Southeast Asian Journal of Global Trends and Issues in Education
E-ISSN 3110-6714 | Print ISSN 3110-679X, Volume 2, Issue 1 (2026), DOI: 10.64420/sajgtie.v2i1
Journal homepage: https://ojs.aeducia.org/index.php/sajgtie

Analysis of Vocational High School Students' Learning Styles in the Implementation of the Merdeka Curriculum

Anisa Ayu Lestarina[1]*, Durinda Puspasari[2]

Correspondence regarding this article should be addressed to:
* Anisa Ayu Lestarina, Department of Office Administration Education, Universitas Negeri Surabaya, Surabaya, Indonesia, anisa.19053@mhs.unesa.ac.id

This article is available online via the following issue link:
https://doi.org/10.64420/sajgtie.v2i1

How to Cite this Article:

Lestarina, A. A., & Puspasari, D. (2026). Analysis of Vocational High School Students' Learning Styles in the Implementation of the Merdeka Curriculum. *Southeast Asian Journal of Global Trends and Issues in Education, 2*(1), 1-12. https://doi.org/10.64420/sajgtie.v2.1.495

SCROLL DOWN TO READ THIS ARTICLE

Academia Edu Cendekia Indonesia (AEDUCIA), as the publisher, makes every effort to ensure the accuracy of all information (the "Content") contained in its publications. However, we make no representations or warranties regarding the accuracy, completeness, or suitability of the Content for any purpose. Any opinions and views expressed in this publication are solely those of the authors and do not reflect the views of, nor are they endorsed by, AEDUCIA. The accuracy of the Content should not be relied upon without independent verification using primary sources. AEDUCIA shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, or other liabilities, whether direct or indirect, arising from the use of the Content.

Southeast Asian Journal of Global Trends and Issues in Education (SAJGTIE), is published by AEDUCIA and complies with the Principles of Transparency and Best Practice in Scholarly Publishing in Scholarly Publishing at all stages of the publication process. SAJGTIE may include links to external websites operated by third parties. These links are provided solely for the dissemination of scholarly knowledge in the fields of education. AEDUCIA does not assume responsibility for the content or accuracy of information on external websites.

Article Information

Copyright holder:
© Lestarina, A. A., & Puspasari, D. (2026)

First Publication Right:
Southeast Asian Journal of Global Trends and Issues in Education

Article info:
DOI: https://doi.org/10.64420/sajgtie.v2i1.495

Word Count: 7334

Publisher's Note:
The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of AEDUCIA and/or the editor(s). AEDUCIA and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.

This Article is licensed under the: CC BY-SA 4.0

Publication details, including instructions for authors and subscription information, are available at:
https://ojs.aeducia.org/index.php/sajgtie/about

Copyright @ 2026 by the author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0) License (https://creativecommons.org/licenses/by-sa/4.0/)

Contents lists available at ojs.aeducia.org

Southeast Asian J. Glob. Trends Issues Educ.

Volume 2, Issue 1 (2026), DOI: 10.64420/sajgtie.v2i1

Journal homepage: https://ojs.aeducia.org/index.php/sajgtie

SAJGTIE

E-ISSN 3110-6714

P-ISSN 3110-679X

Research Article **Read Online:** https://doi.org/10.64420/sajgtie.v2i1.495 **Open Access**

Analysis of Vocational High School Students' Learning Styles in the Implementation of the Merdeka Curriculum

Anisa Ayu Lestarina[1*], Durinda Puspasari[2]

[1,2] Universitas Negeri Surabaya, Surabaya, Indonesia

ARTICLE HISTORY

Submitted: February 14, 2026
Revised: March 9, 2026
Accepted: April 26, 2026
Published: April 30, 2026

KEYWORDS

Learning Styles;
Merdeka Curriculum;
Implementation;
Vocational High School;
Differentiated Learning;
Multimodal Learning;
Student Engagement

ABSTRACT

Background: The implementation of the Merdeka Curriculum emphasises differentiated instruction and student-centred learning, requiring teachers to understand students' diverse learning characteristics. However, the integration of learning styles into classroom practices remains limited, particularly in vocational education contexts. **Objective:** This study aims to analyse the learning styles of tenth-grade students in the Office Automation and Governance (OTKP) program, identify challenges in implementing learning styles within the Merdeka Curriculum, and examine strategies to address these challenges. **Method:** This study employs a qualitative descriptive approach. Data were collected through interviews and documentation using purposive sampling, involving the principal, vice principal for student affairs, teachers, and students. Data validity was ensured through source triangulation, and data were analysed using the interactive model of Miles, Huberman, and Saldaña, including data condensation, data display, and conclusion drawing. **Results:** Students exhibit varied learning styles, with a dominant tendency toward auditory learning. The challenges identified include limited flexibility in students' use of multiple learning styles, insufficient teacher understanding of differentiated instruction within the Merdeka Curriculum, and inadequate supporting learning facilities. To address these issues, teachers have implemented various strategies, including diversifying instructional methods, using visual media, and applying project-based learning. **Conclusion: A**lthough the Merdeka Curriculum has been implemented structurally, its pedagogical application has not yet fully accommodated students' diverse learning styles, resulting in a gap between policy expectations and classroom practices. **Originality/Value:** This study offers novel empirical insights in the field of vocational education and curriculum studies by revealing the pedagogical gap between policy expectations and classroom practice, the predominance of auditory learning styles, and challenges in teachers' differentiated instruction competency regarding student learning style integration within the context of Merdeka Curriculum implementation in the Office Automation and Governance (OTKP) program, which has been underexplored. These findings enrich empirical evidence and serve as a strategic reference for developing adaptive teaching models and teacher training programs to optimise differentiated instruction in vocational high schools.

1. INTRODUCTION

The transformation of 21st-century education requires learning systems that are adaptive to technological, social, and generational changes. A UNESCO report (2021) emphasizes that modern education must accommodate differentiated instruction, character development, and curriculum flexibility to meet future demands. Within this global context, student-centred learning has become the dominant paradigm. This approach positions students as active agents with diverse preferences, interests, and learning styles, making uniform and one-directional teaching strategies no longer relevant.

* **Corresponding Author:** Anisa Ayu Lestarina, anisa.19053@mhs.unesa.ac.id

Department of Office Administration Education, Universitas Negeri Surabaya, Surabaya, Indonesia

Address: Jl. Ketintang, Karah, Kec. Jambangan, Kota Surabaya, dan Kampus Lidah Wetan (Fakultas Pendidikan, Olahraga, Bahasa), Indonesia

Copyright @ 2026 by the author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0) License (https://creativecommons.org/licenses/by-sa/4.0/)

In Indonesia, educational reform has been realized through the Merdeka Curriculum policy, officially implemented as part of the Merdeka Belajar program. This curriculum emphasizes flexibility, project-based learning, strengthening the Pancasila Student Profile, and differentiated instruction tailored to students' needs (Ministry of Education, Culture, Research, and Technology, 2022). In practice, the Merdeka Curriculum requires teachers to comprehensively understand students' characteristics, including their learning style preferences, which influence the effectiveness of knowledge acquisition.

In its implementation, the Merdeka Curriculum encourages teachers to understand individual student characteristics, including learning styles, interests, and potential. Learning style refers to how individuals receive, process, and understand information during learning (Hidayah, 2024). Since each student has different learning preferences, initial identification is necessary to determine appropriate instructional models and methods. Understanding learning styles reflects how individuals receive, process, and store information and contributes to students' academic achievement (Muniyapillai et al., 2023).

The concept of learning style differences illustrates individual variation in how learners receive, process, and respond to information in the learning process (Altamimi et al., 2022; Jiang et al., 2022). The VARK model (Visual, Auditory, Read/Write, Kinesthetic) explains that individuals tend to favour certain modalities in learning (Demberel & Baasanjav, 2025). In student-centred learning, identifying learning styles is crucial, as they are closely related to comprehension effectiveness, motivation, and learning outcomes.

From a theoretical perspective, the concept of learning styles is rooted in information processing theory and constructivist theory. Dunn & Dunn (1993) argue that learning styles encompass environmental, emotional, sociological, physiological, and psychological factors, while Kolb (2014), through Experiential Learning Theory, emphasizes the importance of concrete experience in the learning process. In the context of the Merdeka Curriculum, this theory is relevant as the curriculum demands contextual and experience-based learning.

Langelaan et al. (2024) assert that effective differentiated instruction can only be achieved when teachers understand students' readiness, interests, and learning profiles. These learning profiles include learning styles as a key component. Therefore, the ideal implementation of the Merdeka Curriculum requires mapping students' learning styles as a foundation for designing instructional strategies.

Several national studies indicate that learning styles influence motivation and learning outcomes (Rismayasa et al., 2022; Ilmiyah et al., 2025). Other studies have found that most students tend to have visual or auditory learning styles in formal education settings (Trisnanda & Asriyanti, 2025; Ulkhaira, 2025). However, most of these studies focus on the relationship between learning styles and learning outcomes rather than on their role in implementing a new curriculum.

Research on the implementation of the Merdeka Curriculum (Rahayu et al., 2022; Rahmadayanti & Hartoyo, 2022) has largely focused on teacher readiness, curriculum structure, and projects related to the Pancasila Student Profile. The role of learning styles as the foundation of differentiated instruction has not been extensively explored, particularly in vocational high schools, which have distinct characteristics.

Vocational high schools emphasize practical competence and workforce readiness. Students in these institutions require kinesthetic and contextual learning approaches. However, in practice, lecture-based methods remain dominant, leading to a mismatch between students' learning needs and teachers' instructional strategies (Abduhrohman et al., 2025; Melaku et al., 2025).

In vocational schools that have implemented the Merdeka Curriculum, learning practices still do not fully accommodate diverse learning styles. Teachers tend to use conventional methods, while students exhibit varied learning preferences (Sati et al., 2024). This condition indicates a gap between the ideal concept of differentiated instruction in the Merdeka Curriculum and its practical implementation in classrooms.

Theoretically, the Merdeka Curriculum requires differentiated instruction. However, in practice, not all schools conduct learning style identification as an initial step in instructional planning. This represents a significant research gap: the lack of in-depth studies on learning-style analysis within the context of the Merdeka Curriculum's implementation in vocational education. From an educational counselling perspective, understanding learning styles helps guidance counsellors and educators provide academic services tailored to students' characteristics. This study aligns with a psychopedagogical approach that emphasizes individual differences in learning processes.

Recent research trends indicate a shift from teacher-centred approaches to personalized learning based on diagnostic data (OECD, 2022). Learning based on student profiles has become one of the indicators of modern educational quality (Khor & K, 2024; Richardson & Khawaja, 2025). This strengthens the urgency of studying learning styles in the implementation of adaptive curricula. As commonly observed in developing countries (Urhahne & Wijnia, 2021), learning style research in Indonesia still predominantly employs descriptive quantitative approaches

(Anggoro et al., 2024). Qualitative studies exploring the dynamics of the implementation of learning styles within new curriculum policies remain limited (Rahayuningsih & Hanif, 2024). Therefore, more in-depth, context-specific studies are needed.

Previous research limitations include the lack of integration between learning style theory and curriculum policy (Wieselmann et al., 2022). Additionally, few studies have examined the challenges and efforts teachers face in accommodating learning styles during the implementation of the Merdeka Curriculum in vocational schools. This study offers novelty through a comprehensive analysis of students' learning styles within the context of the Merdeka Curriculum implementation in vocational schools, including the identification of challenges and adaptive strategies. This approach not only maps learning style tendencies but also connects them with educational policy practices. Fundamentally, this study enriches the discourse on integrating learning style theories (VARK and experiential learning) with the concept of differentiated instruction in the Merdeka Curriculum. It also expands the discussion on the relevance of individual differences theory in national education policy (Mulasi et al., 2025). In practice, the findings can serve as a basis for teachers in designing varied and context-specific instructional strategies (Putri & Elizar, 2025). Schools can also use these findings to evaluate the implementation of the Merdeka Curriculum.

This study provides data-driven recommendations on the importance of diagnostic assessment of learning styles at the initial stage of curriculum implementation. This has the potential to support the refinement of differentiated instruction policies at the school level. Based on this background, the study seeks to answer the following questions: (1) What are the characteristics of students' learning styles in the Merdeka Curriculum? (2) What challenges arise in its implementation? Moreover, (3) What efforts are made to address these challenges? This study aims to comprehensively analyze students' learning style characteristics in the implementation of the Merdeka Curriculum, identify emerging challenges, and formulate adaptive strategies to improve the effectiveness of differentiated learning in vocational schools. Therefore, this study is expected to contribute to the development of educational science and vocational learning practices, as well as to the implementation of the Merdeka Curriculum policy.

2. METHOD

2.1 Research Design

This study employed a qualitative, descriptive design (Creswell & Poth, 2024). This design was selected because the study focuses on an in-depth understanding of students' learning styles during the implementation of the Merdeka Curriculum rather than on statistical measurement (Leavy, 2020). A qualitative descriptive approach allows the researcher to systematically describe real conditions in the field, particularly the variations in visual, auditory, and kinesthetic learning styles observed in the tenth-grade OTKP classroom. This approach also enables exploration of challenges and the school's efforts to align instructional strategies with students' learning characteristics (Tisdell et al., 2025). Data were collected naturally without manipulation, reflecting authentic classroom conditions (Flick, 2024).

The study was conducted at SMK Syekh Abdul Qodir Al Jailani Kraksaan, Probolinggo Regency, East Java. The site was selected purposively because the school has fully implemented the Merdeka Curriculum and offers the Office Automation and Governance (OTKP) program, which is relevant to the study. The research took place during the second semester of the 2023/2024 academic year, from January to July 2024.

2.2 Research Object

The research subjects were selected through purposive sampling based on their direct involvement in implementing the Merdeka Curriculum (Creswell & Creswell, 2023). The participants included the principal, vice principal for student affairs, OTKP teachers, and tenth-grade OTKP students. The selection criteria were: (1) direct involvement in the implementation of the Merdeka Curriculum, (2) understanding of the teaching and learning process in the OTKP program, and (3) willingness to provide information openly. Student participants were selected to represent diverse academic characteristics and levels of classroom participation, ensuring rich, varied data.

2.3 Data Collection

The primary instrument in this study was the researcher, serving as a human instrument responsible for collecting, analysing, and interpreting the data. Supporting instruments included structured interview guides, observation sheets, and documentation formats. The interview guide was developed based on the research focus, including the implementation of learning styles, challenges encountered, and strategies applied in the Merdeka Curriculum.

Data were collected through three main techniques: interviews, observations, and documentation (Tisdell et al., 2025). Interviews were conducted face-to-face and recorded to ensure accuracy. Observations were conducted using a moderate participatory approach, in which the researcher observed classroom activities without disrupting the learning process. Documentation, such as photographs of learning activities, teaching materials, and school profiles, was used to support and validate the findings.

To ensure data credibility, triangulation techniques were applied. Source triangulation involved comparing information from principals, teachers, and students, while technique triangulation involved comparing data from interviews, observations, and documentation. Additionally, member checking was conducted by confirming interview results with participants to ensure data accuracy and consistency.

2.4 Data Analysis

Data analysis was conducted using the interactive model of Miles et al., (2020), which includes data condensation, data display, and conclusion drawing. Data condensation involved selecting and focusing on relevant information related to the research objectives. Data were then presented in a systematic descriptive narrative according to the research categories. Conclusions were gradually drawn throughout the data collection process, ensuring consistency across findings. The analysis process was conducted continuously and iteratively until data saturation was achieved.

2.5 Procedure

The research procedure consisted of several stages. The preparation stage included proposal development, research permission, and instrument design. The implementation stage involved data collection through interviews, observations, and documentation. The next stage was data processing and analysis, conducted progressively throughout the research process. The final stage involved preparing the research report in accordance with academic writing standards.

During fieldwork, the researcher established initial communication with the school to build trust and obtain formal permission. Classroom observations were conducted to identify students' learning style tendencies, followed by in-depth interviews with key informants based on a predetermined schedule. All interview data were transcribed immediately to ensure accuracy and prevent data loss.

3. RESULTS AND DISCUSSION

3.1 Results

The findings indicate that the implementation of the Merdeka Curriculum at SMK Syekh Abdul Qodir Al Jailani Kraksaan has been carried out administratively and structurally, particularly in the tenth-grade Office Automation and Governance (OTKP) program. Based on interviews with the principal and the vice principal for student affairs, the school has adopted a new learning paradigm through a student-centred learning approach. However, in practice, the instructional process remains dominated by lecture-based methods. This condition contributes to the emergence of certain dominant learning style tendencies over others.

Based on interview data and source triangulation, the majority of tenth-grade OTKP students demonstrate a tendency toward an auditory learning style. Students are more likely to understand the material through teachers' verbal explanations, classroom discussions, and oral presentations rather than through visual media or hands-on practice. Visual and kinesthetic learning styles are still present but in lower proportions. This finding is supported by teachers' statements indicating that most students are more active when learning takes place through interactive dialogue and direct explanation.

Further findings reveal that students' learning styles significantly influence their engagement in the Merdeka Curriculum. Students with auditory learning styles tend to be more responsive and quicker to comprehend information when teachers employ lecture and discussion methods. In contrast, students with visual and kinesthetic tendencies experience difficulties when visual media or practical activities do not support instruction. This indicates a gap between students' preferred learning styles and the instructional strategies teachers use.

Table 1. Students' Learning Style Characteristics

No	Analyzed Aspect	Main Findings	Description
1	Dominant learning style	Auditory	The majority of students understand material more effectively through verbal explanations, discussions, and oral presentations
2	Visual learning	Present	Students learn through images and visual media, but its use is not yet

No	Analyzed Aspect	Main Findings	Description
	style	(minority)	optimal due to limited resources
3	Kinesthetic learning style	Present (minority)	Students require hands-on practice, but it is not fully facilitated in the learning process

The findings indicate that the implementation of the Merdeka Curriculum has been structurally established at the administrative level; however, its pedagogical execution remains partially conventional. Although the school formally adopts a student-centered learning approach, classroom practices still rely heavily on lecture-based methods. This suggests a transitional phase in curriculum implementation, where institutional compliance does not yet fully translate into instructional transformation. The dominance of teacher-centered strategies implicitly shapes students' learning preferences, reinforcing certain learning styles over others.

Table 2. The Influence of Learning Styles on the Learning Process

No	Type of Learning Style	Level of Engagement	Response Characteristics
1	Auditory	High	Active in discussions and quick to understand verbal explanations
2	Visual	Moderate	Requires supporting media such as images or slides
3	Kinesthetic	Low	Less engaged without hands-on or practical activities

The dominance of the auditory learning style reflects the strong influence of instructional delivery methods used by teachers. Students' preference for verbal explanations, discussions, and oral communication indicates that the learning environment conditions them to process information primarily through listening. The lower presence of visual and kinesthetic styles suggests that these modalities are under-stimulated rather than inherently less preferred. Therefore, learning style distribution in this context is not purely individual but is socially constructed through repeated classroom practices.

Table 3. Challenges in Implementing Learning Styles

No	Type of Challenge	Description
1	Limited learning flexibility	Students tend to rely on a single dominant learning style
2	Teachers' understanding	Some teachers have not fully mastered differentiated instruction
3	Teaching methods	Learning is still dominated by lecture-based approaches
4	Facilities and infrastructure	Limited availability of visual media and practical learning tools

The variation in student engagement across learning styles highlights the direct relationship between instructional alignment and learning effectiveness. Students whose learning preferences match the dominant teaching method (auditory) demonstrate higher responsiveness and comprehension. In contrast, students with visual and kinesthetic tendencies experience reduced engagement due to the lack of appropriate instructional support. This imbalance reveals a pedagogical gap, where the absence of differentiated instruction limits equitable learning opportunities among students.

Table 4. Strategies to Address the Challenges

No	Strategy	Implementation
1	Varied teaching methods	Combining lectures, discussions, and Q&A sessions
2	Use of visual media	Slide-based presentations and visual learning materials
3	Project-Based Learning (PBL)	Assigning project-based tasks to enhance student engagement
4	Collaborative learning	Group discussions to promote interaction
5	Practical activities	Integrating simple hands-on practices into lessons

The identified challenges reveal both internal and external constraints affecting the implementation of differentiated learning. Students' reliance on a single dominant learning style indicates limited metacognitive development and adaptability in learning strategies. Simultaneously, teachers' incomplete understanding of the Merdeka Curriculum reflects a gap in pedagogical readiness. The lack of supporting facilities further compounds these issues, suggesting that effective curriculum implementation requires not only conceptual understanding but also structural and resource-based support.

Table 5. Summary of Key Findings

No	Research Focus	Findings
1	Implementation of the Merdeka Curriculum	Administratively implemented but not yet optimal pedagogically
2	Dominant learning style	Auditory
3	Main issue	Mismatch between diverse learning styles and teaching methods
4	Solution	Gradual implementation of differentiated instruction

The efforts undertaken by the school and teachers demonstrate an emerging shift toward adaptive and differentiated learning practices. The integration of varied teaching strategies, visual media, and project-based learning indicates a gradual movement away from traditional methods. Although these efforts are not yet fully systematic, they reflect an awareness of the need to accommodate diverse learning styles. This progression suggests that the implementation of differentiated instruction is evolving incrementally rather than occurring as an immediate transformation.

This study also identified several challenges in implementing learning styles within the Merdeka Curriculum. First, students tend to rely on a single dominant learning style, lacking flexibility in multimodal learning. Second, some teachers have not fully updated their pedagogical understanding of differentiated instruction within the Merdeka Curriculum. Third, limitations in supporting facilities and infrastructure, such as interactive media and practical learning resources, affect the optimisation of kinesthetic and visual learning styles.

To address these challenges, the school and teachers have implemented several strategies, including diversifying instructional methods, utilising visual presentation media, and assigning project-based tasks as part of Project-Based Learning (PBL) within the Merdeka Curriculum. Teachers have also begun to integrate group discussions and simple hands-on activities to accommodate different learning style needs. These efforts indicate a gradual adaptation toward differentiated instruction aligned with students' learning characteristics.

3.2. Discussion

The findings of this study confirm that the auditory learning style is the dominant tendency among tenth-grade OTKP students. This condition can be explained through the VAK (Visual, Auditory, Kinesthetic) theory, which posits that individuals have specific sensory preferences in receiving information (Santrock, 2024). The dominance of the auditory learning style in this study is also consistent with findings by Rismayasa et al. (2022) and Ilmiyah et al. (2025), which indicate that auditory learning significantly influences learning outcomes when lecture-based instructional strategies remain prevalent in the classroom. This suggests a strong relationship between teachers' instructional methods and the formation of students' learning style tendencies.

However, within the context of the Merdeka Curriculum, which emphasises differentiated instruction and student-centred learning, the dominance of a single learning style suggests that differentiated instruction has not yet been fully optimised. According to Putri & Elizar (2025), differentiated learning requires teachers to accommodate diverse learning styles through multimodal strategies to ensure that all students can develop optimally. Therefore, this study's findings reveal a gap between the ideal principles of the Merdeka Curriculum and actual classroom practices.

The limitation in students' flexibility in learning styles also indicates that they are not yet accustomed to adaptive learning approaches. Conceptually, the VARK model proposed by Fleming, individuals can develop multiple learning modalities as multimodal learners. Furthermore, Pratama et al. (2025) demonstrate that learning styles can evolve through exposure to varied learning environments. Therefore, if teachers consistently apply diverse instructional methods, students have the potential to develop more flexible learning styles.

Limitations in facilities and teachers' pedagogical readiness also emerge as critical factors. Rahmadayanti & Hartoyo (2022) emphasise that the success of the Merdeka Curriculum depends heavily on teachers' readiness to design innovative, contextually relevant learning experiences. Thus, the findings of this study reinforce the notion that curriculum transformation is not merely administrative but also requires strengthening pedagogical competencies and adequate learning resources.

Theoretically, this study contributes to the discourse on learning styles in the context of the implementation of the Merdeka Curriculum in vocational education. The main finding indicates that the dominance of the auditory learning style is influenced by the continued use of conventional teaching methods and the suboptimal implementation of differentiated instruction. The significance of this study lies in highlighting the importance of integrating learning style analysis into instructional design to achieve the holistic development goals of the Pancasila Student Profile. While previous studies have primarily focused on the relationship between learning styles and learning out-

comes, this study extends the discussion by linking learning styles to curriculum implementation and policy outcomes, thereby offering implications not only for educational psychology but also for instructional practice and policy development.

4. IMPLICATIONS AND CONTRIBUTIONS

4.1 Research Implications

The findings of this study on the analysis of learning styles among tenth-grade students in the Office Automation and Governance (OTKP) program within the implementation of the Merdeka Curriculum at SMK Syekh Abdul Qodir Al Jailani Kraksaan indicate that the majority of students tend to exhibit an auditory learning style. This occurs despite the Merdeka Curriculum's conceptual emphasis on differentiated instruction and student-centred learning. These findings have theoretical implications: within the context of the Merdeka Curriculum implementation, the VAK (Visual, Auditory, Kinesthetic) learning style theory remains relevant as an initial approach for mapping students' learning characteristics. However, this study also reinforces the view that learning styles are not static categories but rather dynamic and contextual, as emphasized by Puadah & Hizriyani (2024), who argue that students' learning preferences are influenced by the learning environment and the instructional strategies employed by teachers.

Within the theoretical framework, this study also strengthens the concept of differentiated instruction in the Merdeka Curriculum, as explained by Rahayu et al. (2022), which requires teachers to understand students' learning profiles before designing instructional strategies. Thus, learning styles are not merely classifications of preferences but serve as a foundation for developing adaptive instructional design. The findings further expand the discourse by showing that in vocational schools, the dominance of auditory learning styles often stems from prior learning cultures that rely heavily on lecture-based instruction.

The practical implications of this study indicate that teachers have not yet fully optimized instructional strategies to accommodate diverse learning styles. This condition limits students' potential development. This finding is consistent with Darmiah (2025), who states that mismatches between teaching methods and students' learning styles affect participation and learning motivation. Therefore, one key practical implication is the need for intensive teacher training in implementing multimodal learning strategies.

From a managerial perspective, the implications concern the roles of school principals and vice principals in creating adaptive learning ecosystems. The implementation of the Merdeka Curriculum requires internal school policies that support diagnostic assessment of learning styles at the beginning of the academic year. According to Triwiyanto (2024), school leadership plays a strategic role in ensuring effective curriculum transformation through academic supervision and teacher capacity building. This study reinforces the importance of managerial support in optimizing differentiated instruction.

Methodologically, this study demonstrates that a qualitative descriptive approach, using the interactive analysis model of Miles et al. (2020), is effective for exploring learning style phenomena in the context of a new curriculum implementation. Source triangulation involving principals, teachers, and students strengthens the validity of the findings. This is consistent with Latifah (2023), who argues that learning style analysis requires an interpretive approach to capture students' subjective dynamics.

This study also highlights the importance of integrating learning facilities to support diverse learning styles. The lack of visual media and practical resources becomes a barrier to implementing kinesthetic and visual learning. In line with Rismayasa et al. (2022), adequate learning facilities significantly influence the effectiveness of learning strategies based on learning styles.

Another theoretical implication is that the dominance of a single learning style (auditory) reflects a reliance on lecture-based methods within vocational school culture. This enriches the discourse on pedagogical resistance in curriculum transition. As Rahmadayanti & Hartoyo (2022) stated, curriculum transformation requires a shift in learning paradigms, not merely changes to curriculum documents.

Another practical implication is the need for initial diagnostic assessments to identify students' learning style tendencies before the learning process begins. This assessment forms a crucial component of differentiated instruction strategies promoted in the Merdeka Curriculum. Without such initial mapping, learning tends to remain homogeneous and less responsive to students' needs. Furthermore, this study emphasizes the importance of strengthening teachers' pedagogical competencies, particularly in designing interactive, project-based learning (PBL) aligned with the characteristics of vocational schools. The implementation of the Pancasila Student Profile Strengthening Project (P5) can serve as a platform to accommodate kinesthetic and visual learning styles better.

Overall, the implications of this study indicate that the successful implementation of the Merdeka Curriculum is determined by the alignment between students' understanding of their learning styles, teachers' pedagogical competence, school managerial support, and the availability of learning facilities and infrastructure.

4.2 Research Contributions

Conceptually, this study enriches the discourse on integrating learning style theory into the implementation of the Merdeka Curriculum in the context of vocational education. It demonstrates that learning styles cannot be separated from curriculum policies that emphasize differentiated instruction. Academically, this study contributes to the development of a qualitative-based learning-style analysis model in vocational high school settings. Unlike previous studies that predominantly employ quantitative approaches, this study offers a more in-depth interpretive perspective on learning dynamics.

Practically, this study provides concrete recommendations for schools in designing adaptive learning policies, including strengthening teacher training and implementing diagnostic assessments of learning styles. The findings can serve as a basis for developing programs to improve learning quality within the Merdeka Curriculum framework.

This study also contributes to the development of vocational school management by emphasizing the importance of transformational leadership in implementing new curricula. Structural support and academic supervision are essential components of successful learning reform. Additionally, the methodological contribution lies in the use of source triangulation and interactive analysis (Miles et al., 2020) to comprehensively explore learning style phenomena. This approach can be replicated in similar studies across different educational levels.

Substantively, this study highlights that prior learning cultures influence students' learning styles in vocational schools. Therefore, curriculum transformation must be accompanied by transformation in instructional methods to avoid pedagogical stagnation. Another significant contribution is the reinforcement of literature on the importance of differentiated instruction in the Merdeka Curriculum. This study clarifies that differentiation is not merely a variation of methods but a systematic strategy based on mapping students' characteristics.

Furthermore, this study contributes to the development of evidence-based educational policy, particularly in the context of vocational schools in regional areas. Theoretically, it expands the understanding that learning styles function as a mediating variable between curriculum policy and learning outcomes. Finally, this study contributes to the field of office administration education by providing empirical analysis of the relationship between learning styles and the implementation of the Merdeka Curriculum within vocational education contexts.

5. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

5.1 Research Limitations

This study provides valuable insights into integrating learning style theory into the implementation of the Merdeka Curriculum in vocational education. However, several limitations should be acknowledged. First, this study was conducted in a single vocational school, which may limit the generalizability of the findings to other educational contexts with different characteristics. The specific institutional culture, teaching practices, and resource availability may influence the results. Second, the study employed a qualitative descriptive approach, which emphasises depth of understanding rather than statistical generalisation. While this approach provides rich, contextual insights, it does not enable measurable comparisons across broader populations. Third, the identification of students' learning styles was based on interviews, observations, and documentation rather than standardised psychometric instruments. As a result, the findings reflect contextual interpretations rather than fixed classifications of learning styles. Fourth, the study focused primarily on three main learning style categories (visual, auditory, and kinesthetic), without incurporating broader multimodal or hybrid learning frameworks that may better represent the complexity of students' learning preferences. Finally, the study was conducted within a limited time frame, which may not fully capture long-term changes in students' learning styles or the sustainability of differentiated instruction practices in the Merdeka Curriculum.

5.2 Recommendation for Future Research

Based on the findings and limitations, several recommendations are proposed for future research and educational practice. First, future studies are encouraged to involve multiple schools or regions to provide more comprehensive and generalizable findings regarding learning styles in the implementation of the Merdeka Curriculum. Comparative studies across different types of schools (e.g., vocational and general education) would also enrich the analysis. Second, further research should consider mixed-method approaches that combine qualitative insights with

quantitative measures, such as standardised learning-style instruments, to strengthen the validity and reliability of findings. Third, future studies should explore multimodal learning frameworks beyond the VAK model to capture better the dynamic and flexible nature of students' learning preferences in contemporary educational settings. Fourth, longitudinal research is recommended to examine how students' learning styles evolve and how sustained implementation of differentiated instruction influences learning outcomes. From a practical perspective, schools are recommended to integrate diagnostic assessments of learning styles at the beginning of the academic year as part of instructional planning. Teachers should receive continuous professional development in designing and implementting multimodal and differentiated learning strategies aligned with the Merdeka Curriculum. Additionally, school leaders should strengthen managerial support by providing adequate learning facilities, encouraging pedagogical innovation, and conducting regular academic supervision. The implementation of project-based learning and the Pancasila Student Profile Strengthening Project (P5) should be optimised to accommodate diverse learning styles, particularly visual and kinesthetic modalities. Finally, policymakers are encouraged to develop evidence-based policies that support the integration of learning styles into curriculum implementation, ensuring that differentiated instruction is not merely conceptual but effectively practised in classrooms.

6. CONCLUSION

This study aims to analyse the learning styles of tenth-grade students in the Office Automation and Governance (OTKP) program within the implementation of the Merdeka Curriculum at SMK Syekh Abdul Qodir Al Jailani Kraksaan, Probolinggo Regency; identify the challenges encountered in its implementation; and describe the efforts made to address these challenges. Based on the findings and discussion, it can be concluded that students' learning styles within the context of the Merdeka Curriculum exhibit considerable variation, with a dominant tendency toward the auditory learning style. This is reflected in students' preference for understanding material through verbal explanations, discussions, and interactive communication during the learning process.

The findings indicate that although the Merdeka Curriculum is designed with a student-centred learning approach and provides opportunities for differentiated instruction, its implementation in practice has not yet fully optimised students' diverse learning styles. Some teachers still rely on lecture-based methods, which primarily accommodate auditory learners, leaving limited support for students with visual and kinesthetic learning preferences. This condition highlights a gap between the ideal concept of the Merdeka Curriculum and actual classroom practices.

The main challenges identified in the implementation of learning styles within the Merdeka Curriculum include: (1) students' tendency to rely on a single learning style without developing learning flexibility; (2) limited teacher understanding of differentiated instructional strategies; and (3) insufficient supporting facilities for project-based and practical learning activities. These factors affect the overall effectiveness of the learning process and the optimal achievement of students' competencies.

The findings reinforce the view that learning styles are closely related to the success of the learning process, particularly within a curriculum that emphasises differentiation and the development of individual potential. The Merdeka Curriculum offers significant opportunities to integrate diverse learning styles into instructional strategies; however, its success largely depends on the readiness of human resources and the support of the school environment.

Acknowledgments

The author would like to thank Mrs Durinda Puspasari, S.Pd., M.Pd., as the academic advisor, for her continuous guidance, valuable feedback, and academic support during the research process. Appreciation is also extended to the principal, the vice principal for student affairs, the teachers of the Office Automation and Governance program, and all tenth-grade OTKP students at SMK Syekh Abdul Qodir Al Jailani Kraksaan who willingly participated as informants and provided essential data for this study.

The author also acknowledges the Faculty of Economics and Business, Universitas Negeri Surabaya, for providing academic support and facilities during the completion of this study. Finally, heartfelt gratitude is extended to the author's family for their prayers, moral support, and unwavering motivation throughout the academic journey. May all contributions and support be rewarded with goodness and lasting merit.

CRediT Authorship Contribution Statement

All authors discussed the results, contributed to the final manuscript, and approved the final version for publication. Anisa Ayu Lestarina: Conceptualization; Methodology; Validation; Formal analysis; Investigation; Data Curation; Writing - Original Draft. Durinda Puspasari: Conceptualization, Writing - Review & Editing.

Declaration of Generative AI (GenAI) Usage in Scientific Writing

The authors declare that Google Gemini was utilized as a Generative Artificial Intelligence (GenAI) tool to assist with text generation, language enhancement, and refinement throughout the manuscript. The tool was used to improve clarity, grammar, coherence, and overall language quality. The final content, including the research findings and conclusions, was reviewed, revised, and approved by the authors to ensure its accuracy and alignment with the study's objectives. All instances of Generative AI usage in this article were conducted by the authors in accordance with the SAJGTIE GenAI Tool Usage Policy, with the authors assuming full responsibility for the originality, accuracy, and integrity of the work."

Conflict of Interest Statement

The authors declare that they have no competing financial interests or personal connections that could be perceived to influence the results of this research.

Funding Statement

The authors received no external funding for this study.

REFERENCES

Abduhrohman, M. N., Qonita, N., Yulianti, Y., Hanifah, Z. P., Jenuri, J., & Suwarma, D. M. (2025). Relevansi penggunaan metode ceramah dalam pembelajaran berdiferensiasi di sekolah dasar. *Jurnal Ilmiah Pendidikan Dasar (JIPDAS)*, *5*(1), 257-261. https://doi.org/10.37081/jipdas.v5i1.2523

Altamimi, A. M., Azzeh, M., & Albashayreh, M. (2022). Predicting students' learning styles using regression techniques. *arXiv preprint arXiv:2209.12691*. https://doi.org/10.48550/arXiv.2209.12691

Anggoro, I., Suhendro, P. P. M., Fahrurrozi, F., & Hasanah, U. (2024). Analisis gaya belajar siswa dalam mengoptimalkan pemahaman siswa: Studi deskriptif di SD Negeri Klender 10. *Ideguru: Jurnal Karya Ilmiah Guru*, *9*(3), 1686-1692. https://doi.org/10.51169/ideguru.v9i3.1067

Creswell, J. W., & Creswell, J. D. (2023). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (6th Edition (Ed.)). SAGE Publications. https://uk.sagepub.com/en-gb/asi/research-design/book27055 0

Creswell, J. W., & Poth, C. N. (2024). Qualitative Inquiry and Research Design: Choosing Among Five Approaches (5th Edition). SAGE Publications. https://uk.sagepub.com/en-gb/asi/qualitative-inquiry-and-research-design/book266033

Darmiah, D. (2025). Kesesuaian Metode Pembelajaran dengan Gaya Belajar Siswa: Studi pada MIN 18 Aceh Besar. *Jurnal Ilmiah Mahasiswa*, 3(1), 21–29. https://doi.org/10.22373/t1v8h415

Demberel, T., & Baasanjav, U. (2025). Identifying Learners Learning Styles Using The VARK Model. International Journal of Innovative Technologies in Social Science, 2(46) SE-Education and Leadership. https://doi.org/10.31435/ijitss.2(46).2025.3423

Dunn, R. S., & Dunn, K. J. (1993). Teaching secondary students through their individual learning styles: Practical approaches for grades 7-12. https://cir.nii.ac.jp/crid/1970023484965606303

Flick, U. (2024). The SAGE handbook of qualitative research quality. SAGE Publications Limited.

Hidayah, N. (2024). Elementary School Students' Learning Styles: Perspective of Creative Thinking Skills. Jurnal Ilmiah Sekolah Dasar, 8(2), 202–211. https://doi.org/10.23887/jisd.v8i2.68385

Ilmiyah, L., Auliah, I. N., Andrianti, R. A., & Pratama, F. R. P. (2025). Kontribusi Gaya Belajar Dan Motivasi Belajar Terhadap Hasil Belajar Bahasa Indonesia. *Jurnal Terapan Pendidikan Dasar Dan Menengah, 5*(1), 19–30. https://doi.org/10.28926/jtpdm.v5i1.1883

Jiang, B., Gu, M., & Yin, C. (2022). Exploring students' backtracking behaviors in digital textbooks and its relationship to learning styles. ArXiv Preprint ArXiv:2205.14822. https://doi.org/10.48550/arXiv.2205.14822

Paturusi, M. A. (2022). Students learning style by using Neil Fleming's VARK model and inventory. *Journal of Language Testing and Assessment*, *2*(1), 79-86. https://doi.org/10.56983/jlta.v2i1.71

Kementerian Pendidikan Riset, dan Teknologi, K. (2022). Buku Saku Kurikulum Merdeka. Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi. https://kurikulum.kemdikbud.go.id/

Khor, E. T., & K, M. (2024). A Systematic Review of the Role of Learning Analytics in Supporting Personalized Learning. In Education Sciences (Vol. 14, Issue 1, p. 51). https://doi.org/10.3390/educsci14010051

Kolb, D. A. (2014). Experiential learning: Experience as the source of learning and development. FT press.

Langelaan, B. N., Gaikhorst, L., Smets, W., & Oostdam, R. J. (2024). Differentiating instruction: Understanding the key elements for successful teacher preparation and development. Teaching and Teacher Education, 140, 104464. https://doi.org/10.1016/j.tate.2023.10446 4

Latifah, D. N. (2023). Analisis Gaya Belajar Siswa Untuk Pembelajaran Berdiferensiasi di Sekolah Dasar. LEARNING : *Jurnal Inovasi Penelitian Pendidikan Dan Pembelajaran, 3*(1 SE-), 68–75. https://doi.org/10.51878/learning.v3i1.2067

Leavy, P. (Ed.). (2020). The Oxford Handbook of Qualitative Research. Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190847388.001.0001

Melaku, A. K., Ali, A. Y., & Tesfaye, T. M. (2025). Teachers' and students' perception, practices, and challenges of active learning strategy utilization in primary schools of North Wollo Zone, Ethiopia. Smart Learning Environments, 12(1), 51. https://doi.org/10.1186/s40561-025-00391-4

Miles, M. B., Huberman, A. M., & Saldana, J. (2020). Qualitative Data Analysis: A Methods Sourcebook (4th Edition (Ed.)). SAGE Publications. https://www.worldcat.org/title/1135933770

Mulasi, S., Mujiburrahman, M., Habiburrahim, H., Silahuddin, S., & Ghazali, N. H. M. (2025). Differentiation-Based Learning: Understanding Individual Differences In Learning Strategies. *JURNAL ILMIAH DIDAKTIKA: Media Ilmiah Pendidikan Dan Pengajaran, 25*(2), 123–136. https://doi.org/10.22373/jid.v25i2.24189

Muniyapillai, T., Kulothungan, K., Abdul Malik, S. R., Jeevaraj, S. J., Ashokan, S., Ravichandran, S., Ambalavanan, S., & Jayaraman, S. (2023). Learning styles and their relationship with preferred teaching methodologies and academic achievement among medical students in teaching medical college, Tamil Nadu. Journal of Education and Health Promotion, 12(1). https://journals.lww.com/jehp/fulltext/2023/07290/learning_styles_and_their_relationship_with.256.aspx

OECD. (2022). Trends Shaping Education 2022. OECD Publishing. https://doi.org/10.1787/6ae8771a-en

Pratama, M. A., Sofa, K., Naila, N., Rohmah, N., & Pratama, F. R. P. (2025). Pengaruh Gaya Belajar Terhadap Pembelajaran Siswa Sekolah Dasar. Jurnal Terapan Pendidikan Dasar Dan Menengah, 5(1), 39–45. https://doi.org/10.28926/jtpdm.v5i1.1887

Puadah, U. S., & Hizriyani, R. (2024). Strategi Pembelajaran Diferensiasi Gaya Belajar sebagai Pendorong Motivasi Belajar Peserta Didik. Paedagogi: Jurnal Kajian Ilmu Pendidikan (E-Journal) Учредители: State University of Medan, 10(2). https://doi.org/10.24114/paedagogi.v10i2.64459

Putri, K., & Elizar. (2025). Implementing a Differentiation Approach in Teaching to Accommodate Diverse Learning Styles of Primary School Students : A Systematic Literature Review. Journal for Lesson and Learning Studies, 8(1 SE-Articles), 119–128. https://doi.org/10.23887/jlls.v8i1.89659

Rahayu, R., Rosita, R., Rahayuningsih, Y. S., Hernawan, A. H., & Prihantini, P. (2022). Implementasi kurikulum merdeka belajar di sekolah penggerak. Jurnal Basicedu, 6(4), 6313–6319. https://doi.org/10.31004/basicedu.v6i4.3237

Rahayuningsih, E., & Hanif, M. (2024). Persepsi Guru dan Siswa terhadap Implementasi Kurikulum Merdeka (Perspektif Social Learning Theory (SLT). Journal of Education Research, 5(3 SE-Articles), 2828–2839. https://doi.org/10.37985/jer.v5i3.1305

Rahmadayanti, D., & Hartoyo, A. (2022). Potret kurikulum merdeka, wujud merdeka belajar di sekolah dasar. Jurnal Basicedu, 6(4), 7174–7187. https://doi.org/10.31004/basicedu.v6i4.3431

Richardson, J. W., & Khawaja, S. (2025). Meta-synthesis of school leadership competencies to support learner-centered, personalized education. Frontiers in Education, Volume 10-2025. https://doi.org/10.3389/feduc.2025.1537055

Rismayasa, K. A., Wibawa, I. M. C., & Suarjana, I. M. (2022). Hubungan Antara Gaya Belajar Dan Motivasi Belajar Dengan Hasil Belajar IPS Siswa Kelas IV SD . Mimbar Pendidikan Indonesia, 2(2 SE-Articles), 93–107. https://doi.org/10.23887/mpi.v2i2.40183

Santrock, J. W. (2024). *Educational psychology 8th ed*. Mcgraw Hill

Sati, Aiman Faiz, & Lia Yulianasari. (2024). Analysis of Student Learning Styles as an Implementation of Differentiated Learning Strategies in the Indonesian Education Merdeka Curriculum. Jurnal Elementaria Edukasia, 7(3 SE-Articles), 2971–2984. https://doi.org/10.31949/jee.v7i3.9148

Tisdell, E. J., Merriam, S. B., & Stuckey-Peyrot, H. L. (2025). Qualitative research: A guide to design and implementation. John Wiley & Sons.

Trisnanda, S. F., & Asriyanti, F. D. (2025). Analisa Gaya Belajar Dimensi Visual, Auditori dan Kinestetik Dalam Pembelajaran IPAS. Jurnal Basicedu, 9(5 SE-Articles), 1671–1678. https://doi.org/10.31004/basicedu.v9i5.10462

Triwiyanto, T. (2024). Manajemen Pendidikan & Kepemimpinan Pendidikan. Proceedings Series of Educational Studies, 407–418. https://conference.um.ac.id/index.php/pses/article/view/8662

Ulkhaira, A. (2025). Hubungan Gaya Belajar Model VARK Dengan Aktivitas Belajar Siswa Kelas X di SMA Negeri 1 Pantai Cermin. Pendas: Jurnal Ilmiah Pendidikan Dasar, 10(03), 226–236. https://doi.org/10.23969/jp.v10i03.32754

UNESCO. (2021). Reimagining Our Futures Together: A New Social Contract for Education. UNESCO. https://doi.org/10.54675/ASRB4722

Urhahne, D., & Wijnia, L. (2021). A review on the accuracy of teacher judgments. Educational Research Review, 32, 100374. https://doi.org/https://doi.org/10.1016/j.edurev.2020.100374

Wieselmann, J. R., Sager, M. T., & Price, B. C. (2022). STEM Project-Based Instruction: An Analysis of Teacher-Developed Integrated STEM PBI Curriculum Units. In Education Sciences (Vol. 12, Issue 9, p. 626). https://doi.org/10.3390/educsci12090626

Author Information

[1*] **Luna Nuranis Zakiah,** anisa.19053@mhs.unesa.ac.id
Department of Office Administration Education, Universitas Negeri Surabaya, Surabaya, Indonesia
Address: Jl. Ketintang, Karah, Kec. Jambangan, Kota Surabaya, dan Kampus Lidah Wetan (Fakultas Pendidikan, Olahraga, Bahasa) di Jl. Lidah Wetan, Lakarsantri, Surabaya

[2] **Durinda Puspasari,** durindapuspasari@unesa.ac.id, https://orcid.org/0000-0002-2177-6954
Department of Office Administration Education, Universitas Negeri Surabaya, Surabaya, Indonesia
Address: Jl. Ketintang, Karah, Kec. Jambangan, Kota Surabaya, dan Kampus Lidah Wetan (Fakultas Pendidikan, Olahraga, Bahasa) di Jl. Lidah Wetan, Lakarsantri, Surabaya