Hipkin Journal of Educational Research | e-ISSN 1234-5678 & p-ISSN 1234-5678
Volume 2 No 2 (2024) 143-154

Hipkin Journal of Educational Research
http://ejournal-hipkin.or.id/index.php/hipkin-jer/

The implementation of Informatics subject in the Kurikulum Merdeka at SMP 26 Bandung

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ABSTRACT

This study aims to describe the implementation of the Informatics subject within the Merdeka Curriculum at SMP 26 Bandung. A qualitative descriptive method was employed, with data collected through in-depth interviews, classroom observations, and literature review. The findings indicate that although the implementation has been initiated, it still faces several challenges such as the lack of teachers with an Informatics background, inadequate facilities, and suboptimal teaching and assessment methods. The Informatics subject primarily focuses on developing basic skills, particularly in using Microsoft Office, and does not group students based on their ability levels. Nevertheless, this approach has encouraged peer collaboration and fostered a supportive learning environment. To enhance learning effectiveness, ongoing professional development for teachers, especially those from non-informatics disciplines, is essential. The study also highlights the potential of cross-disciplinary learning to enrich digital literacy. Overall, the research emphasizes the need for strengthening teacher capacity, institutional support, and adequate learning infrastructure as strategic efforts to ensure the delivery of relevant, inclusive, and adaptive Informatics education in response to the evolving demands of the digital era.

ARTICLE INFO

Article History:
Received: 4 Apr 2025
Revised: 15 Jul 2025
Accepted: 26 Jul 2025
Available online: 11 Aug 2025
Publish: 29 Aug 2025

Keywords:
education curriculum; Informatics subjects; Kurikulum Merdeka

Open access
Hipkin Journal of Educational Research is a peer-reviewed open-access journal.

ABSTRAK

Penelitian ini bertujuan untuk mendeskripsikan implementasi mata pelajaran Informatika dalam Kurikulum Merdeka di SMP 26 Bandung. Metode yang digunakan adalah deskriptif kualitatif dengan teknik pengumpulan data melalui wawancara mendalam, observasi, dan studi kepustakaan. Hasil penelitian menunjukkan bahwa implementasi pembelajaran Informatika telah berjalan meskipun menghadapi sejumlah kendala, seperti keterbatasan guru yang memiliki latar belakang dalam bidang Informatika, sarana prasarana yang belum memadai, serta belum optimalnya metode pembelajaran dan evaluasi yang diterapkan. Mata pelajaran Informatika di sekolah ini difokuskan pada penguasaan keterampilan dasar penggunaan Microsoft Office, tanpa mengelompokkan peserta didik berdasarkan tingkat kemampuan. Namun, pendekatan ini justru mendorong kolaborasi antar peserta didik dan menciptakan lingkungan belajar yang suportif. Untuk mendukung efektivitas pembelajaran, diperlukan pelatihan berkelanjutan bagi guru serta pengembangan pembelajaran lintas mata pelajaran. Penelitian ini menekankan pentingnya penguatan kapasitas pendidik, dukungan kebijakan sekolah, dan penyediaan fasilitas sebagai upaya strategis dalam menghadirkan pendidikan Informatika yang relevan dan adaptif terhadap perkembangan zaman serta kebutuhan peserta didik di era digital.

Kata Kunci: *kurikulum pendidikan; Kurikulum Merdeka; mata pelajaran Informatika*

How to cite (APA 7)
Agustianis, R. T. (2025). The implementation of Informatics subject in the Kurikulum Merdeka at SMP 26 Bandung. *Hipkin Journal of Educational Research, 2*(2), 143-154.

Peer review
This article has been peer-reviewed through the journal's standard double-blind peer review, where both the reviewers and authors are anonymised during review.

https://doi.org/10.64014/hipkin-jer.v2i2.163

INTRODUCTION

The curriculum is a crucial and inseparable component of education. A curriculum is defined as a set of subjects that students must study from beginning to end to achieve educational goals and earn a diploma. According to Law No. 20 of 2003 concerning the National Education System, a curriculum is a set of plans and arrangements that outline objectives, content, learning materials, and methods used as guidelines for organizing learning activities to achieve educational goals. Based on these two statements, it can be concluded that a curriculum is a plan designed to ensure a systematic learning process, achieve educational goals, and provide evidence of learning outcomes through qualifications.

The curriculum is implemented at every level of education, including the junior high school (SMP) curriculum. In Indonesia, the curriculum undergoes an evaluation process at regular intervals (Suja'i, 2023). This often gives rise to the assumption that the curriculum changes in response to changes in policymakers. To achieve Indonesia's educational goals, the curriculum has undergone continuous evolution and innovation since the country's independence. To date, Indonesia still uses the Kurikulum Merdeka with a deep learning approach. Deep learning provides students with opportunities to engage in activities and critically process information, fostering a deeper understanding of the topics taught and enabling them to apply their knowledge to new situations (Sumarto & Harahap, 2025).

The Kurikulum Merdeka was implemented in 2022 by the Minister of Education, Culture, Research, and Technology. The Kurikulum Merdeka, implemented through the "Merdeka Belajar" program, represents a remarkable movement for change. Independent learning refers to a condition in which teachers and students have the freedom to innovate and learn independently and creatively within the teaching and learning process (Nugraheny *et al*., 2023). This freedom aims to train critical thinking and familiarize students with technological developments. These skills will equip students to adapt in the digital age.

Education in the digital age demands adaptation of the learning process to new paradigms, particularly in Informatics subjects at the junior high school level. Therefore, strengthening digital literacy is crucial, given that information and communication technology (ICT) has become widely used in almost all aspects of life (Yuwono, 2024). Computers and digital technology have become an integral part of everyday life, making it crucial to understand basic computer science concepts. Therefore, it is crucial to include informatics subjects in the Kurikulum Merdeka (Nabilah *et al*., 2022).

This research focuses on the implementation of the Kurikulum Merdeka in informatics subjects at the junior high school level. SMP 26 Bandung was chosen as the case study location because the school only began implementing the subject in 2023 and still faces various challenges, particularly limited human resources and infrastructure. Furthermore, there is a lack of research specifically examining the implementation of informatics subjects at the junior high school level following the introduction of the Kurikulum Merdeka, particularly in the city of Bandung.

Based on this background, the purpose of this study is to explore how informatics subjects are implemented in the Kurikulum Merdeka at SMP 26 Bandung. This research is expected to provide insight into developing informatics subjects with a curriculum relevant to industry needs and to improve students' skills in the digital age workforce.

https://doi.org/10.64014/hipkin-jer.v2i2.163

LITERATURE REVIEW

Informatics Curriculum

Curriculum change in Indonesia is an ongoing process that has undergone various revisions and updates over the years. These efforts aim to adapt the curriculum to the increasingly complex needs of society, as technological advances in the modern era have a significant impact on life, including education (Paramita *et al*., 2024). Changes in government structures can lead to adjustments in the curriculum. For example, a change in the presidency is often followed by changes in various elements, such as ideology, politics, economics, and the education system (Herman *et al*., 2023).

One significant development in Indonesian education is the introduction of Informatics, a subject that has been addressed since the 2004 Curriculum through ICT (Information Technology) subjects. Although no longer listed as an independent subject in the 2013 Curriculum, ICT continues to be introduced through school guidance programs. In the Kurikulum Merdeka, ICT has evolved into a part of the Informatics subject, reflecting an expansion of concepts rather than a simplification, and requiring teachers and students to be more creative and innovative in keeping pace with developments in the digital world. ICT has become an integrated part of the learning process (Ashraf *et al*., 2022).

The Kurikulum Merdeka in Informatics encourages students to develop computational thinking skills, including decomposition, pattern recognition, abstraction, and algorithm design. This indicates that students' mastery of these aspects varies and requires further reinforcement in the learning process (Monalisa, 2023). This emphasis on core skills is highly relevant to the goals of 21st-century education, as every individual needs computational thinking. These skills are not only crucial for computer scientists but are equally important as basic skills such as reading, writing, and arithmetic (Prastyo *et al*., 2023). Therefore, students are required to possess higher cognitive skills to face the challenges of the digital world.

The foundation of computational thinking in Informatics learning is a fundamental problem-solving skill that is increasingly important with the rapid development of digital technology. Furthermore, this subject strengthens students' abilities in logic, analysis, and data interpretation, which are essential components of literacy, numeracy, and scientific literacy. Informatics also provides programming skills that support the ability to model and simulate problems using information and communication technology (Nisa *et al*., 2023).

The Kurikulum Merdeka emphasizes the importance of developing digital citizens who are not only proficient in using technology but also able to make positive contributions to modern society. Digital literacy serves as a guideline for the wise and intelligent use of technology, and it also develops students and teachers who are skilled in operating technology for more creative and innovative learning (Dewi & Sunarni, 2024).

In this regard, Informatics supports the strengthening of the Pancasila Student Profile by encouraging students to become critical, independent, and creative individuals through the application of computational thinking. Furthermore, Informatics learning also shapes the character of students with noble morals, the ability to work together, and respect for diversity through collaborative activities involving the use of technology, both in-person and online (Haryanti *et al*., 2025). Therefore, the goal of Informatics learning in the Kurikulum Merdeka is to develop students who not only possess strong digital skills but also possess the ability to think critically, creatively, and responsibly in facing the challenges emerging in today's digital era.

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Informatics Learning in the Kurikulum Merdeka

Through its student-centered approach, the Kurikulum Merdeka empowers teachers to design and implement learning methods tailored to their unique needs and characteristics. This approach encourages teachers to use more adaptive strategies to address classroom learning challenges, including differences in literacy skills among students (Maya *et al*., 2025). This curriculum is designed to be more flexible, allowing educational units to choose and develop curricula tailored to the local context and the needs of students.

The rapid technological developments of the Industrial Revolution 4.0 era have brought significant changes to various aspects of life, including the education sector. This era is characterized by the integration of digital, physical, and biological technologies, transforming the way people live, work, and learn (Yanti *et al*., 2024). This situation requires the education sector to continually adapt and develop learning methods that produce competent graduates ready to compete in the global job market.

This serves as a reference for students to follow the current curriculum, which includes its various required materials. For example, the social impact of technology, computer fundamentals, data analysis, computer networks, and other related fields. This material is taught to keep pace with current developments, namely the digital era. Critical thinking and computational thinking skills are essential for students to develop. The digital industrial revolution also encourages the development of digital skills in educational curricula, such as coding, data science, and cybersecurity, to prepare students for an increasingly technology-based workplace. Technology facilitates global collaboration and communication, enriching students' perspectives through interactions with peers and teachers from various parts of the world (Al-Maskari *et al*., 2024). Furthermore, in the Kurikulum Merdeka, ICT is fundamental in equipping students to face Society 5.0 (Hadiapurwa *et al*., 2021).

Informatics skills encompass not only technological understanding but also critical thinking, problem-solving, and collaboration skills. Therefore, informatics is a crucial component of the primary and secondary education curriculum. To improve learning effectiveness, one model widely used in junior high schools is Project-Based Learning (PBL), which involves students in real-life projects relevant to the material. This approach develops critical and collaborative thinking skills, encouraging inquiry-based learning—a process of systematically, critically, logically, and analytically searching for and investigating information, enabling students to discover knowledge independently (Nugraha *et al*., 2023).

However, the implementation of Informatics learning within the Kurikulum Merdeka also faces various challenges. One of these is teacher readiness to utilize information technology in the learning process. Most teachers have not optimally utilized ICT as a learning medium. This is due to several factors, including limited facilities, a lack of training, and teachers' limited skills in using technology effectively. Furthermore, teachers also face constraints related to limited internet connections and device availability, which pose challenges to implementing digital learning in schools (Melisa, 2024).

Overall, informatics learning in the Kurikulum Merdeka is a strategic effort to develop students who are not only capable of utilizing technology but also of thinking critically, creatively, and ethically when dealing with it. This curriculum contributes to the formation of a generation ready to adapt to technological advances and play an active role in the digital society.

Informatics Learning Methods in the Kurikulum Merdeka

The Kurikulum Merdeka in informatics fosters flexible, meaningful, and real-world learning. Through an innovative approach, this curriculum fosters the development of essential skills, including problem-solving, creativity, collaboration, and critical thinking. The learning process is designed to encourage students to solve problems collaboratively and responsibly, while simultaneously practicing negotiation skills and

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generating appropriate solutions. This enables students to adapt to the demands of the digital era through creativity and innovation in learning.

The most frequently used method in informatics learning is the Project-Based Learning (PBL) approach. In this method, students not only learn theory but also have the opportunity to create real-world solutions to problems by designing technology-based projects, such as applications, websites, or digital simulations. This method has been proven to improve students' practical skills, as well as their collaboration and communication skills (Sari & Ekohariadi, 2024).

The PjBL approach also supports the development of students' communication and collaboration skills. This aligns with research findings showing that project activities have proven effective in improving students' communication skills and learning outcomes. Furthermore, these activities encourage students to actively participate in group discussions and presentations, which are essential for their future professional lives (Rohmatin *et al*., 2022).

In addition to the PjBL method, blended learning is one of the learning methods in the Kurikulum Merdeka. This model combines face-to-face learning with online learning, providing students with flexibility in choosing their learning time and location. Effective implementation can enhance learning outcomes by expanding access to learning materials and resources, and enabling teachers to facilitate more targeted and individualized learning (Harahap *et al*., 2021).

Problem-Based Learning (PBL) methods are also applied in Informatics learning to improve students' ability to solve problems independently and creatively. In practice, this method allows students to explore and analyze real-life problems related to informatics, then develop solutions and present their findings. Thus, this method helps students develop higher-order thinking skills. The application of PBL (Problem-Based Learning) assisted by information technology has proven effective in improving student learning outcomes, which can be applied in the context of Informatics (Aslan, 2021).

Meanwhile, Collaborative Learning emphasizes the importance of collaboration among students in completing assignments or understanding learning concepts. Through group discussions, team exercises, and simulations, students are trained to exchange ideas, respect others' perspectives, and collaborate in problem-solving. Collaborative technology in learning can improve students' communication and collaboration skills, particularly through the use of AI-based applications in multimedia learning (Rostini *et al*., 2023). Furthermore, pedagogical strategies in collaborative learning, such as forming heterogeneous workgroups, developing collaborative assignments, facilitating discussions, and joint evaluations, all play a role in increasing participation and learning effectiveness (Situmorang, 2024).

By implementing various methods such as PjBL, Blended Learning, PBL, and Collaborative Learning, Informatics learning in the Kurikulum Merdeka can shape students who not only possess technical skills but also the ability to think critically, collaborate, and adapt to the challenges of the digital era. These methods enable students to solve real-world problems, actively participate in the learning process, and develop the soft skills and character traits necessary for the demands of the 21st century. Thus, Informatics learning becomes more relevant to real life for students.

Benefits of Informatics Learning

Informatics education in the Kurikulum Merdeka not only equips students with technical skills but also fosters their development as ethical individuals with social awareness aligned with the principles of Pancasila. This learning plays a crucial role for junior high school students in enhancing their critical thinking, analytical, and problem-solving skills. Informatics learning also prepares students for life in a digital society and simplifies daily life. According to the Center for Curriculum and Textbooks, Ministry of Education and Culture, in the book "Informatics Book for Junior High Schools/Islamic Junior High Schools

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Grade VII Kurikulum Merdeka," it explains that in the digital era, students need not only to prepare themselves but also to understand technology while embodying ethical values, politeness, and responsible habits as committed digital citizens.

The benefits of informatics learning in the Merdeka curriculum can be categorized into the following areas:

1. Improving Digital Literacy and Media Ethics
   Through informatics learning, students not only acquire technical skills but also develop an awareness of the responsible use of digital media. This learning provides an understanding of media ethics, including the importance of maintaining privacy, being mindful of digital footprints, and increasing awareness of online security (Maifianti *et al*., 2021).
2. Developing Critical Thinking and Problem-Solving Skills
   Informatics learning teaches students to analyze problems, find technology-based solutions, and systematically evaluate the results. This ability to think logically and reflectively is crucial for facing real-world challenges. Another study found that students' critical thinking skills were enhanced by web-based media, which improved their problem-solving abilities (Alfiyah & Ekohariadi, 2020).
3. Improving Creativity and Innovation
   Students are encouraged to create digital products, such as educational games or applications, that foster creativity and innovation, while also increasing self-confidence and enhancing creative problem-solving abilities. Based on this, it can be concluded that digital products are a suitable alternative to traditional media and have received a positive response from teachers and students (Raharjo *et al.*, 2024).
4. Improves Collaboration and Communication
   Project-based learning encourages students to communicate effectively, work collaboratively in teams, and share their ideas and thoughts. In today's digital era, the ability to collaborate and communicate effectively is crucial in both the workplace and social life. Collaborative learning has been shown to significantly improve students' problem-solving abilities while also honing their communication skills in collaborative problem-solving (Setiawan *et al*., 2024).
5. Supports Independent and Flexible Learning
   The use of digital technology in informatics learning enables students to learn independently and flexibly. Through access to various digital platforms, students can tailor the learning process to their own pace and style, thereby increasing motivation and facilitating a more adaptive learning experience. Furthermore, the use of e-learning platforms has been shown to increase student engagement and active participation in the learning process, while also facilitating access to learning materials at any time and from anywhere (Putra *et al*., 2024).
6. Preparing Students to Face Global Challenges
   Informatics learning within the Merdeka curriculum helps prepare students to face global challenges in the digital age because it can serve as a strong foundation for educational transformation in the digital era. Successful implementation will produce a generation that is not only competent in mastering knowledge but also possesses a resilient character and is prepared to face the dynamic changes in global society (Matthews-DeNatale, 2024).

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METHODS

This research was conducted from April to May 2025. A qualitative approach was employed because it offers the advantage of developing a comprehensive and conceptual understanding of teaching methods, as well as flexibility in capturing the dynamics of the learning process and how educational practitioners interpret curriculum policies. This approach also allows researchers to gain more profound and more relevant insights through understanding individual experiences within specific cultural and social contexts.

The method used in this research is a descriptive qualitative approach. This method was chosen to uncover knowledge and theories from previous research, as well as to provide a more in-depth description of the experiences and perspectives of informants regarding the implementation of the Kurikulum Merdeka in Informatics. This study aims to explain how Informatics is implemented within the Kurikulum Merdeka at SMP 26 Bandung, with a focus on learning strategies, challenges faced, and teachers' efforts to adapt Informatics lessons to support the achievements of the Kurikulum Merdeka.

The subjects of this study consisted of only one Informatics teacher at SMP 26 Bandung, who was directly involved in the planning and implementation of learning based on the Kurikulum Merdeka. Data collection techniques included in-depth interviews, observation, and literature review. Interviews were used to directly explore teachers' experiences and perspectives regarding the planning, implementation, and evaluation of learning. Observations were conducted to strengthen the interview results, while the literature review was used to enrich the conceptual framework and provide a relevant theoretical foundation. The stages of this study included planning the interview instrument, data collection, data analysis, and concluding. The results of this study were systematically organized, consisting of an introduction, literature review, methods, results, and discussion.

The use of a qualitative approach in this study was beneficial for gaining a contextual and in-depth understanding of ongoing educational practices, including the implementation of the Kurikulum Merdeka at SMP 26 Bandung. Furthermore, this approach provided flexibility in capturing the dynamics of the learning process and in directly interpreting curriculum policies from educational practitioners. This approach also allowed researchers to explore teachers' experiences directly through interviews and observations, which were a crucial part of the data collection process for this study.

RESULTS AND DISCUSSION

Background of the Informatics Subject at SMP 26 Bandung

This subject was previously known as Information and Communication Technology (ICT), and has now been renamed informatics. Conceptually, ICT focuses on fundamental skills in managing information and communication, including the use of software, internet access, and other basic digital technologies. Meanwhile, informatics encompasses more in-depth and technical aspects, such as computer-based system development, programming, and other related fields.

The informatics subject was once part of the core curriculum in schools, but was later removed following changes in national education policy. It was not until the 2021/2022 academic year that the Ministry of Education, Culture, Research, and Technology officially reinstated the subject into the curriculum structure with a new name, Informatics. This name change reflects the expanded scope of material, which focuses not only on the use of technology but also on strengthening conceptual understanding and developing higher-order thinking skills.

At SMP 26 Bandung, the informatics subject was only implemented in 2023, exactly two years ago. Nationally, it has been implemented since the 2021/2022 academic year. This is due to the limited number

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of teaching staff with backgrounds and competencies in informatics. Initially, there was only one permanent teacher who met the qualifications, so the school decided to appoint teachers from other subjects, such as Mathematics, Crafts, and Civic.

Informatics instruction at this school still uses teaching materials from textbooks published by the Ministry of Education, Culture, Research, and Technology in 2022. These textbooks are only available in the school library and are loaned to students; therefore, access to the materials is limited. Although all public schools and most private schools refer to the same textbooks, the teaching and learning strategies implemented vary, depending on the development team at each school. At SMP 26 Bandung, the learning approach is also tailored to the students' abilities, as the teachers' capacities do not yet fully support optimal material development.

Challenges for Students

In its implementation, Informatics learning at SMP 26 Bandung still faces various challenges, including infrastructure, learning duration, and teacher competency. The school only has one computer lab for 27 classes, requiring students to use the facility on a rotating basis. Sometimes, learning takes place in classrooms using mobile phones if the lab is insufficient. The number of computers available ranges from 20 to 40, so students with personal devices, such as laptops, are allowed to bring them from home, while others adapt to the available facilities.

The learning duration is set at three hours per week, or 40 minutes per day (3 x 40 minutes). The primary competency currently emphasized is basic proficiency in Microsoft Office, as the minimum skill students are expected to master upon graduation. However, the use of other applications such as Canva or CapCut has not been prioritized in learning activities.

Furthermore, limited teacher competency poses a significant challenge, as most teachers have non-informatics backgrounds, so the material provided does not align with their areas of expertise. Teachers often rely on online resources, such as educational websites, as teaching tools, which can lead to suboptimal learning outcomes.

The assessment process remains simple and emphasizes skill mastery over memorization. Knowledge tests typically consist of only one to five questions, designed to develop students' critical thinking skills. There is currently no specific assessment rubric; however, the school has established a Minimum Completion Criteria of 75.

The final exam for this subject is planned to be a non-test or practical exam, focusing on the use of Microsoft Office, especially for ninth-grade students. Teachers' observations suggest that male students tend to demonstrate greater enthusiasm for this subject than female students.

Further Development of Informatics Subjects in the Kurikulum Merdeka

The development of Informatics learning at SMP 26 Bandung is still in its early stages, with a focus on adapting to students' abilities. Limited laboratory facilities, inadequate teacher numbers and competencies, and a lack of student preparedness are factors that hinder innovation in curriculum development. The lack of an external mentoring system further complicates these challenges. Furthermore, the availability of teaching materials, such as textbooks, remains limited and can only be accessed through loans from the school library.

A comprehensive evaluation of the effectiveness of the learning has not been possible because it has only been implemented for one academic year. Most students lack a foundation in informatics knowledge from elementary school, so the learning process begins with the most basic concepts.

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It is hoped that Informatics learning will not only equip students as technology users but also shape them into individuals capable of critical, logical, and creative thinking in solving problems through a computational approach. Mastering informatics skills is a crucial foundation in preparing students to navigate the ever-evolving world of work and digital life, while also opening up broader opportunities for innovation and participation in the development of future technologies.

Discussion

The implementation of Informatics subjects in the Kurikulum Merdeka at SMP 26 Bandung faced various challenges, particularly related to the readiness of human resources and infrastructure. The unpreparedness of teachers, most of whom lacked an informatics background, resulted in a less-than-optimal learning process. Teachers with non-informatics backgrounds required time to adapt to the new material, which affected the effectiveness of their instruction to students. This was confirmed by research showing that teachers without an informatics background experienced difficulty understanding the material and conveying it to students, which impacted the quality of the learning process (Wahdini *et al*., 2024).

Furthermore, limited facilities such as computer laboratories, supporting devices, and access to teaching materials hampered the overall implementation process. These findings align with research indicating that the transition from the 2013 Curriculum to the Kurikulum Merdeka presents new challenges for teachers, both in terms of learning tools and approaches. Lack of training and facilities makes it difficult for teachers to meet the demands of the new curriculum (Hartawati & Karim, 2024).

On the student side, the majority of students lack basic informatics knowledge from elementary school, making it difficult for them to understand advanced material. This situation emphasizes the importance of a learning approach that considers students' initial readiness. In this context, Vygotsky's Zone of Proximal Development (ZPD) theory is relevant, as it states that children can complete tasks with the help of others to reach their full developmental potential (Etnawati, 2021). This suggests that support in the form of intensive mentoring from teachers is essential for students to gain a comprehensive understanding of informatics material.

Despite these real challenges, the inclusion of Informatics subjects in the Kurikulum Merdeka remains a strategic step in preparing students for the digital era. This subject not only broadens knowledge but also serves as a means of adapting education to the demands of the times. Informatics skills and digital literacy are essential components of the 21st-century competencies required for today's education. This is reinforced by findings showing that the use of informatics learning media allows students to learn comfortably and enjoyably. Educators who facilitate learning can freely deliver the desired material (Maulana *et al*., 2025). Therefore, synergy between teacher training, adequate facilities, and contextual curriculum development is necessary for the optimal implementation of the curriculum at the school level.

CONCLUSION

Overall, the implementation of Informatics as part of the Kurikulum Merdeka at SMP 26 Bandung has gone quite well, although it still faces several challenges. The limited number of teachers with an informatics background is a major obstacle to optimal learning. However, the school's curriculum team has strived to introduce Informatics as part of the new regulations from the Ministry of Education, Culture, Research, and Technology, as a commitment to educational transformation.

The implementation of Informatics learning methods does not include special projects, such as those implemented in other subjects, and student grouping based on ability level has not been implemented.

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However, this approach enables collaboration between students, where more advanced students can assist those who are still struggling, thereby creating a supportive learning environment.

To support the sustainability and effectiveness of Informatics learning, it is recommended that schools consistently provide training and professional development for teachers, especially those not from the informatics field. If recruiting new teachers is not feasible, strengthening the capacity of existing teachers is a strategic step. Furthermore, learning development can also be achieved through cross-subject collaboration, for example, by creating activity proposals using standard language in Indonesian language lessons. This approach enables students to engage in integrative learning while developing literacy and digital skills simultaneously.

AUTHOR'S NOTE

The author declares that there is no conflict of interest regarding the publication of this article. The author also confirms that all data, analysis, and content of this article are free from plagiarism. We would like to express our gratitude to SMP 26 Bandung for granting permission and the opportunity to conduct this research, as well as to the interviewees who shared their experiences and insights on the Informatics learning process. We also thank all parties who provided support during the preparation of this article.

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