachers' proficiency in integrating technology has emerged as a focal point in teacher education [27].

**Figure 3 (d)** Teacher Training on the Integration of Digital Technology in Learning

On the other hand, based on observations of the implementation of the *Merdeka* Curriculum both in Indonesian elementary schools and in schools in Bangkok, Indonesia, there is not much difference. The use of digital learning media in Thailand is relatively similar to the use of LCD projectors, computers, and laptops, as well as speakers and microphones such in figure 3 (f). Schools in Thailand have interactive whiteboard technology infrastructure such in Figure 3 (e) that is not yet available in Indonesian schools. Interactive Whiteboard (IWB) is an active tool to support learning that allows students and teachers to present various sources such as videos, photos, sounds, diagrams, and graphics, and even allows the use of fingers for writing, which is excellent for kinesthetic learners [28]. Education in Thailand has undergone one reform, namely the introduction of Information and Communication Technology (ICT) from an early age through a program called One Tablet Per Child, abbreviated as OTPC [29].

**Figure 3 (e).** Utilization of Interactive Whiteboards in Elementary Schools in Thailand

Schools have adopted various forms of digital technology to enhance students' learning experiences. One of the primary forms is the use of computers and the internet, which enables teachers and students to access learning resources. Digital learning fosters creativity and gives students a sense of achievement, encouraging additional learning by thinking beyond traditional techniques [30].

**Figure 3 (f).** Utilization of Speakers and Microphones in Elementary Schools in Thailand

**The Challenges of Implementation of Digital Learning Media**

The integration of digital technology in elementary school learning within the *Merdeka* Curriculum faces several challenges and obstacles that need to be addressed by schools, teachers, and students. Schools often encounter infrastructure limitations, such as unstable internet access and inadequate computer devices. Poor infrastructure will restrict students' ability to access the internet [31]. Thus, internet access is key to the successful utilization of digital media in learning. Additionally, some teachers still face difficulties in applying digital technology in teaching. This aligns with the opinion of Zaenab et al. (2023), stating that one of the problems faced by teachers is the difficulty in using digital platforms for teaching due to limited mastery of technology for learning [32].

Based on interview and observation, the implementation of digital learning media in Indonesian schools in Thailand also faces similar challenges and obstacles. One of the main challenges is the inadequate availability of technological infrastructure. Additionally, Indonesian schools in Thailand also struggle to find digital learning content that aligns with the Indonesian curriculum and meets desired quality standards. Other challenges include the lack of training and skill development for teachers in integrating digital technology into learning, as well as issues related to Thai government policies and regulations regarding the use of technology in education. Collaborative programs with international organizations have played a crucial role in enhancing education, with a focus on language and cultural differences as the main challenges [33]. Technology, particularly ICT-based learning media, has significantly boosted students' motivation, understanding, and academic performance in thematic learning. In addressing these challenges, Indonesian schools in Thailand need to collaborate with various stakeholders, including the government, educational institutions, and local communities, to find effective solutions.

## 4] CONCLUSION

Overall, the use of digital learning media in elementary schools in Indonesia and Indonesian schools abroad, such as in Bangkok, Thailand, shows little difference. The adoption of interactive digital learning media has begun to be widely implemented in elementary schools both in Indonesia and Thailand. This has brought about positive changes in the effectiveness of learning, increased student engagement, and created more interesting and relevant learning resources. However, challenges such as inadequate availability of technological infrastructure, difficulties in finding learning content that aligns with the curriculum, and the need for training and skill development for teachers still need to be addressed. Collaboration between schools, governments, educational institutions, and local communities is crucial in facing these challenges and finding effective solutions. With collective efforts, it is hoped that the use and integration of digital technology in elementary school education will continue to improve to support better educational outcomes in the future.

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## REFERENCES:

[1] J. B. Manalu, P. Sitohang, N. Heriwati, and H. Turnip, “Prosiding Pendidikan Dasar Pengembangan Perangkat Pembelajaran Kurikulum Merdeka Belajar,” *Mahesa Cent. Res.*, vol. 1, no. 1, pp. 80–86, 2022, doi: 10.34007/ppd.v1i1.174.

[2] A. F. Nasution, S. Ningsih, M. F. Silva, L. Suharti, and J. P. Harahap, “Konsep Dan Implementasi Kurikulum Merdeka,” *Compet. J. Educ.*, vol. 2, no. 3, pp. 201–211, 2023, doi: 10.58355/competitive.v2i3.37.

[3] H. K. Wardani, Sujarwo, Y. Rakhmawati, and P. Cahyandaru, “Eanalysis of the Impact of the Merdeka Curriculum Policy on Stakeholders At Primary School,” *J. Ilm. Peuradeun*, vol. 11, no. 2, pp. 513–530, 2023, doi: 10.26811/peuradeun.v11i2.801.

[4] P. R. Rani, M. Asbari, V. Ananta, and I. Alim, “Kurikulum Merdeka : Transformasi Pembelajaran yang Relevan, Sederhana, dan Fleksibel,” *J. Inf. Syst. Manag.*, vol. 02, no. 06, pp. 78–84, 2023.

[5] R. Nadhifah, “Implementasi Kurikulum 2013 dan Kurikulum Merdeka Belajar di SDN 1 Ngawonggo Kecamatan Tajinan,” *Proc. Ser. Educ. Stud.*, pp. 340–349, 2013, [Online]. Available: http://dx.doi.org/10.17977/um083.7902

[6] H. Acosta, D. Cajas, D. Isaac, and R. Garnica, “Linking Teachers’ Profiles to their Capability in Curriculum Implementation: Analysis of Factors that Shape and Influence EFL Classes,” *Int. J. Learn. Teach. Educ. Res.*, vol. 22, no. 5, pp. 518–537, 2023, doi: 10.26803/ijlter.22.5.26.

[7] N. R. Sukriani, “Implementasi Kurikulum Gabungan Terkait Evaluasi Hasil Belajar Peserta Didik Pada SDN Sumbersari 3,” *Proc. Ser. Educ. Stud.*, vol. 1, no. 1, pp. 223–232, 2023.

[8] N. Haris, R. Z. Ali, and M. Erihadiana, “Implementation Of Curriculum Development Based On Ktsp Principles At Sd Negeri Cibiru 06 Cileunyi Bandung City,” *As- SABIQUN J. Pendidik. Islam Anak Usia DiniSABIQUN J. Pendidik. Islam Anak Usia Dini*, vol. 5, no. 2, pp. 441–458, 2023, doi: https://doi.org/10.36088/assabiqun.v5i2.2962.

[9] F. A. Hidajat, L. D. Haeruman, E. D. Wiraningsih, and D. S. Pambudi, “The Effect of Digital Technology Learning Based on Guided Discovery and Self-regulated Learning Strategy on Mathematical Creativity,” *Int. J. Inf. Educ. Technol.*, vol. 13, no. 3, pp. 535–543, 2023, doi: 10.18178/ijiet.2023.13.3.1836.

[10] I. Kusmaryono and M. A. Basir, “Learning media projects with YouTube videos: a dynamic tool for improving mathematics achievement,” *Int. J. Eval. Res. Educ.* , vol. 13, no. 2, pp. 934–942, 2024, doi: 10.11591/ijere.v13i2.26720.

[11] R. Amelia, Zamzani, A. Mustadi, A. Suriansyah, and Aslamiah, “Student’s acceptance of the Nearpod application: an investigation in elementary school,” *Int. J. Eval. Res. Educ.* , vol. 13, no. 2, pp. 682–692, 2024, doi: 10.11591/ijere.v13i2.26619.

[12] F. G. Tsuraya, N. Azzahra, S. Azahra, and S. P. Maharani, “Implementasi Kurikulum Merdeka Di Sekolah Penggerak,” *J. Pendidikan, Bhs. dan Budaya*, vol. 1, no. 4, pp. 179–188, 2022, doi: 10.57216/pah.v18i2.480.

[13] D. S. Nusantara, Zulkardi, and R. I. Indra Putri, “How to Design PISA-like Digital Mathematics Problems: A Preliminary Study,” *AIP Conf. Proc.*, vol. 3046, no. 1, p. 194756, 2024, doi: 10.1063/5.0194756.

[14] K. Amalia, E. Roesminingsih, S. Andari, and ..., “Pelatihan Pemahaman Cp Dan Penyusunan Tp Serta Atp, Dan Pembelajaran Berdiferensiasi Dalam Kurikulum Merdeka,” *DEDICATE J. ...*, vol. 2, no. 2, pp. 12–21,

2023, [Online]. Available: https://journal.unesa.ac.id/index.php/dedicate/article/view/26858
[15] A. Hariani, K. Nabila Puteri, and H. D. Silaban, "Problematika Implementasi Kurikulum Merdeka Di Sekolah Dasar," *Semin. Nas. Has. Ris. dan Pengabdi.*, pp. 686–692, 2023.
[16] S. Zulaiha, T. Meldina, and Meisin, "Problematika Guru dalam Menerapkan Kurikulum Merdeka Belajar," *J. Pendidik. dan Pembelajaran Dasar*, vol. 9, no. 2, pp. 163–177, 2022.
[17] E. Muryanti and Y. Herman, "Studi Perbandingan Sistem Pendidikan Dasar di Indonesia dan Finlandia," *J. Obs. J. Pendidik. Anak Usia Dini*, vol. 6, no. 3, pp. 1146–1156, 2021, doi: 10.31004/obsesi.v6i3.1696.
[18] D. E. Lestari, "Studi Komparasi Pelaksanaan Pembelajaran Matematika Pada Kurikulum Merdeka dengan Kurikulum Jepang," *J. Ilm. Profesi Pendidik.*, vol. 9, no. 1, pp. 40–46, 2024, doi: 10.29303/jipp.v9i1.1830.
[19] M. Y. Efendi and H. N. Lien, "The Comparison of Elementary Curriculum Education between Indonesia and Singapore," *J. Teach. Learn. Elem. Educ.*, vol. 3, no. 1, p. 22, 2020, doi: 10.33578/jtlee.v3i1.7323.
[20] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: ALFABETA, CV, 2015.
[21] M. B. M. Miles and A. M. Huberman, *Qualitative data analysis: a methods sourcebook*, vol. 4, no. 1. SAGE Publications, Inc, 2014.
[22] Rusman, B. Setiawan, Z. Arifin, and D. Sukirman, "The Analysis of Indonesian First New Curriculum Launching and Implementation Towards Freedom of Learning Best Practice Empowering Character Building and Pedagogical Competence Sustainability," *Kurd. Stud.*, vol. 12, no. 1, pp. 1808–1820, 2024, doi: 10.58262/ks.v12i1.125.
[23] S. Mhlongo, K. Mbatha, B. Ramatsetse, and R. Dlamini, "Challenges, opportunities, and prospects of adopting and using smart digital technologies in learning environments: An iterative review," *Heliyon*, vol. 9, no. 6, p. e16348, 2023, doi: 10.1016/j.heliyon.2023.e16348.
[24] N. Hidayati, L. Roesdiana, and B. N. Sari, "Response Analysis Of Elementary School Students To Learning Media of Animated," *AIP Conf. Proc.*, vol. 3046, no. 1, p. 194583, 2024, doi: 10.1063/5.0194583.
[25] T. Muhtarom and Danuri, "The urgency of Interactive Animated Learning Media Development for Facilitating Literate Skills for the Student of Primary School," *J. Phys. Conf. Ser.*, vol. 1254, no. 1, 2019, doi: 10.1088/1742-6596/1254/1/012034.
[26] S. K. Howard, J. Tondeur, J. Ma, and J. Yang, "What to teach? Strategies for developing digital competency in preservice teacher training," *Comput. Educ.*, vol. 165, no. January, 2021, doi: 10.1016/j.compedu.2021.104149.
[27] M. N. Kholid *et al.*, "A systematic literature review of Technological, Pedagogical and Content Knowledge (TPACK) in mathematics education: Future challenges for educational practice and research," *Cogent Educ.*, vol. 10, no. 2, 2023, doi: 10.1080/2331186X.2023.2269047.
[28] M. A. Qader, "The Role of Interactive Whiteboards for Enhancing Teaching and Learning in Higher Education," *Indones. J. Curric. Educ. Technol. Stud.*, vol. 9, no. 1, pp. 19–24, 2021, doi: 10.15294/ijcets.v9i1.48453.
[29] Yunardi, "Sistem Pendidikan di Thailand," *Kant. Atase Pendidikan, Kedutaan Besar Republik Indones. Bangkok*, pp. 1–45, 2014, [Online]. Available: atdikbudbangkok.org
[30] A. Haleem, M. Javaid, M. A. Qadri, and R. Suman, "Understanding the role of digital technologies in education: A review," *Sustain. Oper. Comput.*, vol. 3, no. February, pp. 275–285, 2022, doi: 10.1016/j.susoc.2022.05.004.
[31] Z. M. Basar, A. N. Mansor, K. A. Jamaludin, and B. S. Alias, "The Effectiveness and Challenges of Online Learning for Secondary School Students - A Case Study," *Asian J. Univ. Educ.*, vol. 17, no. 3, pp. 119–129, 2021, doi: 10.24191/ajue.v17i3.14514.
[32] Z. Zaenab, I. Hidayah, and A. Wahyudin, "Implementation of the Independent Curriculum in Digital Literacy Trainingfor Interactive Learning Media to ImprovePedagogic Competencies of Teachers in MTsN Gowa Regency," *ISET Int. Conf. Sci. Educ. Technol.*, pp. 899–906, 2023, [Online]. Available: https://proceeding.unnes.ac.id/index.php/iset
[33] P. A. A. Putra *et al.*, "Development of Digital Learning Based International Cooperation in Elementary School Teachers," *Int. J. Educ. Rev. Law Soc. Sci.*, vol. 3, no. 5, pp. 1504–1512, 2023, doi: 10.54443/ijerlas.v3i5.979.