JIKAP
Jurnal Informasi dan Komunikasi Administrasi Perkantoran
Vol. 10, No.1, Tahun 2026
Hlm. 69

Merdeka curriculum implementation and school facilities: effects on vocational students' creative thinking

Arvano Sahwa Riordan*, Subroto Rapih

Office Administration Education, Sebelas Maret University, Surakarta, Indonesia

Email: arvanoriordan2@gmail.com

Abstrak

Penelitian ini bertujuan untuk menguji pengaruh parsial dan simultan dari implementasi Kurikulum Merdeka dan fasilitas sekolah terhadap kemampuan berpikir kreatif siswa kelas X dan XI program Manajemen Perkantoran dan Layanan Bisnis (MPLB) di SMK Negeri 1 Karanganyar. Desain penelitian kausal kuantitatif digunakan, dengan data dikumpulkan dari 106 responden yang dipilih melalui pengambilan sampel acak bert stratified proporsional. Kuesioner diberikan untuk mengumpulkan data primer, dan instrumen divalidasi melalui pengujian validitas dan reliabilitas. Analisis data dilakukan menggunakan regresi linier berganda dengan IBM SPSS 26.0. Hasil penelitian menunjukkan bahwa: (1) Implementasi Kurikulum Merdeka memiliki pengaruh positif yang signifikan terhadap kemampuan berpikir kreatif siswa, dengan t(103) = 7,854, p < 0,001; (2) Fasilitas sekolah tidak memiliki pengaruh yang signifikan terhadap kemampuan berpikir kreatif siswa, dengan t(103) = 1,626, p = 0,107; dan (3) Implementasi Kurikulum Merdeka dan fasilitas sekolah secara bersamaan memiliki pengaruh positif yang signifikan terhadap kemampuan berpikir kreatif siswa, dengan F(2, 103) = 46,680, p < .001. Variabel-variabel ini secara kolektif menjelaskan 47,5% varians dalam kemampuan berpikir kreatif (R^2 = .475).

Kata kunci: berpikir inovatif; sarana prasarana; sistem pembelajaran; vokasi

Abstract

This study aimed to examine the partial and simultaneous effects of Merdeka Curriculum implementation and school facilities on creative thinking skills among Grade X and XI students in the Office Management and Business Services (MPLB) program at SMK Negeri 1 Karanganyar. A quantitative causal research design was employed, with data collected from 106 respondents selected through proportionate stratified random sampling. Questionnaires were administered to gather primary data, and the instruments were validated through validity and reliability testing. Data analysis was conducted using multiple linear regression with IBM SPSS 26.0. The findings revealed that: (1) Merdeka Curriculum implementation had a significant positive effect on students' creative thinking skills, with t(103) = 7.854, p < .001; (2)

---

* *Corresponding author*

Citation in APA style: Riordan, A.S., & Rapih, S. (2026). Merdeka curriculum implementation and school facilities: effects on vocational students' creative thinking. *Jurnal Informasi dan Komunikasi Administrasi Perkantoran, 10*(1), 69-78.
https://dx.doi.org/10.20961/jikap.v10i1.106482

school facilities did not have a significant effect on students' creative thinking skills, with t(103) = 1.626, p = .107; and (3) Merdeka Curriculum implementation and school facilities simultaneously had a significant positive effect on students' creative thinking skills, with F(2, 103) = 46.680, p < .001. These variables collectively explained 47.5% of the variance in creative thinking skills (R^2 = .475).

Keywords: infrastructure; innovative thinking; learning systems; vocational education

Received July 20, 2025; Revised August 30, 2025; Accepted October 23, 2025; Published Online January 02, 2026

https://dx.doi.org/10.20961/jikap.v10i1.106482

Introduction

Building high-quality human resources constitutes a fundamental priority that requires comprehensive examination through education. According to Artamevia et al. (2025), quality human resources encompass individuals who possess advanced skills, knowledge, and competencies, alongside attitudes and behaviors that support organizational goal achievement. Such individuals demonstrate not only technical proficiency but also strong interpersonal and managerial capabilities, enabling them to adapt rapidly to change, solve problems effectively, and contribute significantly to organizational success. The rapid and massive global growth has transformed modern education, which now focuses on skills based on the need to prepare younger generations for increasingly complex challenges (Ahmad et al., 2024).

Creative thinking represents one critical skill that younger generations, including school students, must develop. For vocational secondary school (SMK) students specifically, creative thinking skills are essential, as these students are trained to acquire knowledge and competencies that prepare them for workforce entry upon graduation (Efrinaldi et al., 2023). Upon entering the workforce, SMK graduates encounter competitive labor market conditions that demand advanced skills and creativity in both industrial and retail sectors (Nilsson & Backman, 2024). According to Alfa et al. (2024), SMK students represent a human resource with significant potential for generating creative ideas for industrial products. Furthermore, Marnita et al. (2022) emphasized the concept of 'Thinking Outside The Box,' suggesting that rigid thinking patterns correlate with lower creativity, which necessitates developing flexible mindsets to enhance creative thinking.

Creative thinking is essential for workers across all fields and for students in the 21st century. Technological developments present additional challenges, with emerging 'smart' technologies including robotics, artificial intelligence, 3D printing, augmented reality, virtual reality, cloud computing, and the Internet of Things capable of replacing human labor. Future conditions are becoming increasingly difficult to predict due to unexpected developments arising from technology creation and utilization, leading to disruption that creates dynamic and rapidly changing environments. Vocational schools must anticipate these changes and develop individuals who combine knowledge, practical and social skills, positive attitudes, and digital competencies to adapt quickly to evolving workplace and societal demands. A 2019 U-Reporters poll indicated that essential skills for future employment include creativity (20%), digital skills (17%), critical thinking (12%), and problem-solving (8%), with creativity ranking highest among the skills needed for future career preparation.

Despite the recognized importance of creative thinking for SMK students, many students have not yet optimized this skill. Rasnawati et al. (2019) found that students' creative thinking abilities remained low, with only 39% of student responses achieving maximum scores. The percentage distribution across creativity indicators showed flexibility at 48%, fluency at 36%, originality at 22%, and elaboration at 3%. Research by Bharata et al. (2022) demonstrated that the majority of 34 students had not developed creative thinking ability patterns, as revealed through

observation, tests, interviews, and documentation, with creativity levels distributed as 5.88% (moderately creative), 41.18% (less creative), and 52.94% (not creative).

Within the Office Management and Business Services (MPLB) program at SMK Negeri 1 Karanganyar, indications of suboptimal creative thinking abilities among Grade X and XI students persist. Students demonstrate limited understanding of new knowledge, minimal capacity for generating novel ideas, and reluctance to attempt new approaches. Additionally, inadequate school facilities, such as insufficient internet connectivity, impede students' exploration and access to online resources and programs that could enrich their knowledge and support creative development.

One factor contributing to suboptimal creative thinking skills is the lack of innovation in learning materials prepared by teachers during instruction, which indicates incomplete implementation of the Merdeka Curriculum (Hasmiati et al., 2023). The Merdeka Curriculum represents an educational policy that provides freedom and flexibility in managing learning processes, characterized by student learning experiences that are relevant and centered on competency development. Teachers' role in preparing learning materials is crucial, as these materials serve as guides for implementing instruction in classrooms, laboratories, or external settings (Yuliani, 2021). The Indonesian government, through various policies and national education reforms under the Ministry of Education and Culture, designed and implemented the Merdeka Curriculum for primary and secondary education levels. This curriculum aims to empower schools at these levels to develop curricula more relevant to students' needs and characteristics while encouraging critical and creative thinking through student freedom in selecting subjects of interest (Prahastina et al., 2024). According to Tanjung et al. (2025), educational policy serves as a strategic instrument designed to improve human resource quality through effective and sustainable learning, functioning not only as guidance for educational implementation but also as a response to global challenges including technological change, labor market demands, and national character development.

Another factor affecting students' creative thinking skills is inadequate school facilities, which create difficulties for students in creating and developing new ideas, thereby impeding their learning process. School facilities comprise various physical infrastructure and equipment provided by educational institutions to support and facilitate teaching and learning activities, characterized by the condition and completeness of these resources. According to Daulay et al. (2022), school facilities influence student activities and creativity, as facilities enable students to engage in creative activities creating without adequate facilities is extremely difficult in the current era. Barrett et al. (2019) found that quality school facilities, including spaces designed to support interaction and creativity, influence students' capacity for innovation and creative thinking. Research by Mandailina (2024) indicated that supportive and motivating school environments can enhance student engagement in learning, thereby improving their creative thinking and problem-solving abilities.

Reasearch Methods

This study was conducted at SMK Negeri 1 Karanganyar, a vocational educational institution located in Surakarta Regency, Central Java Province, Indonesia. The research was carried out from April to June 2025, encompassing preparation, proposal seminar, proposal revision, data collection, and report writing phases.

A quantitative research methodology was employed. According to Sugiyono (2022), quantitative research methods are grounded in positivist philosophy, used to investigate specific populations or samples, with data collection using research instruments and quantitative or statistical data analysis aimed at testing predetermined hypotheses. This study incorporated three variables: two independent variables and one dependent variable. According to Elvera (2021), independent variables influence dependent variables, causing changes in dependent variables. The independent variables in this study were Merdeka Curriculum implementation (X_1) and school facilities (X_2). The dependent variable, which is affected by independent variables as a consequence of their existence, was creative thinking skills (Y).

Primary data were collected through questionnaires. The study population comprised all Grade X and XI students in the MPLB program at SMK Negeri 1 Karanganyar, totaling 144 students.

The sample size was calculated using the Slovin formula with a 5% margin of error, resulting in 106 students. Proportionate stratified random sampling was employed as the sampling technique, appropriate when populations contain heterogeneous, proportionally stratified elements (Elvera, 2021). This technique ensured that each class was proportionally represented in the sample according to the number of students in each class, thereby obtaining an accurate representation of the population.

Data collection employed observation and questionnaire methods to generate accurate and detailed data regarding behaviors, events, or specific situations. Observation was conducted during Field Introduction to Schools (PLP) activities. The questionnaire utilized a five-point Likert scale ranging from "strongly agree" to "strongly disagree." The research instrument consisted of 13 items for Merdeka Curriculum implementation (X_1), 12 items for school facilities (X_2), and 14 items for creative thinking skills (Y).

Instrument validation employed validity testing using the product-moment correlation formula to measure questionnaire validity. A valid questionnaire effectively reveals what it intends to measure (Elvera, 2021). Valid instruments indicate that the measurement tools used to obtain data are valid, meaning they measure what they are supposed to measure (Sugiyono, 2022). Reliability testing used Cronbach's alpha to determine consistency and stability of research instrument measurements. Prior to the main study, a pilot test was conducted with 31 students outside the research sample, as approximately 30 participants are considered adequate and representative for statistical testing of instrument validity and reliability. Data analysis involved tabulation, assumption testing (normality, linearity, and multicollinearity tests), and hypothesis testing using multiple linear regression, t-test, F-test, and coefficient of determination (R^2). All quantitative data analysis was processed using IBM SPSS version 26.0.

Prior to data collection, the researcher obtained written permission from the principal of SMK Negeri 1 Karanganyar. Student respondents received explanations regarding research objectives, procedures, and assurance that their participation was voluntary. The researcher guaranteed confidentiality of respondent identities and all provided data, which were used solely for research purposes.

Result and Discussion

Research Result

Prior to hypothesis and assumption testing, a pilot study was conducted to ensure questionnaire validity and reliability. The pilot test distributed questionnaires to 31 Grade X and XI MPLB students. The questionnaire comprised 40 items: 14 items for Merdeka Curriculum implementation (X_1), 12 items for school facilities (X_2), and 14 items for creative thinking skills (Y). Validity testing for Merdeka Curriculum implementation (X_1) indicated that 13 items were valid while one item was invalid. For school facilities (X_2), all 12 items were valid. For creative thinking skills (Y), all 14 items were valid. Reliability testing demonstrated that questionnaires for each variable possessed adequate reliability levels. Merdeka Curriculum implementation (X_1) showed a Cronbach's alpha of .842, school facilities (X_2) showed .878, and creative thinking skills (Y) showed .890. As all reliability values exceeded .50, all questionnaire items were deemed reliable and suitable for further research.

The normality test revealed a significance value of .098 > .05, indicating that the data were normally distributed. The linearity test for Merdeka Curriculum implementation (X_1) and creative thinking skills (Y) showed a deviation from linearity value of .137 > .05, indicating a linear relationship between these variables. Similarly, the linearity test for school facilities (X_2) and creative thinking skills (Y) showed a deviation from linearity value of .085 > .05, confirming a linear relationship. The multicollinearity test indicated that tolerance values for both independent variables were .809 > .10 and VIF values were 1.237 < 10, confirming no multicollinearity. The heteroscedasticity test using scatterplot analysis showed that residual data points were randomly distributed around zero without forming patterns, indicating no heteroscedasticity. Based on these assumption tests, hypothesis testing proceeded.

Table 1
Multiple Linear Regression Analysis Results

Model	B	Std. Error	Beta
(Constant)	8,914	4,521	
Merdeka Curriculum Implementation	0,805	0,103	0,623
School Facilities	0,119	0,73	0,129

Source: Data processed by researchers (2025)

Multiple linear regression analysis was conducted because more than one variable was used, aiming to determine the direction and magnitude of the influence of independent variables Merdeka Curriculum implementation (X_1) and school facilities (X_2) on the dependent variable, creative thinking skills (Y). Results from Table 1 yield the regression equation: $Y = 8.914 + 0.805X_1 + 0.119X_2$. This equation can be interpreted as follows: (1) The constant value for creative thinking skills (Y) is 8.914, with the positive sign indicating a positive relationship between independent and dependent variables. When Merdeka Curriculum implementation (X_1) and school facilities (X_2) equal zero or remain unchanged, creative thinking skills (Y) equals 8.914. (2) The regression coefficient for Merdeka Curriculum implementation (X_1) is 0.805, meaning that each unit increase in Merdeka Curriculum implementation increases creative thinking skills, assuming other variables remain constant. (3) The regression coefficient for school facilities (X_2) is 0.119, indicating that better school facilities increase creative thinking skills, assuming other variables remain constant.

Table 2
t-Test Results

Model	T	Significance
(Constant)	1,972	0,051
Merdeka Curriculum Implementation	7,854	0,000
School Facilities	1,626	0,107

Source: Data processed by researchers (2025)

The t-test results in Table 2 show that Merdeka Curriculum implementation had a significance value of .000 < .05 and t = 7.854 > t-critical = 1.663 ($\alpha = .05$, df = 103). These results indicate a significant partial effect of Merdeka Curriculum implementation (X_1) on creative thinking skills (Y). For school facilities, the significance value was .107 > .05 and t = 1.626 < t-critical = 1.663, indicating no significant partial effect of school facilities (X_2) on creative thinking skills (Y)..

Table 3
F-Test Results (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Significance
Regression	1803,611	2	901,806	46,680	0,000
Residual	1989,832	103	19,319		
Total	3793,443	105			

Source: Data processed by researchers (2025)

Table 3 shows p < .001 and F(2, 103) = 46.680 > F-critical = 3.08. These results indicate that Merdeka Curriculum implementation (X_1) and school facilities (X_2) simultaneously have a significant effect on creative thinking skills (Y), confirming that the regression model adequately explains the dependent variable.

Table 4
Coefficient of Determination Results

R	R Square	Adjusted R Square	Std. Error of the Estimate
0,690	0,475	0,465	4,395

Source: Data processed by researchers (2025)

The coefficient of determination analysis was conducted to determine the percentage of influence of Merdeka Curriculum implementation (X_1) and school facilities (X_2) on creative thinking skills (Y). Table 4 shows $R^2 = .475$, indicating that 47.5% of the variance in creative thinking skills (Y) is explained by Merdeka Curriculum implementation (X_1) and school facilities (X_2). The remaining 52.5% is influenced by other factors not examined in this study.

Discussion

The first hypothesis demonstrated that Merdeka Curriculum implementation significantly affects creative thinking skills of Grade X and XI MPLB students at SMK Negeri 1 Karanganyar. Multiple linear regression analysis revealed that Merdeka Curriculum implementation (X_1) has a regression coefficient of 0.805 on creative thinking skills (Y), with a positive and directional relationship. This indicates that improvements in Merdeka Curriculum implementation quality tend to be accompanied by increases in students' creative thinking skills, assuming other model variables remain constant. This result was confirmed through the partial significance test (t-test), where $p < .001$ and $t = 7.854 >$ t-critical = 1.663. Thus, H_0 was rejected and H_1 was accepted, confirming a significant influence of Merdeka Curriculum implementation on students' creative thinking skills.

This finding aligns with research by Silaban et al. (2023), who found that Merdeka Curriculum implementation positively impacts student creativity enhancement in learning. The result also corresponds with Fatmawati and Jaya's (2025) research, which found that Merdeka Curriculum implementation significantly contributes to developing students' creative thinking skills, particularly in vocational education contexts. Research by Pebriani et al. (2025) similarly showed that Merdeka Curriculum implementation encourages teachers to be more innovative in developing project-based learning strategies, impacting increased active participation and original student ideas. Meanwhile, Maryani et al. (2024) identified that implementing diagnostic assessment and differentiated instruction within the Merdeka Curriculum encourages students to think more independently and reflectively two essential elements in creative thinking processes.

In the context of vocational secondary education, the Merdeka Curriculum provides significant opportunities for educational institutions to align learning with workforce demands and student characteristics (Yahya et al., 2024). Freedom in designing learning projects, selecting contextual methods, and cross-subject collaboration enables integration between academic content and 21st-century skills, including creative thinking (Nur'aini & Narimo, 2023). This addresses the challenge that vocational education must not only produce work-ready graduates but also individuals capable of adapting, innovating, and providing creative solutions to industrial problems. Within this framework, creative thinking becomes not merely an indicator of learning success but also essential capital for students to survive and thrive in an increasingly complex and rapidly changing work landscape.

This study's findings reflect that the Merdeka Curriculum provides extensive opportunities for developing students' creative thinking skills through approaches emphasizing flexibility, learning personalization, and individual competency development orientation. This curriculum is designed to shift the learning paradigm from uniform, academically target-oriented models to systems accommodating diversity in student potential, interests, and learning styles. Students are no longer positioned as passive knowledge recipients but as active subjects encouraged to explore ideas, create solutions to real problems, and build connections between learning experiences and daily life. Contextual, interdisciplinary, and experience-based learning projects become strategic means for

students to practice imagination, intellectual risk-taking courage, and thinking resilience all primary elements of creative thinking.

The Merdeka Curriculum's student agency-centered approach and Pancasila Student Profile strengthening fundamentally transform teachers' roles in learning processes. Teachers no longer function as sole knowledge sources but as facilitators, mentors, and designers of collaborative and reflective learning environments. By providing space for more authentic, achievement-based assessment and accompanying students in project-based learning, teachers help students build confidence and innovative capacity for facing real-world challenges. This role is crucial in vocational education contexts, as current workforce demands require not only technical skill mastery but also adaptability, innovation, and creative problem-solving abilities. Accordingly, more optimal Merdeka Curriculum implementation corresponds to greater opportunities for increasing students' creative thinking capacity. These findings confirm that the Merdeka Curriculum is not merely an administrative instrument but a crucial strategy for building adaptive, relevant, and transformative vocational education systems amid global demands and knowledge-based industrial revolution dynamics.

The second hypothesis indicated that school facilities did not significantly affect creative thinking skills of Grade X and XI MPLB students at SMK Negeri 1 Karanganyar. Although the regression coefficient showed a positive relationship, the t-test yielded $p = .107 > .05$ and $t = 1.626 < t\text{-critical} = 1.663$. Based on these calculations, H_0 was accepted, indicating that school facilities' influence on students' creative thinking skills is not statistically significant, despite a tendency toward a directional relationship.

Several previous studies reported different results. Lubis et al. (2025) found that complete learning facilities including laboratories, digital media, and practice rooms contribute to creating conducive learning environments for developing student creativity. Hariyadi and Hariyati (2020) confirmed that technology facility availability and access in schools foster exploratory spirit and increase creative thinking motivation, especially in project-based learning. Gregory et al. (2013) also reported that students learning in classrooms equipped with innovative facilities, such as digital whiteboards and interactive teaching aids, demonstrated higher performance in creative idea and non-linear problem-solving indicators.

The discrepancy between this study's results and previous findings may be explained by suboptimal facility utilization. Physical facility presence in schools does not necessarily meaningfully impact learning processes unless supported by learning patterns that encourage exploration and creativity. At SMK Negeri 1 Karanganyar, facilities were likely available in basic form but had not been maximally utilized by teachers and students as part of creative learning strategies. This aligns with Kusuma and Wibowo's (2025) view that learning facility effectiveness is determined not by quantity or sophistication but by active integration into problem-solving-based learning processes with independent student involvement.

Non-structural factors such as pedagogical approaches, classroom climate, and learning motivation are also crucial in shaping students' creative thinking abilities. Research by Amabile (1996) demonstrated that social and psychological environments supporting expressive freedom, providing experimental space, and not excessively emphasizing punishment for mistakes constitute essential conditions for creativity emergence. In learning, students need to feel emotionally safe to express new ideas without fear of criticism. When teachers implement open, dialogic learning strategies that foster curiosity, students tend to be more cognitively and affectively engaged. Sternberg and Lubart's (2014) study reinforced this view by emphasizing the importance of 'creative climate'—a learning atmosphere that values originality, encourages flexible thinking, and reinforces student initiative.

Several studies have noted that students' courage in expressing ideas, willingness to take intellectual risks, and psychological support from teachers and peers are more influential than mere physical school conditions (Amabile, 1996). In vocational education contexts, where learning is directed toward applied skills, learning experiences that evoke reflection and actual problem-solving have greater contributions to creativity development. When teachers can frame learning as real challenges relevant to the workforce, students are trained to think outside conventions and present unique solutions. Accordingly, creativity is more accurately understood as a result of dynamic

interaction between individuals and social learning environments rather than an automatic product of facility availability. Environments encouraging active participation, cooperation, and critical reflection become more determining than mere completeness of school tools or physical facilities. This implies that student creativity enhancement efforts should be directed not only toward facility procurement but also toward building learning cultures that support and challenge students' intellectual capacities sustainably.

The third hypothesis stated that Merdeka Curriculum implementation and school facilities simultaneously provide significant effects on creative thinking skills of Grade X and XI MPLB students at SMK Negeri 1 Karanganyar. This can be interpreted as better Merdeka Curriculum implementation and school facility improvement corresponding to higher student creative thinking skills. The F-test showed $F = 46.680$ with $p < .001$, indicating that Merdeka Curriculum implementation (X_1) and school facilities (X_2) simultaneously have a significant effect on creative thinking skills (Y), confirming the regression model's adequacy. Based on Effective Contribution (SE) calculations, Merdeka Curriculum implementation (X_1) contributes 42.3% and school facilities (X_2) 5.18% to creative thinking skills (Y). For Relative Contribution (SR), Merdeka Curriculum implementation (X_1) accounts for 89.2% while school facilities (X_2) account for 10.9%. These results indicate that Merdeka Curriculum implementation (X_1) has the most dominant influence compared to school facilities (X_2) in this regression model.

In vocational secondary education contexts, the Merdeka Curriculum presents pedagogical approaches aligned with workforce demands and 21st-century dynamics. This curriculum emphasizes project-based learning, authentic assessment, and Pancasila Student Profile strengthening—all elements directly correlated with creative thinking skills. School facilities serve as supporting infrastructure that must be used strategically. Good facilities without progressive curriculum approaches often become passive infrastructure with no direct impact on student competency achievement. This study's findings strengthen the argument that student-centered learning orientations, facilitated through transformative curriculum policies, have more substantial impacts on forming higher-order thinking skills.

These findings also demonstrate the importance of alignment between curriculum policy and educational facility provision. Schools are expected not only to provide physical facilities but also to ensure consistent, creative, student needs-based Merdeka Curriculum implementation. Teachers as curriculum implementation leaders require ongoing training to optimize available facility utilization and translate Merdeka Curriculum principles into daily learning practices. Synergy between structural and non-structural aspects of educational systems becomes an important foundation for creating learning environments that truly support the growth of creative, adaptive, and innovative thinking abilities among vocational school students.

Conclusion

This study yields three key findings. First, Merdeka Curriculum implementation (X_1) has a positive and significant partial effect on creative thinking skills (Y). Second, school facilities (X_2) do not have a significant partial effect on creative thinking skills (Y). Third, Merdeka Curriculum implementation (X_1) and school facilities (X_2) simultaneously have a positive and significant effect on creative thinking skills among Grade X and XI students at SMK Negeri 1 Karanganyar. Based on data analysis, Merdeka Curriculum implementation and school facilities contribute 47.5% to creative thinking skills, with the remaining 52.5% influenced by factors not examined in this study. Future researchers are recommended to incorporate additional variables not tested but potentially influential on creative thinking skills. Researchers are also encouraged to expand population and sample coverage to obtain more representative results. This study at SMK Negeri 1 Karanganyar had several limitations: Grade XII students were not included because they were participating in Work Practice (PKL) activities outside the school during the research period. Addressing this limitation, future research should carefully consider appropriate timing for data collection to include all student grade levels for more comprehensive findings.

References

Ahmad, F., Nabila, A. Z., Magfiroh, S. Z., Hafizhah, N. Z., Khomsah, M. N., Fatin, Z. Z., & Nurisma, S. (2024). Pengembangan keterampilan abad 21 di pesantren modern. *Jurnal Ilmiah Penelitian Mahasiswa, 2*(4), 393–401. https://doi.org/10.61722/jipm.v2i4.298

Alfa, B. N., Kaidah, S., & Amrina, U. (2024). Peningkatan kreativitas siswa melalui pengenalan proses perancangan produk industri. *SOROT: Jurnal Pengabdian Kepada Masyarakat, 3*(2), 105–108. https://doi.org/10.32699/sorot.v3i2.7680

Amabile, T. M. (1996). *Creativity in context: Update to "The Social Psychology of Creativity."* Westview Press.

Artamevia, A., Surya, D., Fiti, T. K., & Kusumaningrum, H. (2025). Pengembangan SDM berkualitas: Kunci sukses institusi pendidikan. *Harmoni Pendidikan: Jurnal Ilmu Pendidikan, 1*. https://doi.org/10.62383/hardik.v1i4.893

Barrett, P., Treves, A., Shmis, T., Ambasz, D., & Ustinova, M. (2019). *The impact of school infrastructure on learning: A synthesis of the evidence.* World Bank Group.

Bharata, H. (2022). Analisis kemampuan berpikir kreatif siswa SMK pada pembelajaran jarak jauh di masa pandemi Covid-19. *Jurnal Ilmiah Pendidikan Matematika, 10*(1), 1–12. http://dx.doi.org/10.31941/delta.v10i1.1421

Daulay, S. H., Fitriani, S. F., & Ningsih, E. W. (2022). Pengaruh fasilitas sekolah terhadap kemampuan dan motivasi belajar siswa. *Edukatif: Jurnal Ilmu Pendidikan, 4*(3), 3731–3738. https://doi.org/10.31004/edukatif.v4i3.2553

Efrinaldi, E., Ambiyar, A., Maksum, H., & Waskito, W. (2023). Kontribusi bursa kerja khusus dan kemampuan bekerjasama terhadap kesiapan memasuki dunia kerja siswa sekolah menengah kejuruan. *Jurnal EDUCATIO (Jurnal Pendidikan Indonesia), 9*(1), 396–402. https://doi.org/10.29210/1202323060

Elvera, & Yesita, A. (2021). *Metodologi penelitian.* ANDI.

Fatmawati, T., & Jaya, A. (2025). Transformasi pendidikan dasar melalui kurikulum merdeka: Analisis dampak pada kemampuan berpikir kritis dan kreatif siswa. *Jurnal Ilmu Manajemen Sosial Humaniora (JIMSH), 7,* 14–30. https://doi.org/10.51454/jimsh.v7i1.811

Gregory, E., Hardiman, M., Yarmolinskaya, J., Rinne, L., & Limb, C. (2013). Building creative thinking in the classroom: From research to practice. *International Journal of Educational Research, 62,* 43–50. https://doi.org/10.1016/j.ijer.2013.06.003

Hariyadi, A. B., & Hariyati, N. (2020). Pentingnya fasilitas belajar berbasis teknologi informasi terhadap hasil belajar siswa. *Jurnal Inspirasi Manajemen Pendidikan, 8*(4), 558–569.

Hasmiati, H., Fawzani, N., & Muhlis, W. (2023). Implementasi kurikulum merdeka untuk mengembangkan kreativitas peserta didik di sekolah dasar. *Jurnal Pendidikan Dasar, 14*(2), 158–170.

Kusuma, G. P., & Wibowo, D. C. (2025). Pengaruh model problem-based learning terhadap hasil belajar siswa pada materi gaya dan gerak. *Jurnal Pendidikan Kimia, Fisika dan Biologi, 1*(1), 40–48. https://doi.org/10.61132/jupenkifb.v1i1.167

Lubis, A. A. G., Siahaan, A., & Tarigan, M. (2025). Strategi manajemen sarana dan prasarana untuk meningkatkan minat belajar siswa di MTsS SKB 3 Menteri Pembangunan Lidah Tanah. *Madani: Jurnal Ilmiah Multidisiplin, 3*(3), 170–181. https://doi.org/10.5281/zenodo.15235406

Mandailina, V. S. (2024). Pengaruh lingkungan belajar dan kebijakan sekolah terhadap kreativitas siswa di sekolah menengah pertama. *Seminar Nasional Paedagoria, 4,* 36–47.

Marnita, M., Taufiq, & Komariah, A. N. (2022). Perspektif kreativitas dalam pendidikan melalui thinking outside the box. *Jurnal Pendidikan dan Konseling, 4,* 11862–11868.

Maryani, I., & Hasanah, E. S. (2024). *Pembelajaran berdiferensiasi pada kurikulum merdeka.* K-Media.

Nilsson, H., & Backman, M. (2024). Retail employee turnover and turnover destinations – the role of human capital. *The International Review of Retail, Distribution and Consumer Research*, 1–25. https://doi.org/10.1080/09593969.2024.2370256

Nur'aini, A., & Narimo, S. (2023). *Implementasi kurikulum merdeka pada proses pembelajaran di SMK Negeri 3 Sukoharjo* (Skripsi, Universitas Muhammadiyah Surakarta) Surakarta, Indonesia. http://eprints.ums.ac.id/id/eprint/114784

Pebriani, S., Sumardi, L., & Alqadri, B. (2025). Dampak penerapan kurikulum merdeka terhadap kreativitas dan inovasi guru di SMP Negeri 1 Masbagik. *Jurnal Pendidikan, Sains, Geologi, dan Geofisika, 6*(1). https://doi.org/10.29303/goescienceed.v6i1.460

Prahastina, L., Indriayu, M., & Matsuri, M. (2024). Implementation of the merdeka curriculum and its impact on effective learning achievement in elementary school. In *Social, Humanities, and Educational Studies (SHES): Conference Series 7*(1), 166–173. https://doi.org/10.20961/shes.v7i1.84306

Rasnawati, A., Rahmawati, W., Akbar, P., & Putra, H. D. (2019). Analisis kemampuan berfikir kreatif matematis siswa SMK pada materi sistem persamaan linier dua variabel (SPLDV) di kota Cimahi. *Jurnal Cendekia, 3*(1), 164–177. https://doi.org/10.31004/cendekia.v3i1.87

Silaban, N., Napitupulu, T., Gultom, R., Simanungkalit, M., & Simatupang, L. (2023). Pengaruh kurikulum merdeka belajar terhadap kreativitas belajar PAK siswa kelas VII SMP Negeri 4 Laguboti Kabupaten Toba tahun pembelajaran 2022/2023. *Pendekar: Jurnal Pendidikan Berkarakter, 1*(5), 371–386. https://doi.org/10.61132/bima.v1i4.267

Sternberg, R. J., & Lubart, T. I. (2014). The concept of creativity: Prospects and paradigms. *Handbook of Creativity*, 3–15. https://doi.org/10.1017/cbo9780511807916.003

Sugiyono. (2022). *Metode penelitian bisnis: Pendekatan kuantitatif, kualitatif, kombinasi, dan R&D.* Alfabeta.

Tanjung, A., Darmansah, T., Oktapia, D., & Halawa, S. (2025). Efektivitas sosialisasi kebijakan pendidikan dalam meningkatkan kesadaran guru dan siswa. *Harmoni Pendidikan: Jurnal Ilmu Pendidikan, 1*. https://doi.org/10.62383/hardik.v2i1.1042

Yahya, N., Santaria, R., & Muhaemin, M. (2024). Manajemen dan evaluasi penerapan kurikulum merdeka di SMK Pusat Keunggulan. *Jurnal Riset dan Inovasi Pembelajaran, 4*(2), 1383–1393. https://doi.org/10.1567/jrip.v4i2.1567

Yuliani, E. (2021). Meningkatkan kemampuan guru dalam menyusun perangkat pembelajaran melalui supervisi. *J-KIP (Jurnal Keguruan dan Ilmu Pendidikan), 2*(3), 49–52. https://dx.doi.org/10.25157/j-kip.v2i1.4845